UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2020

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from ___________ to ___________

Commission file number: 000-55832

transphorm

Transphorm, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**82-1858829**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
75 Castilian Drive	
Goleta, California	**93117**
(Address of principal executive offices)	(Zip Code)

(805) 456-1300
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Trading Symbol(s)	Name of Each Exchange on Which Registered
N/A	N/A	N/A

Securities registered pursuant to Section 12(g) of the Act: **Common Stock, $0.0001 par value per share**

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities

Act. Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Exchange Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. ☒ Yes ☐ No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). ☒ Yes ☐ No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of “large accelerated filer,” “accelerated filer,” “smaller reporting company,” and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒	Smaller reporting company	☒
		Emerging growth company	☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management’s assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of June 30, 2020, the last business day of the registrant’s most recently completed second fiscal quarter, there was no public market for the registrant’s common stock.

As of February 28, 2021, 40,278,796 shares of the registrant’s common stock were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant’s Definitive Proxy Statement for its 2021 Annual Meeting of Stockholders, which will be filed within 120 days of the fiscal year ended December 31, 2020, are incorporated by reference into Part III of this report (or information will be provided by amendment to this Form 10-K), as noted herein.

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Glossary of Terms and Abbreviations

The following is a glossary of technical terms used in this Annual Report on Form 10-K (this “Report”):

AC – alternating current

AEC-Q101 – Automotive Electronic Council’s electronic components stress qualification standard

AFSW – Aizu Fujitsu Semiconductor Wafer Solutions, our joint venture wafer fabrication facility located in Aizu Wakamatsu, Japan

BJT – bipolar junction transistor, a semiconductor device

Bus voltage – voltage into, out of or within connections of a power electronic system

CMOS – complementary MOS (metal oxide semiconductor), widely used semiconductor transistor architecture

D2Pak – a surface mountable version of the TO220 package

DC – direct current

Die/Chip – an individual semiconductor device on the wafer, prior to packaging

EAR – Export Administration Regulation

Epi/Epiwafer/Epimaterials – GaN device layers grown on a substrate, from which active GaN-based devices are subsequently manufactured in a wafer fabrication facility

Fab – fabrication, generally referring to a semiconductor wafer fabrication facility

FET – field effect transistor, a type of switching transistor

Figure of Merit - a quantity used to characterize the performance of a device, system or method, relative to its alternatives

FIT – failure in time, referring to the expected number of device failures per billion hours of operation

GaN – gallium nitride

HEMT – high electron mobility transistor, a type of switching transistor with superior electronic properties

IGBT – insulated-gate bipolar transistor, a three-terminal power semiconductor device primarily used as an electronic switch

JEDEC – Joint Electron Device Engineering Council, an independent semiconductor engineering trade organization and standardization body that represents all areas of the electronics industry

LIDAR – light detection and ranging, a remote sensing method that uses light in the form of a pulsed laser to measure distance

Lossy – in the context of switching devices, subject to loss of power due to switching inefficiencies and other factors

MOCVD – metal organic chemical vapor deposition, a technique for layering GaN layers onto substrates such as a silicon substrate and making the starting GaN semiconductor material (i.e., an epiwafer)

Moore’s law – the observation that the number of transistors in a dense integrated circuit doubles about every two years

MOSFET – metal-oxide-semiconductor field-effect transistor, a type of transistor

Power converters / Inverters – electronic systems used to convert electricity from AC to DC (such as a charger), DC-AC (such as an inverter) or in some cases AC-AC or DC-DC within the systems converting from one voltage level to another

PQFN – power quad flat no lead package, a compact surface mountable package used in power semiconductors

RF – radio frequency

SCR – silicon controlled rectifier, an early semiconductor switching device

Si – silicon

SiC – silicon carbide

TO – transistor outline leaded packages commonly used in power semiconductors (such as TO220, TO247)

Risk Factor Summary

Our business is subject to significant risks and uncertainties that make an investment in us speculative and risky. Below we summarize what we believe are the principal risk factors but these risks are not the only ones we face, and you should carefully review and consider the full discussion of our risk factors in the section titled "Risk Factors," together with the other information in this Annual Report on Form 10-K. If any of the following risks actually occurs (or if any of those listed elsewhere in this Annual Report on Form 10-K occur), our business, reputation, financial condition, results of operations, revenue, and future prospects could be seriously harmed. Additional risks and uncertainties that we are unaware of, or that we currently believe are not material, may also become important factors that adversely affect our business.

- We have a history of losses, anticipate increasing our operating expenses in the future, and may not be able to achieve or maintain profitability.

- Our recurring operating losses and our current operating plans raise substantial doubt about our ability to continue as a going concern for the next twelve months. Our ability to continue as a going concern will depend on us being able to raise significant additional capital to fund our operations, which may be unavailable on attractive terms, if at all, and could dilute your investment.

- Our quarterly results of operations are likely to vary from period to period, which could cause the market price of our common stock to fluctuate or decline.

- Our business could be adversely affected by the effects of health epidemics or pandemic, including the ongoing COVID-19 global pandemic.

- We may not be able to develop new technologies and products to satisfy changes in customer demand or industry standards, and our competitors could develop products that decrease the demand for our products.

- We must commit resources to development, design and production prior to receipt of purchase commitments and could lose some or all of the associated investment.

- We compete in highly competitive markets, and competitive pressures from existing and new companies may adversely impact our business and operating results.

- We rely on third-party channel partners to sell our products. If our partners fail to perform, our ability to sell our products and services could be limited, and if we fail to optimize our channel partner model going forward, our operating results could be harmed.

- We rely on limited sources of wafer fabrication, packaged products fabrication and product testing, the loss of which could delay and limit our product shipments.

- Because we depend on third-party manufacturers to build portions of our products, we are susceptible to manufacturing delays and pricing fluctuations that could prevent us from shipping customer orders on time, if at all, or on a cost-effective basis, which may result in the loss of sales, income and customers.

- Our sales cycles can be long and unpredictable, and our sales efforts require considerable time and expense.

- Our current operations are concentrated in one location and in the event of an earthquake, terrorist attack or other disaster affecting this location or those of our major suppliers, our operations may be interrupted and our business may be harmed.

- The loss of one or more key employees or our inability to attract and retain qualified personnel could harm our business.
- If we fail to effectively manage our growth, our business, financial condition and results of operations would be harmed.
- We are subject to a number of risks associated with international sales and operations.
- We are subject to government regulation, including import, export and economic sanctions laws and regulations that may expose us to liability and increase our costs.
- Our sales to government customers subject us to uncertainties regarding fiscal funding approvals, renegotiations or terminations at the discretion of the government, as well as audits and investigations, which could result in litigation, penalties and sanctions including early termination, suspension and debarment.
- Any failure by us to protect our proprietary technologies or maintain the right to use certain technologies may negatively affect our ability to compete.
- If we fail to comply with our obligations under any license, collaboration or other agreements, we may be required to pay damages and could lose certain intellectual property rights.
- Any failure to maintain effective internal controls over our financial reporting could materially and adversely affect us.
- We have identified material weaknesses in our internal control over financial reporting that, if not properly remediated, could result in material misstatements in our consolidated financial statements in future periods.
- Our common stock trades on the OTCQB instead of a national securities exchange, which may make it more difficult for stockholders to sell their shares.
- Our common stock may not be eligible for listing or quotation on any securities exchange.
- The designation of our common stock as a “penny stock” would limit the liquidity of our common stock.
- Sales of substantial amounts of our common stock in the public markets, or the perception that such sales might occur, could cause the market price of our common stock to decline significantly, even if our business is doing well.
- We may be subject to certain liquidated damages pursuant to the registration rights agreement we entered into with certain holders of our securities.
- Our principal stockholders and management have substantial control over us and could delay or prevent a change in corporate control.
- Anti-takeover provisions in our charter documents could make an acquisition of us more difficult and may prevent attempts by our stockholders to replace or remove our management.

Note Regarding Forward-Looking Statements

This Annual Report, including the sections titled “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and “Business,” contains express or implied forward-looking statements that are based on our management’s belief and assumptions and on information currently available to our management. All statements other than statements of historical fact contained in this Report are forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as “may,” “could,” “will,” “would,” “should,” “expect,” “plan,” “anticipate,” “believe,” “estimate,” “intend,” “predict,” “seek,” “contemplate,” “project,” “continue,” “potential,” “ongoing” or the negative of these terms or other comparable terminology. These forward-looking statements include, but are not limited to, statements about:

- the implementation of our business model and strategic plans for our business, technologies and products;
- our ability to raise additional funds to continue to operate our business, including our joint venture wafer fabrication facility located in Aizu Wakamatsu, Japan, and to satisfy our obligations under our agreements with our lenders;
- our costs in meeting our contractual obligations, including the cash flow impact of purchasing the remaining interest in our joint venture wafer fabrication facility and operating such facility, and our ability to maintain our contracts for their expected durations;
- the impact of the ongoing COVID-19 pandemic on our industry and our business, operations and financial condition, as well as on the global economy;
- the rate and degree of market acceptance of any of our products or GaN technology in general, including changes due to the impact of (i) new GaN fabrication sources, (ii) the performance of GaN technology, whether perceived or actual, relative to competing semiconductor materials, and (iii) the performance of our products, whether perceived or actual, compared to competing GaN-based, silicon-based and other products;
- the timing and success of product releases by us and our customers;
- our ability to develop new products and technologies;
- our future financial performance, including our expectations regarding our revenue, expenses, ongoing losses, and capital requirements;
- our needs for additional financing, ability to obtain additional funds for our operations and our intended use of any such funds;
- our receipt and timing of any royalties, milestone payments or payments for products, under any current or future collaboration, license or other agreements or arrangements, including the credit risks of our customers;
- our ability to obtain, maintain, enforce, defend and enhance our intellectual property rights;
- the strength and marketability of our intellectual property portfolio;
- our dependence on current and future collaborators for developing, manufacturing or otherwise bringing our products to market;
- the ability of our third party supply and manufacturing partners to meet our current and future business needs;

- the throughput of our fabrication facilities and third party foundries, as well as the ability of such facilities and foundries to ramp up production;

- our expectations regarding our classification as a “smaller reporting company,” as defined under the Securities Exchange Act of 1934 (the “Exchange Act”) and an “emerging growth company” under the JOBS Act in future periods;

- the total addressable market and growth rates of the markets in which we compete;

- the competitive landscape of our industry;

- the impact of “controlled company” exemptions that may be available to us in the future under Nasdaq or NYSE listing standards and our use of the applicable phase-in periods; and

- the impact of government regulation and developments relating to us, our competitors or our industry.

We caution you that the foregoing list may not contain all of the forward-looking statements made in this Report.

You should not rely upon forward-looking statements as predictions of future events. We have based the forward-looking statements contained in this Report primarily on our current expectations and projections about future events and trends that we believe may affect our business, financial condition, results of operations, and prospects. The outcome of the events described in these forward-looking statements is subject to significant risks, uncertainties, and other factors, including those described in the section titled “Risk Factors” and elsewhere in this report. Moreover, we operate in a very competitive and rapidly changing environment. New risks and uncertainties emerge from time to time and it is not possible for us to predict all risks and uncertainties that could have an impact on the forward-looking statements contained in this Report. We cannot assure you that the results, events, and circumstances reflected in the forward-looking statements will be achieved or occur, and actual results, events, or circumstances could differ materially from those described in the forward-looking statements.

Neither we nor any other person assumes responsibility for the accuracy and completeness of any of these forward-looking statements. Moreover, the forward-looking statements made in this Report relate only to events as of the date on which the statements are made. We undertake no obligation to update any forward-looking statements made in this Report to reflect events or circumstances after the date of this Report or to reflect new information or the occurrence of unanticipated events, except as required by law. We may not actually achieve the plans, intentions, or expectations disclosed in our forward-looking statements and you should not place undue reliance on our forward-looking statements. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures, or investments we may make.

In addition, statements that “we believe” and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this Report, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

Part I

Item 1. Business

Unless otherwise stated or the context otherwise indicates, references to “Transphorm,” the “Company,” “we,” “our,” “us,” or similar terms refer to Transphorm, Inc. and its subsidiaries.

Overview

We are a global semiconductor company founded in 2007. We are a pioneer, and a market and technology leader, in the wide-bandgap GaN power electronics field for high voltage power conversion applications. We deliver high quality and reliable GaN devices with high performance, while providing application design support to a growing customer base. Our GaN devices allow customers to design smaller, lighter and cooler power systems creating increased functional value in end products including smartphone power adapters/fast-chargers, power supplies for datacenter servers/communication, industrial power converters and chargers/converters/inverters for electric vehicles, among other applications. We deploy our unique vertically integrated innovation model that leverages one of the industry’s most experienced GaN engineering teams (with over 300 years of combined experience) at every development stage: device design, materials growth, device fabrication, packaging, circuits and application support. This approach, backed by one of the GaN power industry’s largest intellectual property portfolios with access to over 1,000 world-wide patents, has yielded the industry’s first automotive-grade AEC-Q101 and JEDEC qualified high voltage GaN FETs. Our innovations are designed to move power electronics beyond the limitations of silicon and provide our customers with the potential to achieve higher efficiency or lower loss (e.g., titanium-class performance in power supplies), higher power density (e.g., compact size or improved form factor) and, in many designs, an overall lower system cost.

Our Technology

Driving “Moore’s law of Power” with GaN: At the core of any power converter or inverter widely utilized in converting electrical energy from one form to another (for example, AC to DC), are semiconductor-based electronic switches, traditionally made with silicon-based devices. While silicon and silicon-based switching transistors like MOSFETs and IGBTs are reaching their technological limits, GaN FETs have significant potential for performance to further the roadmap for power conversion systems that require ever increasing power density (ability to pack power in a small volume), analogous to Moore’s law for digital semiconductors. In this case, the “Moore’s law” analogy is the increasing power density over time, which has been achieved via improvements in switching devices, starting with SCRs, then BJTs, followed by IGBTs and MOSFETs, all of which are silicon-based devices. Relative to silicon-based devices, GaN devices offer advantages including higher switching speeds, higher breakdown voltages and lower resistance. Today, wide-bandgap semiconductors like SiC and GaN are driving the innovation in power electronics.

Our GaN FETs: Our proprietary GaN on silicon material growth (or epiwafer technology) knowhow via MOCVD allows us to build our GaN devices on inexpensive silicon substrates, thereby leveraging the cost structure of well-established silicon-based manufacturing. Our proprietary GaN epiwafer designs also allow us to achieve devices capable of sustaining high voltages well in excess of the 650 Volts required for typical power switching applications, with ultra-low losses. At the core of our GaN FET device is a two-chip, normally-off 650 Volt GaN platform, integrating a low voltage Si FET input/drive stage with a high voltage GaN output stage to deliver a normally-off, packaged power device to the end user. Compared to other approaches by which a normally-off, high voltage GaN switching device can be made, our approach is more robust than other alternatives (so-called junction gated or p-GaN type devices) that typically offer low safety margins. A typical standard Si-MOSFET consists of a normally-off input portion (gate control) with a normally-on output portion (high voltage drift region), that are integrated in one device. We have integrated two separate die in one package in a chip-on-chip configuration to achieve the best of both worlds - high robustness and high performance. The result is a normally-off power device package with a combination of reliability, robustness, design margin and performance. This approach is now being adopted by other GaN manufacturers, which we believe validates our approach and makes our strong intellectual property even more important going forward. Our GaN FETs stand out in the industry due to their capability to withstand much higher voltages than those required for device ratings (for instance, our standard 650 Volt products have a destructive breakdown voltage in excess of 1,000 Volts, which is high in comparison to the typical range for our competitors' GaN devices of 650 Volts to 1,000 Volts), contributing to our safety margins in operation.

Continued Innovation: We have a strong innovation track record as evidenced by a series of firsts in the GaN high voltage arena, including the first automotive-grade AEC-Q101 and JEDEC qualified high voltage GaN FETs. We have also released multiple generations of products beginning with Gen-1 and Gen-2 prior to 2016, to Gen-3 in 2018, Gen-4 in 2020 and now our Gen-5 offerings under development. Each product platform seeks to improve key industry metrics (or figures of merit) designed to result in both improved performance (lower losses in power converters/inverters for our customers) and lower cost by enabling lower die size and simpler packages.

Epiwafer Products: Recently, we also started to monetize our strong core expertise in GaN epiwafer technology by providing GaN epiwafer products for the RF/microwave/millimeter wave market, as well as for certain strategic customers in the power device market. In 2018 and 2019, we were awarded the base portion and option portion, respectively, of an $18.5 million contract by the U.S. Navy, which we believe is validation of our technology, intellectual property and capability in this area. We aim to establish ourselves as a U.S.-based supplier for advanced GaN epiwafer products for both the U.S. Department of Defense and commercial applications.

Our Solution and Business Model

Our GaN product offerings are based on innovation across the value chain, starting from GaN material and epiwafers to GaN device design, and from wafer fabrication to packaging, as well as application-based reference designs that help our customers extract the most value from GaN. This vertically integrated control of the value chain has resulted in rapid innovation, manufacturing control, and the high quality, high reliability (Q+RTM) brand of high voltage GaN offerings that we offer.

Target Power Market Focus: Our GaN on silicon FET products start with a 650 Volt rating and currently go up to 900 Volts, and we are developing products that we believe will go up to 1,200 Volts. 650 Volt products represent a large portion of the power conversion market because the world-wide line voltage into which these converters have to plug in ranges from 110 Volts to 240 Volts, resulting in in-system voltages of 400 Volts to 500 Volts that necessitate a 650 Volt power device. Similarly, higher bus voltage applications such as those running off an 800 Volt battery for an inverter require higher voltage ratings from power devices. As the voltage requirement gets higher, a silicon-based power device switch becomes increasingly lossy and the differentiation in performance offered by a GaN device increases.

Products: Our products currently address power conversion applications ranging from approximately 30 watts to approximately 10 kilowatts. Our GaN FETs are offered in various packages, addressing our customers' needs from very robust to compact packages. In addition to the appropriate device, a robust and easy-to-use package is key for a power product because the heat dissipated in the device ultimately is removed via the package and then the system heat sink. TO packages have historically served a significant role in the power semiconductor industry. We have designed our GaN products in these TO packages to deliver kilowatt class power that takes advantage of GaN's high efficiency and low loss switching capability along with a solid thermal interface offered by the TO package. We also offer surface mount equivalents of the TO packages such as the D2Pak, where surface mount capability is a must. On the other hand, for fast switching compact power adapters (typically sub-300 watt), the compact PQFN package is our standard offering. Our packaged products also incorporate simple but powerful high frequency and high speed switching design philosophies, resulting in GaN solutions with stable operation at multi kilowatts, at high-speed and high frequency (multi-100 kHz to MHz), all while maintaining high quality and reliability.

Markets: Our GaN products switch much faster than equivalent silicon products and increase a system's power density, producing greater efficiency while enabling system size reduction. With their proven reliability and ability to reduce size and save energy, 650 Volt GaN FETs have now been adopted in the market. GaN provides cost-competitive, easy-to-embed solutions that reduce energy loss and system size by as much as 40 percent, while enabling system cost reduction, to simplify converter and inverter design and manufacturing.

Our products today address power conversion applications including:

- low power applications (30 watt to 300 watt) such as smartphone power adapters/fast chargers and laptop and appliance power supplies;
- medium power applications (several hundred watts to sub 5-kilowatts) such as power supplies for datacenter servers, communications infrastructure, and industrial servo drives for motors and robotics; and
- high power applications (greater than 5 kilowatts) such as onboard chargers, converters and inverters for electric vehicles and power supplies for industrial applications.

We believe power conversion with high voltage semiconductor devices (e.g., 650 Volt devices) is a large market opportunity. Based on reports from various third party research firms, we estimate the total addressable market for GaN to be approximately $1.6 billion. Market research firm Yole Développement predicts growth for the GaN power device market with GaN power semiconductor-related revenues as high as $400 million by 2023.

In addition to the power semiconductor market, we have started supplying GaN epiwafers on various substrates, including silicon carbide, sapphire and silicon, ranging from 4 to 6 inches in diameter, for RF/microwave/millimeter wave device markets, and we believe we are in a position to target the growing 5G RF market in the future. We believe the existing market for GaN RF transistors for wireless infrastructure and 5G exceeds $500 million, and we can service a portion of this market attributed to epiwafers. For these areas, we also have the advantage of being a pure-play epiwafer foundry as we do not make RF device products.

Our History

Overview: Our company was launched in 2007 by experienced founders Professor Umesh Mishra and Dr. Primit Parikh, with more than 30 years of GaN technology and business experience between them at the time, with the goal of commercializing GaN technology for the large power semiconductor market while making a global impact on electrical energy savings and simplifying power conversion for end users. We have been a key player in the area of high voltage GaN power devices from our early days with several industry firsts, including the first GaN on silicon device to the first 600 Volt GaN device JEDEC qualification, the first high voltage GaN automotive qualified product under the stringent AEC-Q101 standard, the first high temperature (175C) rated GaN offering, and the first field reliability data including over 7 billion hours of operation with a statistical failure rate of <1 FIT (1 per billion hours of operation).

Blue Chip Partnerships: Throughout our history, we have established blue chip partnerships with strong investors, manufacturing and channel partners, key customers, and strategic investors and partners. In 2020 and 2019, Nexperia B.V. ("Nexperia") and the U.S. government each accounted for more than ten percent of our revenues. In 2018, Avnet Technology Hong Kong Ltd., Fujitsu Electronics Pacific Asia Ltd and Digikey Corporation each accounted for more than ten percent of our revenues.

In 2014, we established a business integration, IP acquisition/licensing and channel partnership agreement with Fujitsu Limited ("Fujitsu") and Fujitsu Semiconductor Limited ("FSL"), pursuant to which we established Transphorm Japan as a wholly owned subsidiary, with a leading manufacturing and quality team from FSL. In connection with this agreement, we entered into a manufacturing partnership for FSL's high quality 6-inch silicon wafer fabrication plant in Aizu Wakamatsu, Japan that allowed us to bring silicon-like manufacturing excellence to GaN products. We also acquired a patent portfolio from FSL and a license to a separate portfolio from Fujitsu. This relationship further led to the establishment in 2017 of a joint venture with FSL for the 6-inch Aizu facility, in which we are a currently a noncontrolling, minority partner. In April 2020, FSL exercised its put option and notified us that it intended to exit the joint venture by selling its 51% interest in the Aizu facility to us. While the joint venture agreement with FSL provides that completion of the transaction was to take place as soon as 60 days from the date of the exercise notice, such transaction is subject to regulatory and other approvals in Japan that we believe will take up to the second quarter of 2021 to obtain, assuming such approval is received at all. For more information, see the section below titled "—Manufacturing and Supply—Wafer Fabrication and Joint Venture with Fujitsu."

In 2015, KKR Phorm Investors L.P. ("Phorm"), an affiliate of Kohlberg Kravis Roberts & Co. L.P., made an investment of $70 million in us with the goal of enabling us to get our GaN products that had completed concept, engineering, manufacturing, reliability and quality testing to mass market. As of the filing of this Report, Phorm remains our largest stockholder.

In 2017, we entered into a partnership with Yaskawa Electric Corporation of Japan ("Yaskawa"), a global leader in motion control and a pioneer in the adoption of new semiconductor technology for the field of servo motors, robotics and renewables. In October 2017, Yaskawa loaned us $15.0 million pursuant to a convertible promissory note that is convertible, in whole or in part and at Yaskawa's option, into our common stock (subject to a maximum of 3,076,171 shares). Yaskawa seeks to enable smaller, faster and more efficient power electronics servo drives in applications such as robotics, which use servo motors to enable movement along various axes of motion in a robot, to improve robot functions. We are developing customized versions of our GaN devices for Yaskawa and for other motor drive use.

In December 2020, we entered into a cooperation and development agreement with Yaskawa, pursuant to which Yaskawa agreed to provide $4.0 million over approximately three years to fund development activities related to industrial power conversion applications, with an initial focus on servo motor drive applications. Yaskawa provided $1.0 million of this $4.0 million commitment in December 2020. The Company evaluated and concluded that the deliverables are the same and nature of the services to be provided to Yaskawa will be consistent over the period of approximately three years. Accordingly, the Company recognized $333 thousand as revenue during the year ended December 31, 2020. As of December 31, 2020, $667 thousand is included in deferred revenue on the consolidated balance sheet.

In 2018, we established a five-year cooperation agreement with Nexperia, a leader in silicon-based power semiconductors for automotive products, with the goal of establishing a second source of our GaN products and better positioning to penetrate the automotive market with our GaN products in the long term. Through a combination of equity ownership, a loan agreement, technology development projects, and licensing of our wafer-fabrication process and certain products, we secured significant funding from Nexperia. We believe this agreement is further indicative of our strong intellectual property portfolio as well as our ability to create revenue streams by monetizing our intellectual property.

In 2020, we established a relationship with Marelli, a leading automotive Tier-1 supplier (headquartered in Japan and with a world-wide footprint) for long term development of our automotive converter and inverter products. Marelli also made an equity investment of $4.0 million in our February 2020 private placement and committed to invest an additional $1 million by March 31, 2021, subject to there being no material adverse change to our financial condition.

In December 2020, we entered into a joint venture agreement with JCP Capital Management, LLC (controlling party with 75% ownership) to create GaNovation, Pte. Ltd., a joint venture company in Singapore, to engage in the business of distribution, development and supply of GaN products. In connection with the establishment of GaNovation, we appointed GaNovation as our exclusive distributor in Greater China, with rights to procure epiwafers, processed wafers and Si-MOSFET wafers from us, rebrand and resell packaged products purchased from us, and customize and develop mutually-agreed-upon products. The operations of AFSW is expected to be contributed into this joint venture upon the approval of the regulatory authorities.

Customer Partnerships: Beginning in 2018, we have empowered our customers' success and have seen several customers introduce their end power conversion products such as power supplies, battery chargers and fast charging adapters into the market. For example, Corsair, a leading supplier of high performance gaming equipment, successfully introduced its AX1600i series of GaN-based power supplies. This success has served a significant role in allowing us to ship more than half a million GaN products to market. We estimate that the half million GaN products estimated to be operating now for two years have resulted in at least five billion hours of combined field operation - a first for high voltage GaN. As mentioned above, Yaskawa has partnered with us with a view of enabling GaN devices for servo drives in robotics applications. We have also developed a partnership with a company based in Asia with key design expertise for GaN-based adapter products, including certain non-recurring engineering payment-based development by us for our partner entailing limited time exclusivity for specific products developed pursuant to the partnership, subject to meeting minimum quarterly sales. We own a minority 1% share in this partner company, headquartered in Hong Kong. Lastly, in 2018 and 2019, the U.S. Navy awarded us the base portion and option portion, respectively, of an $18.5 million three-year contract to create a U.S.-based source of advanced GaN epiwafer materials for the U.S. Department of Defense, which we believe exemplifies the recognition of our strong GaN MOCVD epiwafer platform, intellectual property and manufacturing scale and creates an opportunity for us to sell into the broader GaN RF epiwafer market. This has helped us in developing a second vertical - our GaN epiwafer business - to supplement our primary business of GaN power products. In this area, we have started to sell epiwafers, targeting both customers within the U.S. Department of Defense (including those resulting from the impact of the U.S. Navy program as well as others) and commercial RF and power device customers.

We are dependent on revenues from certain key customers such as Nexperia and the U.S. government, and distributors who sell to Corsair, Bel Power Systems, Common Power and Xentris, as well as on revenues from sales of our epiwafer products to various customers engaged in research and development for the U.S. Department of Defense utilizing our GaN epiwafer products. In particular, for the years ended December 31, 2020 and 2019, Nexperia and the U.S. government each accounted for more than ten percent of our revenues.

Commercialization

Current GaN Power Products: We have qualified and released to manufacturing a number of products based on our 650 Volt GaN FET technology. Our current product portfolio in the market is based on our 650 Volt Gen-1 to Gen-4 GaN FET platforms. Our products are offered in the industry standard TO packages (TO247 and TO220) or the 8x8 PQFN surface mount packages. The TO packages offer the most robust thermal performance and result in higher power per device, ranging from 1 kilowatt to over 5 kilowatt, and the PQFN packages offer the most compact and higher speed switching performance, typically for sub 2-kilowatt applications, including adapter applications. We also have a 900 Volt GaN FET product in the market, and believe that we are the only company to have qualified a 900 Volt GaN device to date. The key markets that are currently addressed by our products include:

- Power adapters and chargers and gaming power supplies
- Data center and infrastructure power supplies
- Industrial applications - Power Supplies, UPS/battery chargers, servo drives

Additionally, we hope to enter the automotive products market in the mid-term, via DC-DC converters, on board chargers, and AC inverters for off-grid power, for which we are actively working with customers, and in the longer term, via EV power-train and high speed chargers after our development of larger current, higher power GaN devices. In the fourth quarter of 2020, we announced sampling our Gen-5 devices addressed at EV applications and other market areas.

Application Resources: We develop reference designs and evaluation boards that help our customers incorporate our GaN devices into the design of their power conversion products. We also make our applications kits available on distribution sites such as Digikey and Mouser.

Gen-4 Products: Our Gen-4 platform, which saw the introduction of two products in the market in 2020, further improves the industry metric of resistance per unit die area and enables simpler packaging. Our next priority is to complete AEC Q1010 (automotive) qualification and release more products incorporating our 650 Volt Gen-4 platform in the market. A summary of our Gen-4 products is below:

- 650 Volt/Gen-4/250-300 mohm class GaN FET for 45 watt to 100 watt class adapters (released in the second quarter of 2020);

- 650 Volt/Gen-4/450-500 mohm class GaN FET for 24 watt to 50 watt class adapters (released in the fourth quarter of 2020); and

- 650 Volt/Gen-4/35 mohm class GaN FET for kilowatt class general power conversion applications including data-centers and industrial (released in the second quarter of 2020).

One of our near-term focus areas is to commercialize Gen-4 products in 30 watt to 150 watt adapters. We are working with a design partner in Asia and have the capability to provide a reference design-based solution for these power adapters. As anticipated, in the second quarter of 2020 one of our customers launched a 65 watt slim-adapter that incorporated our GaN products. The continued relationship with our Asia design partner, as well as expanding our own application engineering team, is important for our success in the adapter market. Further, the success of our design-in with end customers is critical to us securing an early ramp in adapter revenues.

Higher Voltage, 900 Volt FETs: We believe we are the only company to have qualified 900 Volt GaN FETs. These products are used for power conversion applications that involve higher in-circuit voltages in excess of 600 Volts to 700 Volts or applications that run off a higher voltage battery. We released our Gen-3 JEDEC qualified commercial 900 Volt product in August 2020.

Automotive Products and Partners: Our GaN products are capable of being qualified for automotive applications following the AEC-Q101 standard. We have already AEC-Q101-qualified our Gen-2 and Gen-3 based products and we are targeting AEC-Q101 qualification of our Gen-4 based 650 Volt/35 mohm product in the first quarter of 2021. The first revenues from automotive applications are not expected until 2022. With the establishment of our product development relationship with Marelli, we met our target of adding one automotive customer in 2020. Our revenues from automotive applications are dependent on our activities with certain Japanese automotive partners as well as our non-contractual relationship with Nexperia, which plans to offer their automotive products both through licensing our technology and relying, in part, on us for epiwafer procurement. Success with Japanese automotive partners and Nexperia's success in their automotive outreach would influence both the timing and ramp-up of our automotive revenues.

Epiwafer Business: We view our epiwafer business as a vertical that supplements our primary GaN power device business. In 2018 and 2019, we secured the base portion and option portion, respectively, of an $18.5 million three-year contract from the U.S. Navy for commercialization of GaN-based epiwafers on various substrates including silicon carbide, silicon and sapphire. This is a cost plus fee type contract with various milestones to be achieved by us. We began generating revenues from the sale of GaN epiwafers for the RF GaN market to the U.S. Department of Defense in 2020, and we expect our revenues from this vertical to increase in 2021 as compared to 2020. We believe this contract with the U.S. Navy provides a strong base for our epiwafer business, though such business is not limited to defense customers as we will also be targeting commercial RF GaN epiwafer sales for the RF GaN market.

Research and Development ("R&D")

Our innovation is targeted at maintaining a leadership position in the GaN power device market. We completed development of our first Gen-4 products in 2020 and will continue development of more Gen-4 products based on customer needs. Further, we have also started working on our next improvement in figure of merit (a quality of semiconductor devices impacting performance limits) through our Gen-5 based platform. The Gen-5 platform also includes products with higher current and power than our Gen-3 and Gen-4 products, and it will help address 5 kilowatt to 10 kilowatt applications more easily. In addition to the commercialization plan for our Gen-4 products discussed above, we are currently targeting the release of our first Gen-5 based device in 2021.

We are also in the initial stages of exploring 1,200 Volt GaN devices, which are partly funded by a research sub-contract from the U.S. Department of Energy ARPA-E (Advanced Research Project Agency-Energy) agency.

Based upon progress and competitive positioning, we are targeting a potential release of a 1,200 Volt GaN device after 2021.

Intellectual Property

Proprietary Protection: Our commercial success depends in part on our ability to continuously obtain and maintain proprietary protection for our GaN products, associated solutions and other know-how, to operate without infringing the proprietary rights of others, and to prevent others from infringing on our proprietary rights. We have been building and are continuing to build our intellectual property portfolio relating to our GaN products, including GaN products that can be used in the power conversion industry. Our policy is to seek to protect our proprietary position by, among other methods, filing and licensing U.S. and certain foreign patent applications related to our proprietary technology, inventions and improvements that are important to the development and implementation of our business. We also rely on trade secrets, know-how, and technological innovation to develop and maintain our proprietary position. We cannot be sure that patents will be granted with respect to any of our owned or licensed pending patent applications or with respect to any patent applications filed or licensed by us in the future, nor can we be sure that any of our existing owned or licensed patents or any patents that may be granted or licensed to us in the future will be commercially useful in protecting our technology.

IP Leadership: We are a world leader in GaN power semiconductor based intellectual property, with a patent portfolio that has access to over 1,000 patents comprising our directly owned patents, exclusive, sole or nonexclusive licenses of key portfolios from The University of California, Santa Barbara ("UCSB"), Furukawa Electric Co., Ltd. ("Furukawa") and Fujitsu, as well as a nonexclusive license from Cree, Inc. ("Cree") for the field of GaN power devices. The strength of our portfolio lies in the fact that our intellectual property covers all aspects of the GaN value chain, ranging from GaN epitaxial materials to device design to wafer fabrication processes to packages as well as GaN-based circuits and applications.

Portfolio: Our patent portfolio includes pending patent applications and issued patents in the United States and in foreign countries. As of December 31, 2020, our owned and licensed patent portfolio consisted of over 850 issued patents and over 200 pending patent applications around the world. Our over 330 directly owned patents are complemented by 150 patents from Furukawa's sole licensed intellectual property and over 170 patents from Fujitsu's nonexclusively licensed intellectual property in the power semiconductor area. The approximately 25 patents exclusively licensed from UCSB include some fundamental early intellectual property on growth of GaN on silicon substrates and unique intellectual property on nitrogen polar GaN, which was pivotal to us being awarded the contract from the U.S. Navy. Additionally, we hold a nonexclusive license from Cree to over 300 GaN material/device patents. Our licenses for the UCSB, Furukawa and Cree patents are royalty-bearing, and we pay royalties based on total revenues. The license for the Fujitsu patents is not royalty-bearing. We have also sub-licensed the UCSB and Furukawa patents to Nexperia on a royalty-bearing basis, which helps us defray the cost of maintaining these intellectual property portfolios.

Patent life determination depends on the date of filing of the application and other factors under the patent laws. In most countries, including the United States, the patent term is generally 20 years from the earliest claimed filing date of a non-provisional patent application in the applicable country.

UCSB license agreement

We entered into a license agreement with UCSB in 2007. As of December 31, 2020, we had in-licensed 29 patents or patent applications under this agreement. The UCSB license agreement requires us to use commercially reasonable efforts, consistent with demand in the marketplace and industry conditions and development timelines, to research, develop, market and manufacture products that are licensed under the agreement. We have the right to sublicense these rights to third parties. The UCSB license is subject to the rights of the U.S. government under any and all applicable laws including substantially manufacturing all licensed products in the United States, unless such requirement is waived by the U.S. government. In addition, we have the obligation to pay UCSB's patent prosecution and maintenance costs, as well as royalties at a low single-digit percentage of any net revenue generated by our sale of any licensed product. In the event we grant a sublicense under the licensed patent rights, we also have the obligation to pay UCSB a certain portion of the sublicense royalties equal to at least as much as would have been due from us to UCSB under the parent license. We have one sublicense in place for which we receive a certain portion of our maintenance fees and certain royalties, which will be passed on to UCSB. We may terminate this license agreement at any time by providing 90 days' written notice to UCSB.

Furukawa license agreement

We entered into a license agreement with Furukawa in 2014. As of December 31, 2020, we had in-licensed 150 issued patents in the U.S. and foreign countries under this agreement. We have the right to sublicense these rights to third parties. We share in the maintenance costs for the licensed patents by paying a fixed annual maintenance fee of $200,000, as well as royalties at a low single-digit percentage of any net revenue generated by our sale of any licensed product. In the event we grant a sublicense under the licensed patent rights, we also have the obligation to pay Furukawa a certain portion of the sublicense royalties. We have one sublicense in place for which we receive a certain portion of our maintenance fees and certain royalties, which will be passed on to Furukawa. Either party may terminate or renew this license agreement after ten years from entry into the agreement.

Fujitsu license agreement

We entered into a license agreement with Fujitsu in 2013. As of December 31, 2020, we had in-licensed 163 issued and pending patents in the U.S. and foreign countries under this agreement. We do not have the right to sublicense these rights to third parties. Under the terms of this license agreement, Fujitsu has no obligation to sue or enforce the patent rights against third party infringers. Our license from Fujitsu is fully paid up and royalty free worldwide, with nonexclusive rights for power electronics. This agreement is non-terminable.

Cree license agreement

We entered into a license agreement with Cree in 2013. As of December 31, 2020, we had in-licensed over 420 issued and pending patents in the U.S. and foreign countries under this agreement. We do not have the right to sublicense these rights to third parties. Under the terms of this license agreement, Cree has no obligation to sue or enforce the patent rights against third party infringers. We have the obligation to pay royalties at a low single-digit percentage of any net revenue generated by our sale of any licensed product. Either party may terminate or review this license agreement every three years.

Our Technology Licenses and Assignments

Our strategy for the protection of our proprietary technology is to seek worldwide patent protection with a focus on jurisdictions that represent significant global power semiconductor markets. However, we assess on a case-by-case basis whether it is strategically more favorable to maintain trade secret protection for our inventions and "know-how" rather than pursue patent protection. Generally, patents have a term of twenty years from the earliest priority date, assuming that all maintenance fees are paid, no portion of the patent has been terminally disclaimed and the patent has not been invalidated. In certain jurisdictions, and in certain circumstances, patent terms can be extended or shortened.

Although our current GaN products are based on the 2-chip, normally-off configuration, our intellectual property also includes patents on multiple approaches for the 1-chip, normally-off or the e-mode GaN device technology, including patents on the so called "p type" gated GaN device approaches.

As the GaN power semiconductor business grows, we expect to be in a strong position to demonstrate the strength of our intellectual property position to customers and to continue to monetize our intellectual property.

Trademarks and Trade Secrets: Trademarks form an important part of branding our products, the philosophy behind those products and the Company itself. Some of our key trademarks are the Transphorm logo (with the globe), Q+R (our Quality and Reliability brand), SuperGaN (our highest performance new generation of GaN products), and EZ GaN. We also rely on trade-secret protection for our confidential and proprietary information, and we typically use non-disclosure agreements when commencing a relationship with a customer or partner, particularly when we believe we will share proprietary information. We have an internal program to document our trade-secrets for each major area of our technology and operations. We cannot be sure that we can meaningfully protect our trade secrets on a continuing basis. Others may independently develop substantially equivalent confidential and proprietary information or otherwise gain access to our trade secrets.

Licensing to Nexperia: As part of our long-term cooperation agreement with Nexperia and in exchange for Nexperia's original investment in us, we agreed to transfer certain technologies to Nexperia, and have provided Nexperia with licenses to manufacture and sell products using such technologies (in each case, excluding our epi process technology) as follows:

- Exclusive license (i.e., exclusive of us) for the automotive field in all regions except Japan, with the exception that we may develop, manufacture or directly sell any products in the automotive field to certain specified customers anywhere in the world (including Japan).
- "Sole" license for all other areas of application (i.e., we may not grant similar licenses to any other parties but we are not restricted from using or exploiting our technology in such other areas of application).
- The above licenses become nonexclusive on the earliest to occur of (i) April 4, 2023 and (ii) one year after a change of control of us.
- These licenses are ultimately contingent upon Nexperia fulfilling the appropriate licensing payment requirement, which in turn are contingent upon the execution of certain milestones by us.

Competition

Overview: Our solutions compete with other power semiconductor solutions for power conversion including other GaN products, SiC products and silicon super-junction and IGBT products. Both GaN and SiC belong to the wide-bandgap semiconductor materials category, which offer high power switching performance due to their inherent capability to switch with lower losses at high voltages. Our GaN products are targeted at the 600 Volt to 650 Volt and the 900 Volt markets today, addressing power levels from 30 watts to over 5 kilowatts.

Competition in our markets is based on a variety of factors, including cost, size, power consumption, performance, reliability, product line depth and breadth, and ability to supply in sufficient quantities. We believe we can, or will be able to, compete effectively based on these factors.

Our GaN solutions compete with silicon-based products from companies such as Infineon, ST Microelectronics, Toshiba, ON Semiconductor, Mitsubishi and others, as well as with SiC based offerings from Rohm, United Silicon Carbide, Cree, Infineon and others. SiC devices benefit from the fact that they are vertical devices while today's high performance GaN devices are lateral devices. Vertical devices tend to offer smaller total chip area for similarly rated devices. However, GaN devices can make up for this size difference, at least in part, by being manufactured on a very low cost silicon substrate. We also compete with other high-voltage GaN product providers including Infineon, Power Integrations, Panasonic, GaN Systems, Navitas, Texas Instruments and others.

Many of our existing competitors have, and some of our potential competitors could have, substantial competitive advantages such as greater name recognition, longer operating histories, broader and deeper product portfolios, larger customer bases, substantially greater financial and other resources, and larger scale manufacturing operations. However, we believe our products have the potential to compete, and do compete, with many of our competitors' offerings through product quality, product reliability and satisfaction of customer qualifications and standards.

Some companies as well as academic institutions are engaged in research and development of vertical GaN devices fabricated on bulk GaN substrates. While these could be promising in the future, much remains to be proven as to the ultimate quality and cost of these GaN substrates as well as the actual performance benefit of a vertical GaN device on a GaN substrate vs. high performance GaN HEMT-based products made on silicon substrates.

Competition With Silicon: We aim to capture applications that are traditionally addressed by silicon but for which silicon no longer offers sufficient performance. However, although the overall system cost may be lower with GaN due to compact size and reduction of other components in the system, the cost of certain GaN devices is higher than the cost of the comparable silicon devices at present (approximately twice the cost as such silicon devices). Therefore, in applications where silicon performance is acceptable, it may be difficult to compete with GaN products until the cost of the GaN devices is reasonably close (we estimate within a 20-30% range) to comparable silicon devices at a per device level. Typically, GaN devices face competition from silicon superjunction devices or silicon IGBT devices in such scenarios.

Competition With Silicon Carbide: Although SiC products have been around for a much longer time than GaN devices, we believe that GaN has better figures of merit with respect to certain power switching applications and the potential to deliver lower losses for such power switching applications. GaN is also made on standard silicon wafer substrates, lending it the cost structure of silicon-based wafer fabrication versus the more expensive SiC substrates on which SiC devices are manufactured. However, although the performance of SiC devices today at 600 Volts to 650 Volts is distinctly lower than GaN, SiC devices are more competitive at higher voltages such as 1,200 Volt nodes, where SiC is currently growing in use. This is due, at least in part, to SiC devices such as MOSFETs typically having a low mobility of electron charge under the gate region (such as approximately 50 cm2/Volt-second), versus GaN HEMTs which have much higher electron mobility in the gate region as well as the total conducting (or drift) region. For example, our GaN HEMTs have typical channel mobility of approximately 2,000 cm2/Volt-second. The lower gate mobility of the SiC MOSFET results in higher resistance (and thus higher loss) under the gate region. At lower voltages, the overall conduction (or drift) region is smaller and the gate region represents a higher portion of the total device. At higher voltages, such as 1,200 Volts, the gate region represents a smaller portion of the overall device and thus is not too detrimental for overall device loss. Thus, as the voltage requirement of a device is lowered, SiC devices generally tend to fall in relative performance versus GaN devices.

Competition With Other GaN Offerings: Finally, our GaN devices compete with offerings from other GaN manufacturers. While the presence of multiple GaN manufacturers is required for the overall acceptance of GaN technology, we strive to differentiate ourselves through quality, reliability, and easy to use GaN devices in thermally robust packages, while still offering a high level of performance (low loss and high efficiency) at reasonable price points.

Our Growth Strategy

Our growth strategies include (i) addressing growth in the power conversion markets through innovative GaN products with high quality and reliability that are easy to use, (ii) establishing an aggressive product and technology roadmap to improve product performance and decrease our costs, (iii) maintaining strong customer partnerships in what we believe are important product areas, and (iv) maintaining strong connections with suppliers, manufacturing partners and distribution partners.

In the near term, we aim to incorporate our products into power supplies by supporting product opportunities ranging from sub-100 watt compact smartphone fast-charging adapters to 3 kilowatt power supplies for datacenter servers with our GaN products. We continue to develop reference designs for various adapter solutions such as 65 watt USB Type-C fast chargers to provide customers a complete solution with our easy-to-use, high reliability GaN products. Adapters for fast chargers, which are becoming more prevalent with the increased power consumption of 5G mobile phones, represents a strong opportunity to market our GaN solutions. We aim to continue our partnerships with customers who have already introduced high-efficiency, compact, GaN-based power supplies in the market recently and to expand with more customers in this area.

In addition, we aim to address industrial markets such as industrial power supplies, servo motor drives for robotics, uninterruptible power supplies, and inverters and chargers for off-grid and backup power solutions, among other products. Our products come in standard packages that are thermally robust and capable of efficiently delivering 1 kilowatt to 5 kilowatts of power in a single package, which we believe are well suited for these types of products. We also develop reference designs for the applicable subsystems of power converters and inverters to ease product integration and help our customers derive additional benefit with GaN solutions. We have developed significant partnerships in this area, such as with Yaskawa in the area of servo motor drives.

The number of electric vehicles worldwide is expected to continue to grow from just over 3 million to over 30 million over the next decade. We believe that power conversion opportunities on board the automobile, such as on board battery charger and DC-DC converters for powering auxiliary systems, as well as the powertrain inverters, represent a strong market opportunity for GaN solutions. GaN-based devices can provide improvements in efficiency over traditional silicon devices, enabling compact systems for efficient charging and ultimately enabling higher driving range. In the mid term, our focus will be having customers design around our products in the areas of DC-DC converters (e.g., 3 kilowatt power) and onboard chargers (e.g., 6.6 kilowatt to 11 kilowatt power); we currently have products available to address these product areas. In the long term, we aim to address powertrain inverters with higher power ratings (e.g., 50 kilowatts to over 200 kilowatts) using innovative solutions such as combining multiple GaN devices and developing devices rated for higher power output. For example, to our knowledge, we are the only company to date to qualify and release a 900 Volt-rated GaN power device. We also have 1200 Volt rated devices in early development.

We intend to continue to innovate in the GaN technology space to maintain our reputation in product quality, reliability and performance and to continue to improve the costs of our GaN products over time. Our new generations of products, such as our Gen-4 and Gen-5 products, target smaller GaN die sizes while improving the figures of merit for power switching. We plan to offer these products in both robust, industry-standard packages as well as compact, surface-mount packages based on the power level and customer requirements. Through this roadmap, we plan to additionally develop devices with greater power and current ratings, including our Gen-5 devices, which we expect to release in 2021.

As a result of our contract with the U.S. Navy, we are also positioning ourselves to be a supplier for high quality GaN epiwafers on various substrates such as silicon, silicon carbide and sapphire, in wafer diameters ranging from 4-inch and 6-inch now to 8-inch in the next few years. We aim to become a strong U.S.-based epiwafer supplier for GaN RF electronics for both the U.S. Department of Defense and commercial RF applications such as GaN RF transistors for wireless infrastructure and 5G. For these areas, we also have the advantage of being a pure-play epiwafer foundry as we do not make RF device products. We will also target providing GaN epiwafers for power semiconductor applications to select strategic partners and for select development opportunities.

Government Regulation and Product Approval

Our primary set of products that include GaN power semiconductor FETs fall into the ECCN EAR-99 category of the export regulations from the U.S. Department of Commerce and as such are not currently subject to restrictions. We are required to conform to other guidelines and restrictions of the Department of Commerce and other government regulations that may be in place from time to time concerning shipping products to specific companies or countries. Our GaN epiwafers are classified under the ECCN 3C001 (GaN on silicon) and ECCN 3C006 (GaN on silicon carbide) category of export regulations, while our GaN on silicon epiwafer production and development technology falls under ECCN 3E001 of the regulations, and may require a license for export, re-export or transfer to a number of countries pursuant to EAR. We have systems in place to ensure our compliance with these guidelines and procedures and U.S. laws and regulations. Any exports of our technology for development or production of our epiwafers (under ECCN 3E001) to our own subsidiary in Japan and our joint venture with Fujitsu Semiconductor in Japan is under the license exception TSR (technology and software under restriction).

To the extent our products are or become subject to U.S. export controls and regulations, these regulations may limit the export of our products and technology, and provision of our services outside of the United States, or may require export authorizations, including by license, a license exception, or other appropriate government authorizations and conditions, including annual or semi-annual reporting. Export control and economic sanctions laws may also include prohibitions on the sale or supply of certain of our products to embargoed or sanctioned countries, regions, governments, persons, and entities. In addition, various countries regulate the importation of certain products, through import permitting and licensing requirements, and have enacted laws that could limit our ability to distribute our products. The exportation, re-exportation, and importation of our products and technology and the provision of services, including by our partners, must comply with these laws or else we may be adversely affected, through reputational harm, government investigations, penalties, and a denial or curtailment of our ability to export our products and technology. Complying with export control and sanctions laws may be time-consuming and may result in the delay or loss of sales opportunities. Although we take precautions to prevent our products and technology from being provided in violation of such laws, our products and technology may have previously been, and could in the future be, provided inadvertently in violation of such laws, despite the precautions we take. If we are found to be in violation of U.S. sanctions or export control laws, it could result in substantial fines and penalties for us and for the individuals working for us. Export or import laws or sanctions policies are subject to rapid change and have been the subject of recent U.S. and non-U.S. government actions. Changes in export or import laws or sanctions policies, may adversely impact our operations, delay the introduction and sale of our products in international markets, or, in some cases, prevent the export or import of our products and technology to certain countries, regions, governments, persons, or entities altogether, which could adversely affect our business, financial condition and results of operations.

Our subsidiary in Japan, Transphorm Japan, also adheres to export control regulations under Japanese law, which generally mirror U.S. export control laws. Transphorm Japan has obtained licenses for the export of epiwafer materials to the extent required.

We are also generally subject to other industry and environmental regulations for electronic and semiconductor products such as the Restriction of Hazardous Substances Directive 2002/95/EC.

Manufacturing and Supply

Supply Chain and Epi Materials: We believe we have strong manufacturing and supply chain operations in comparison to our competitors, from GaN epiwafers to wafer fabrication to packaging and testing. We control our core MOCVD GaN epiwafer manufacturing and development, with multiple MOCVD reactors at both our Goleta, California headquarters and our joint venture wafer fab in Aizu Wakamatsu, Japan. Each location has multiple 6-inch production scale reactors, including some with 8-inch capability that we may require in the future. We believe these reactors, with the ability to grow high quality, high uniformity GaN epi materials on silicon, silicon carbide and sapphire substrates, provide sufficient capacity for epitaxial wafers both for our GaN power device business as well as our epiwafer sales vertical.

Wafer Fabrication and Joint Venture with Fujitsu: Our wafer manufacturing as well as most of our engineering development is accomplished in our joint venture wafer fab in Aizu Wakamatsu, Japan. AFSW has a fully depreciated 6-inch production fabrication facility, originally running silicon CMOS and bipolar processes and, since 2012, also running GaN processes while continuing some silicon-based wafer foundry activity. On November 28, 2013, we entered into a process technology and development and services agreement with FSL to integrate our GaN power device manufacturing processes with FSL's manufacturing processes to enable our GaN wafer manufacturing at what is now the AFSW fabrication facility. Since that time, we have gained full access to the facility for development and manufacturing of various generations of our GaN products. For example, we worked with FSL to qualify a complete manufacturing process for GaN wafers in the AFSW fabrication facility, which resulted in our products being commercially released in 2015 under our Gen-2 platform. Subsequently all our production supply of fabrication wafers was sourced from the AFSW fabrication facility.

In 2017, we entered into a joint venture agreement with FSL to gain further control of our GaN manufacturing, share ownership and operating costs of the AFSW entity, and refine certain other aspects of our commercial relationship. Currently, we hold a 49% interest, and FSL holds a 51% interest, in this joint venture. On April 1, 2020, FSL exercised its put option under the joint venture agreement and notified us that FSL intended to exit the joint venture by selling its 51% interest in AFSW to us. Under the terms of the joint venture agreement, the aggregate purchase price for FSL's interest in AFSW is expected to be one Japanese Yen. While the agreement provides that completion of the transaction was to take place as soon as 60 days from the date of the exercise notice, such transaction is subject to regulatory and other approvals in Japan, which we believe will take up to the second quarter of 2021 to obtain, assuming such approval is received at all. In December 2020, we created a joint venture company in Singapore with a third party (controlling party with 75% ownership) to become a partner in AFSW, subject to regulatory and other approvals in Japan that we believe will take up to the second quarter of 2021 to obtain, assuming such approval is received at all. For at least one year following the date on which we (alone or with a third party) take over full ownership of AFSW, we have agreed to use our best efforts to maintain and continue the operations of AFSW, which we believe is synergistic with our own business for securing wafers for our products. If we were to become the sole owner of AFSW and it continues to operate at a loss at such time (which we currently expect to be the case), our cash flows would be significantly negatively impacted. Based on our current and future cash flow requirements and business needs at that time, we expect that, assuming regulatory approvals are received, if we were to become the sole owner of AFSW, we would have to consider other options including but not limited to raising more capital, selling some or all of AFSW to a third party, or moving our GaN production elsewhere and ceasing operations at AFSW. See “Risk Factors—Our ability to continue as a going concern will depend on us being able to raise additional capital” for a description of risks associated with operating AFSW and the impact to us of FSL exercising its put option.

The AFSW facility, which has a capacity of 14,000 CMOS process equivalent wafers per month, is capable of producing sufficient GaN wafers for our needs in 2020 and 2021. We believe the AFSW facility can be scaled on demand in the mid-term, and is scalable to address our demand in the long-term over 5 years with increased investment in various standard semiconductor wafer fab equipment, typically acquired from used markets.

Backside Wafer Processing, Packaging and Testing: We contract with two third-party vendors to perform standard functions of back-side grinding and metallization in external facilities in Asia to complete the full wafer process. After these processes, the finished GaN wafers are transported to one of our packaging sub-contracting partners depending on the type of final package, where they are diced and finished into the final product. We have multiple sites for our TO220, TO247, PQFN packages and at present one site for our D2Pak package. The final test portion of the supply chain is also in Asia, in many cases residing within our packaging sub-contractors.

Production Control: Our production planning and control process is centralized from our headquarters and integrated with our enterprise resource planning tools including NetSuite and manufacturing execution systems including WIPtrac. The entire process from forecasting and planning to order entry, then to build execution and inventory management, and finally to shipping, resides in the production control function.

Sales

Our revenue consists of (1) licensing revenue, (2) government revenue from our contract with the U.S. Navy and (3) revenue from product sales. Products are sold to distributors and end-users in various sectors such as, but not limited to, the automotive, gaming, industrial, IT, consumer and RF (for our epiwafer products) industries.

GaN Products - Sales Process and Distributors: Our sales activity is primarily carried out in four broad based geographical regions (with significant focus in Asia) including key focus areas of (i) Mainland China, Hong Kong and Taiwan, (ii) the United States, (iii) Japan and, to a lesser extent, (iv) South Korea and Europe. We have offices in Hong Kong, China, Taiwan, Japan and the United States that include both sales and application engineering/customer support personnel. The field sales and applications effort is also supported by our senior factory applications engineering team from our California headquarters.

We partner with several regional distributors and sales representatives. In Asia, Avnet, Fujitsu Electronics (now part of Kaga Electronics) and Common Power are our current distributors. In Japan, IIDA Electronics and Asahi Tech are our current distributors. In the North America, Fujitsu Electronics is our current distributor, and in Europe, we have partnered with Hyline. Additionally, our products are available worldwide through Digikey and Mouser. We employ regional representatives, primarily in the United States, on an as-needed basis. We also work with select design and development partners who make reference designs and system level solutions with our GaN products and are a part of our extended applications-oriented effort.

In December 2020, we entered into an agreement to form a joint venture in Singapore that will focus on addressing the rapidly growing fast-charger market in the Greater China region. This joint venture, in which we hold less than a 50% share, will also have certain exclusive distribution rights for new design wins in Greater China.

Markets and Design Cycles: For the years ended December 31, 2020 and 2019, our product and service revenue of approximately $3.1 million and $1.4 million, respectively, was comprised of sales into gaming power supplies, data center power supplies and infrastructure, power adapters, miscellaneous industrial applications and sampling revenue to automotive customers, including through our distributor Nexperia, and epiwafer sales. While we are targeting an increase in GaN product revenue in 2021, we expect 2021 revenue to continue to be comprised primarily of licensing and government contract revenue.

Design cycles for our products can be long and range from 9 to 18 months for the adapter/consumer market to 18 to 30 months for the datacenter and communication infrastructure market as well as industrial markets, to 3 to 5 years for the automotive market. Our sales funnel also classifies various opportunities in stages in the lifecycle at our customers including the stages of investigation, evaluation, dedicated board design, design-in, prototype and pilot production, before commencing full production.

Epiwafer Sales: Epiwafer sales are to U.S. Department of Defense customers for GaN on 4-inch and 6-inch wafers, for RF GaN on silicon carbide and sapphire substrates. Sales for GaN on silicon epiwafers for power devices to Nexperia under our long-term cooperation agreement are also included in this vertical. The epiwafer sales are carried out directly by us from our GaN MOCVD epiwafer department.

Marketing

Our target application markets for our GaN power products are power adapters and computing, datacenters and infrastructure, industrial and automotive. Our worldwide marketing efforts are coordinated out of our headquarters in Goleta, California and our office in San Jose, California. Key elements of our marketing efforts include:

- Participation and promotion in major power electronic tradeshows, conferences and events such as the Applied Power Electronics Conference in North America, PCIM Europe and PCIM Asia;

- Our website, which contains our product information, application notes and resources, evaluation boards, publications, events and various technical papers/white papers on wide-ranging topics such as quality and reliability, conferences, and presentations or papers;

- Electronic and print trade media and outlet advertising;

- Advertising on Digikey and Mouser, with analytical monitoring and search analytics; and

- Regular press releases and announcements.

Nexperia Cooperation Agreement

In 2018, we entered into a five-year cooperation agreement with Nexperia, a stand-alone power semiconductor business spun out from NXP Semiconductors N.V., to secure funding for us and create a second source of supply for our GaN products or equivalent products, which certain customers may require to be available in the market for broader adoption of our products, and to enable a stronger long term outreach for the automotive market than possible with our own resources. Nexperia has begun promotion of their GaN products in the market, which is positive for the overall adoption of GaN solutions as well as for our business in particular, as Nexperia currently purchases epiwafers from us and has contracted to purchase epi material from us in the future when they produce their own epiwafers, as further described below. In connection with purchasing approximately $16.0 million of our Series 3 convertible preferred stock in April 2018, Nexperia entered into a set of cooperation agreements with us including a development and license agreement, loan and security agreement and supply agreement. Key components include:

1. Development and License Agreement ("DLA"): On April 4, 2018, we entered into the DLA with Nexperia, pursuant to which we agreed to develop and transfer to Nexperia certain manufacturing process technologies to enable Nexperia to manufacture GaN-based products at Nexperia's facilities. These technologies to be transferred included our Gen-3, Gen-4 (Tranche A), Gen-5 (Tranche B) and 1,200 Volt (Tranche B-1) process technologies but do not include our Epi Process Technology (as defined in the DLA). Nexperia also agreed to provide funding for the development of such technologies in return for limited exclusivities in automotive and other fields. Nexperia's exclusive rights expressly exclude development and sale of products in the automotive field in Japan. On March 21, 2019, the parties entered into an amendment to add our 1,200 Volt manufacturing technology to the agreement. Key components of the DLA include:

   - Foundry Transfer: The DLA requires transfer of our existing Gen-3 wafer fabrication process (currently running in our AFSW foundry) to Nexperia's wafer fabrication facility in Hamburg, Germany. Such transfer is targeted to be completed in the first half of 2021, but now largely depends on Nexperia's ability to complete such transfer. We received $9.0 million of funds from Nexperia in relation to the transfer activity, associated intellectual property and projects completed to date. This transfer also creates a second source for GaN wafer fabrication, which we expect will facilitate broader adoption of GaN technology, as certain customers require multiple sources for risk mitigation. No technology transfer or license related to the GaN epiwafer technology is contemplated.

   - Technology Projects for "Pre-funded" Technology Loans and Licensing: Additionally, technology projects pertaining to our Gen-4, Gen-5 and 900 Volt products and related activities were pre-funded by loans from Nexperia after we demonstrated that we had reached certain milestones (which have been completed). Such loans would be deemed paid off when the target milestones as identified in the Statement of Work (SoW) of the DLA are complete. In the event we are not able to meet the milestones, such loans would start accruing interest at 6% annum from such determination date. At such time when the milestones are completed and the loan is deemed paid off, Nexperia would secure a license to the technology developed pursuant to the DLA.

2. Loan and Security Agreement ("LSA"): The LSA, entered into on April 4, 2018, comprises term loans in an aggregate principal amount of $15.0 million, separated into tranches for pre-funded projects and subject to the satisfaction of specified conditions, and a $10.0 million revolving loan, each of which bears 6% annual interest.

   - The term loans under the LSA include a $5.0 million Tranche A loan intended to pre-fund our Gen-4 technology development and a $10.0 million development loan intended to pre-fund our Super Junction technology development. On March 31, 2019, we executed Amendment No. 1 to the LSA, pursuant to which the $10.0 million development loan was bifurcated into two separate sub-tranches comprising an $8.0 million Tranche B Loan intended to pre-fund our Gen-5 technology development and a $2.0 million Tranche B-1 Loan intended to pre-fund our 1,200 Volt technology development. The Tranche A Loan was scheduled to mature on the earlier of the date a specified report is required to be delivered under the DLA or March 31, 2020, which was subsequently extended to June 30, 2020. In June 2020, the Tranche A Loan was satisfied in full upon our transfer of our Gen-4 technology development to Nexperia, at which point we recognized $5.0 million as licensing revenue. The Tranche B Loan and Tranche B-1 Loan mature on the earlier of the date a specified report is required to be delivered under the DLA or March 31, 2021, subject to extension as provided in the LSA.

   - The $10.0 million revolving loan under the LSA, all of which was outstanding as of December 31, 2020, is secured against our U.S. non-MOCVD patents and matures at the earlier of (i) April 4, 2021 and (ii) the date a Change of Control (as defined in the LSA) occurs. Interest on the outstanding principal amount of the loans accrues at a rate of 6% per annum.

3. Supply Agreement: Simultaneously with the DLA and LSA, we entered into the Supply Agreement with Nexperia, which sets forth the terms under which Nexperia may purchase epiwafers, processed wafers and packaged products from us, and we may purchase processed wafers and packaged products from Nexperia. Nexperia agreed to purchase all its requirements of epiwafers and products based on epiwafers from us until June 30, 2020, subject to certain exceptions relating to our inability to meet Nexperia's requirements.

Employees and Human Capital

As of December 31, 2020, we had a total of 91 employees, of which approximately 66 are U.S.-based. We value and support hiring exceptional talent to develop our core technology and drive our business growth. None of our U.S. employees is represented by a labor union or covered by a collective bargaining agreement with respect to their employment with us. We have not experienced any work stoppages and we consider our relations with our employees to be good.

Our human capital resources objectives include, as applicable, identifying, recruiting, retaining, incentivizing and integrating our existing and new employees, advisors and consultants. The principal purposes of our equity incentive plans are to attract, retain and reward personnel through the granting of stock-based compensation awards, in order to increase stockholder value and the success of our company by motivating such individuals to perform to the best of their abilities and achieve our objectives.

Corporate Information

We were originally incorporated as Peninsula Acquisition Corporation in the State of Delaware in May 2017. Prior to our acquisition of Transphorm Technology, Inc. in February 2020, we were a "shell company" registered under the Exchange Act, with no specific business plan or purpose. In accordance with "reverse merger" accounting treatment, our historical financial statements as of period ends, and for periods ended, prior to our acquisition of Transphorm Technology were replaced with the historical financial statements of Transphorm Technology in our SEC filings made after the acquisition.

Our principal executive offices are located at 75 Castilian Dr., Goleta, California 93117. Our telephone number is (805) 456-1300.

Available Information

We are subject to the informational requirements of the Exchange Act, and, accordingly, file Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act, with the Securities and Exchange Commission (the "SEC"). In addition, the SEC maintains a website (http://www.sec.gov) that contains material regarding issuers that file electronically, such as ourselves, with the SEC.

We maintain a website at www.transphormusa.com, to which we regularly post copies of our press releases as well as additional information about us. Our filings with the SEC will be available free of charge through the website as soon as reasonably practicable after being electronically filed with or furnished to the SEC. Information contained in our website is not a part of, nor incorporated by reference into, this Report or our other filings with the SEC, and should not be relied upon.

Item 1A. Risk Factors

An investment in our securities is highly speculative and involves a high degree of risk. We face a variety of risks that may affect our operations or financial results and many of those risks are driven by factors that we cannot *control or predict. Investors should carefully consider the risks described below and all of the other information set forth in this Report, before deciding to invest in our common stock. If any of the risks described below occur, our business, financial condition, results of operations and prospects could be materially adversely affected. In that case, the market price of our common stock would likely decline and investors could lose all or a part of their investment. Only those investors who can bear the risk of loss of their entire investment should consider an investment in our securities. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also impair our operations.*

Risks Related to Our Business and the Industry in Which We Operate

We have a history of losses, anticipate increasing our operating expenses in the future, and may not be able to achieve or maintain profitability. If we cannot achieve or maintain profitability, stockholders could lose all or part of their investment.

Since our inception in 2007, we have generated minimal revenue and substantial net losses as we have devoted our resources to the development of our technology, and our business model has not been proven. As of December 31, 2020, we had an accumulated deficit of $161.8 million. For the years ended December 31, 2020 and 2019, our net loss was $17.9 million and $15.3 million, respectively. We expect our operating expenses to increase in the future as we expand our sales and marketing efforts and continue to invest in our infrastructure and research and development of our technologies, and if we are unable to secure a partner or additional business for our joint venture with FSL. These efforts may be more costly than we expect, and we may not be able to increase our revenue to offset our increased operating expenses or obtain additional contracts from the federal government. Our revenue growth may be slower than anticipated or our revenue may decline for a number of other reasons, including slower growth of, or reduced demand for, GaN power management solutions, increased competition, or any failure to capitalize on growth opportunities. If we are unable to generate sufficient revenue, we may never become profitable or be able to maintain any future profitability. If this were to occur, our stockholders could lose all or part of their investment.

Our ability to continue as a going concern will depend on us being able to raise significant additional capital to fund our operations, which may be unavailable on attractive terms, if at all, and could dilute your investment.

Our recurring operating losses and our current operating plans raise substantial doubt about our ability to continue as a going concern for the next twelve months. Our independent registered public accounting firm issued their audit report on the years ended December 31, 2020 and 2019, which included an explanatory paragraph as to our ability to continue as a going concern. While we believe that our existing cash and cash equivalents will be sufficient to fund our current operating plans into the fourth quarter of 2021, we have based these estimates on assumptions that may prove to be wrong, and we could spend our available financial resources much faster than we currently expect and need to raise additional funds sooner than we anticipate.

For example, we are party to a joint venture agreement with FSL for the ownership and operations of AFSW, a wafer fabrication facility located in Aizu Wakamatsu, Japan. We currently hold a 49% interest in AFSW. For as long as we have had an ownership interest in AFSW, it has operated at a loss. The operating losses incurred by AFSW over the 12-month periods ended December 31, 2020 and 2019 were approximately $14.0 million and $7.6 million, respectively. On April 1, 2020, FSL exercised its put option under the joint venture agreement and notified us that FSL intended to exit the joint venture by selling its 51% interest in AFSW to us. Under the terms of the joint venture agreement, the aggregate purchase price for FSL’s interest in AFSW is expected to be one Japanese Yen. While the joint venture agreement with FSL provides that completion of the transaction was to take place as soon as 60 days from the date of the exercise notice, such transaction is subject to regulatory and other approvals in Japan that we believe will take up to the second quarter of 2021 to obtain, assuming such approval is received at all. In December 2020, we created a joint venture company in Singapore with a third party (controlling party with 75% ownership) to become a partner in AFSW, subject to regulatory and other approvals in Japan that we believe will take up to the second quarter of 2021 to obtain, assuming such approval is received at all. If we were to become the sole owner of AFSW and it continues to operate at a loss at such time (which we currently expect to be the case), our cash flows would be significantly negatively impacted. In addition, for at least one year following the date on which we (alone or with a third party) take over full ownership of AFSW, we have agreed to use our best efforts to maintain and continue the operations of AFSW, which would continue to negatively affect our cash flow. Based on our current and future cash flow requirements and business needs at that time, we expect that, assuming regulatory approvals are received, if we were to become the sole owner of AFSW, we would have to consider other options including but not limited to raising more capital, selling some or all of AFSW to a third party, or moving our GaN production elsewhere and ceasing operations at AFSW. The ongoing COVID-19 pandemic may negatively impact or slow down any efforts by us to secure a partner or additional business for AFSW.

Similarly, we issued a promissory note to Yaskawa Electric Corporation ("Yaskawa") in the aggregate principal amount of $15.0 million that is convertible, in whole or in part at Yaskawa's option, into shares of our common stock (subject to a maximum of 3,076,171 shares) at a conversion price of $5.12 per share. If Yaskawa does not elect to convert the note into shares of our common stock, we will be required to pay the outstanding principal and interest on the note by the earlier of September 30, 2022 or the occurrence of an event of default or a change of control of us, which will also negatively impact our cash flows and may affect our ability to continue as a going concern if we do not raise significant additional capital before that time.

We are also party to a loan and security agreement (the "LSA") with Nexperia B.V. ("Nexperia"), pursuant to which we have outstanding term loans in an aggregate principal amount of $10.0 million, separated into tranches for pre-funded projects, and a $10.0 million revolving loan which bears 6% annual interest. The term loans mature on March 31, 2021 and the revolving loan matures on April 4, 2021. If we are not able to complete the milestones under the term loans, or extend the maturity dates of or otherwise amend the terms of the term or revolving loans, our cash resources and our ability to continue as a going concern will be significantly affected.

Our ability to continue as a going concern will depend on us being able to raise significant additional capital to fund our operations and achieve our business objectives, as we do not expect to generate material revenue in the short-term. The future impact of the COVID-19 pandemic cannot be predicted with certainty and may make it more difficult or preclude us from raising additional capital, increase our costs of capital and otherwise adversely affect our business, results of operations, financial condition and liquidity. We will be required to engage in equity or debt financings to secure additional funds. If we close one or more additional equity or convertible debt financings, our stockholders may experience significant dilution of their ownership interests, the rights given to new equityholders may be superior to those of our common stockholders and the per share value of our common stock could decline. Furthermore, if we engage in debt financing, the holders of debt would have priority over the holders of our common stock, and we may be required to accept terms that restrict our ability to run our business or incur additional indebtedness. The debt financing could also contain restrictive covenants that may impact how we run our business and could result in the loan being paid back in full immediately if we are in non-compliance. In addition, if we are unable to raise additional capital when needed or on acceptable terms, we may not be able to, among other things:

- continue our business and operations;
- develop or enhance our products;
- continue to expand our sales and marketing and research and development organizations;
- acquire complementary technologies, products or businesses;
- expand operations, in the United States or internationally;
- hire, train and retain employees; or
- respond to competitive pressures or unanticipated working capital requirements.

Our failure to do any of these things could harm our business, financial condition and results of operations or affect our ability to continue as a going concern.

Our quarterly results of operations are likely to vary from period to period, which could cause the market price of our common stock to fluctuate or decline.

Our results of operations have varied from period to period, and we expect that our quarterly results of operations will continue to vary as a result of a number of factors, many of which are outside of our control and may be difficult to predict, including:

- our ability to attract new and retain existing customers, including due to our perceived or actual financial condition;
- the budgeting cycles and purchasing practices of customers;
- the timing and length of our sales cycles, including the ability of our customers to design-in successfully with GaN power solutions;
- changes in customer requirements or market needs, including market acceptance of GaN technology;
- the timing and impact of new product introductions by us or our competitors or any other change in the competitive landscape of the semiconductor industry, including consolidation among our customers or competitors;
- deferral of orders from customers in anticipation of new products or product enhancements announced by us or our competitors;
- our ability to execute on our growth strategy and operating plans;
- our ability to successfully expand our business domestically and internationally;
- our ability to successfully compete with other companies in our market;
- changes in our pricing policies or those of our competitors;
- any disruption in, or termination of, our relationship with channel partners;
- insolvency or credit difficulties confronting our customers, affecting their ability to purchase or pay for our products, or confronting our key suppliers, which could disrupt our supply chain;
- the cost and potential outcomes of potential future litigation;
- general economic conditions, both domestic and in our foreign markets; and
- the amount and timing of operating costs and capital expenditures related to the expansion of our business.

Any of the above factors, individually or in the aggregate, may result in significant fluctuations in our quarterly operating results. As a result of this variability, our historical results of operations should not be relied upon as an indication of future performance. Moreover, this variability and unpredictability could result in our failure to follow through on our operating plans or meet the expectations of investors for any period. If we fail to follow through on our operating plans or meet such expectations for these or other reasons, the market price of our common stock could fall substantially.

Our business could be adversely affected by the effects of health epidemics or pandemic, including the ongoing COVID-19 global pandemic, in regions where we or third parties on which we rely have manufacturing or other business operations.

The effects of health epidemics or pandemic could materially affect our operations globally, including at our headquarters in California and at our subsidiaries in Japan. For example, the COVID-19 pandemic has resulted in government authorities implementing numerous measures to try to contain the virus, such as travel bans and restrictions, quarantines, shelter-in-place or stay-at-home orders, and business shutdowns. The COVID-19 pandemic continues to impact our business and has adversely disrupted and will further disrupt the operations at certain of our customers, partners, suppliers and other third-party providers for an uncertain period of time, including as a result of travel restrictions, adverse effects on budget planning processes, business deterioration, and/or business shutdowns, all of which has impacted our business and results of operations. Some of our customers have experienced delays in their internal development programs and design cycles with our GaN products due to the effects of the COVID-19 pandemic, which have led to postponements of their orders of our products and postponements of determinations that our products will be used in their designs for new products under development with corresponding delays in their market introduction and our achievement of revenues. Our billings under our contract with the U.S. Navy may be lower than originally expected as a result of the pandemic. The pandemic has also led to expected delays for certain milestones in our development projects that are due in 2021.

We have taken precautionary measures intended to minimize the risk of the virus to our employees, our customers, and the communities in which we operate. We are requiring all of our employees to work remotely unless they cannot perform their essential functions remotely, and have also suspended all non-essential travel for our employees. While many of our employees are accustomed to working remotely or working with other remote employees, much of our workforce has not historically been remote. Our employees and consultants typically travel frequently to establish and maintain relationships with one another, our customers and prospective customers, partners, and investors. Although we continue to monitor the situation and may adjust our current policies as more information and public health guidance becomes available, temporarily suspending travel and restricting the ability to do business in person has impacted our customer success efforts, sales and marketing efforts, and may challenge our ability to enter into customer contracts or maintain or enter into new partnerships in a timely manner, slow down our recruiting efforts, or create operational or other challenges, any of which could harm our business, financial condition and results of operations. Furthermore, if a natural disaster, power outage, connectivity issue, or other event occurred that impacted our employees' ability to work remotely, it may be difficult or, in certain cases, not possible, for us to continue our business for a substantial period of time.

There are no comparable recent events which may provide guidance as to the effect of the spread of COVID-19, and, as a result, the ultimate impact of the COVID-19 pandemic or a similar health epidemic is highly uncertain and subject to change. Some of our suppliers of certain materials used in the production of our products are located in areas impacted by the COVID-19 pandemic, which could limit our ability to obtain sufficient materials for our products. Furthermore, the pandemic may negatively impact any efforts by us to secure a partner or additional business for AFSW. The pandemic has and will continue to adversely affect global economies and financial markets, resulting in an economic downturn that could affect demand for our products and impact our operating results. Even after the COVID-19 pandemic has subsided, we may continue to experience an adverse impact to our business as a result of the continued global economic impact of the pandemic. Any of the foregoing could significantly harm our business, and we cannot anticipate all of the ways in which health epidemics such as COVID-19 could adversely impact our business.

We may not be able to develop new technologies and products to satisfy changes in customer demand or industry standards, and our competitors could develop products that decrease the demand for our products.

Rapidly changing technologies and industry standards, along with frequent new product introductions, characterize the industries of many of our customers and potential customers. Our financial performance depends, in part, on our ability to design, develop, manufacture, assemble, test, market and support new products and enhancements on a timely and cost-effective basis.

Our products have not been proven commercially on the scale of conventional power semiconductor products. The principal focus of our research and development activities has been to improve processes and support our ongoing development of GaN power management solutions. These projects are subject to various risks and uncertainties we are not able to control, including changes in customer demand or industry standards and the introduction of new or superior technologies by others. Moreover, any failure by us in the future to develop new technologies or timely react to changes in existing technologies could materially delay our development of new products, which could result in product obsolescence, decreased revenues and a loss of our market share to our competitors. In addition, products or technologies developed by others may render our products or technologies obsolete or non-competitive. Further, if our products are not in compliance with prevailing industry standards, such non-compliance could materially and adversely affect our financial condition, cash flows and results of operations.

We must commit resources to development, design and production prior to receipt of purchase commitments and could lose some or all of the associated investment.

Our sales are typically made pursuant to individual purchase orders, rather than pursuant to long-term supply contracts. Many of these purchase orders may be revised or canceled without penalty. As a result, we typically must commit resources to the design, development, and production of products without any advance purchase commitments from customers. Any inability to sell a product after we devote resources to it could materially and adversely affect our financial condition, cash flows and results of operations.

We compete in highly competitive markets, and competitive pressures from existing and new companies may adversely impact our business and operating results.

The markets in which we compete are highly competitive. We expect competition to intensify in the future as existing competitors and new market entrants introduce new products into our markets. This competition could result in increased pricing pressure, reduced profit margins, increased sales and marketing expenses, and the loss of market share, any of which could seriously harm our business, financial condition and results of operations. If we do not keep pace with product and technology advances and otherwise keep our product offerings competitive, there could be a material and adverse effect on our competitive position, revenue and prospects for growth. Many of our existing competitors, such as silicon-based product providers (e.g., ST Microelectronics, ON Semiconductor, and Mitsubishi), silicon carbide-based product providers (e.g., Rohm, United Silicon Carbide and Cree) and other high-voltage GaN product providers (e.g., Power Integrations, Infineon, GaN Systems, Navitas and Texas Instruments), have, and some of our potential competitors could have, substantial competitive advantages such as:

- greater name recognition, longer operating histories and larger customer bases;
- larger sales and marketing budgets and resources;
- broader distribution and established relationships with channel partners and customers;
- broader and deeper product lines;
- greater customer support resources;
- greater resources to make acquisitions;
- lower labor and research and development costs;
- substantially greater financial and other resources; and
- larger scale manufacturing operations.

In addition, some of our larger competitors have substantially broader product offerings and may be able to leverage their relationships with channel partners and customers based on other products to gain business in a manner that discourages users from purchasing our products, including by selling at zero or negative margins or product bundling. Potential customers may also prefer to purchase from their existing suppliers rather than a new supplier regardless of product performance or features. As a result, even if the features of our products are superior, customers may not purchase our products. In addition, innovative start-up companies, and larger companies that are making significant investments in research and development, may invent similar or superior products and technologies that compete with our products. Our current and potential competitors may also establish cooperative relationships among themselves or with third parties that may further enhance their resources. If we are unable to compete successfully, or if competing successfully requires us to take costly actions in response to the actions of our competitors, our business, financial condition and results of operations could be adversely affected.

We rely on third-party channel partners to sell our products. If our partners fail to perform, our ability to sell our products and services could be limited, and if we fail to optimize our channel partner model going forward, our operating results could be harmed.

A portion of our revenue is generated through sales by our channel partners, which include distributors and resellers. To the extent our channel partners are unsuccessful in selling our products, we are unable to enter into arrangements with, and retain, a sufficient number of effective channel partners in each of the regions in which we sell products or we are unable to keep our channel partners motivated to sell our products, our ability to sell our products and our operating results could be harmed. The termination of our relationship with any significant channel partner may adversely impact our sales and operating results.

We rely on limited sources of wafer fabrication, packaged products fabrication and product testing, the loss of which could delay and limit our product shipments.

Our partly-owned fabrication facility through AFSW currently satisfies all of our GaN fab-wafer requirements (i.e., when a GaN epiwafer undergoes various processes at a wafer fabrication facility). While we believe AFSW has sufficient capacity for our near-term business needs and is reasonably scalable as our demand for throughput increases, any disruption in the AFSW fabrication facilities may severely impact our supply. On April 1, 2020, FSL exercised its put option under the joint venture agreement and notified us that FSL intended to exit the joint venture by selling its 51% interest in AFSW to us. While the joint venture agreement with FSL provides that completion of the transaction was to take place as soon as 60 days from the date of the exercise notice, such transaction is subject to regulatory and other approvals in Japan that we believe will take up to the second quarter of 2021 to obtain, assuming such approval is received at all. In December 2020, we created a joint venture company in Singapore with a third party (controlling party with 75% ownership) to become a partner in AFSW, subject to regulatory and other approvals in Japan that we believe will take up to the second quarter of 2021 to obtain, assuming such approval is received at all. If we were to become the sole owner of AFSW and it continues to operate at a loss at such time (which we currently expect to be the case), we may be unable to sustain or continue to operate the AFSW facility. In the event we are unable to continuously sustain the AFSW fabrication facility, securing supply from another source and adapting our process at such source would lead to a significant set of challenges, additional costs and delays.

We also utilize relatively standard back-side wafer processing services such as wafer-thinning and wafer back-side metalization from foundries in Asia. These suppliers also offer such services to other companies, which may lead to us not having access to adequate capacity for our needs and our customers' needs. We may have less control over delivery schedules and overall support versus other customers and users of those facilities. If the wafer foundries we use are unable or unwilling to manufacture our products in our required volumes, or at specified times, we may have to identify and qualify acceptable additional or alternative foundries. This qualification process could typically take three to six months and we may not find sufficient capacity in a timely manner or at an acceptable cost to satisfy our production requirements.

We additionally use outsourced assembly and test providers ("OSATs") for packaging and testing of our products. We utilize multiple OSATs for various package types and a single OSAT for each type of package. These OSATs may take time, or may be unable, to respond if our throughput demands increase, particularly if we expect a rapid increase in production and could harm our ability to meet unexpected rises in demand in an acceptable time frame. If the OSATs we use are unable or unwilling to package and test our products in our required volumes, or at specified times, we may have to identify and qualify acceptable additional or alternative OSATs. This qualification process would typically take three to nine months and we may not find sufficient capacity in a timely manner or at an acceptable cost to satisfy our production requirements.

Some companies that supply products to our customers are similarly dependent on a limited number of suppliers. These other companies' products may represent important components of power adapters, inverters and other products into which our products are designed. If these companies are unable to produce the volumes demanded by our customers, our customers may be forced to slow down or halt production on the equipment for which our products are designed, which could materially impact our order levels.

Because we depend on third-party manufacturers to build portions of our products, we are susceptible to manufacturing delays and pricing fluctuations that could prevent us from shipping customer orders on time, if at all, or on a cost-effective basis, which may result in the loss of sales, income and customers.

We depend on third-party manufacturers to build several stages of our products. Our reliance on these third-party manufacturers reduces our control over the manufacturing process and exposes us to risks, including reduced control over quality assurance, product costs, and product supply and timing. Any manufacturing disruption by these third-party manufacturers could severely impair our ability to fulfill orders. Our reliance on third-party manufacturers also creates the potential for infringement or misappropriation of our intellectual property. If we are unable to manage our relationships with third-party manufacturers effectively, or if our third-party manufacturers experience delays or disruptions for any reason, increased manufacturing lead-times, capacity constraints or quality control problems in their manufacturing operations, or if they otherwise fail to meet our future requirements for timely delivery, our ability to ship products to our customers would be severely impaired, and our business and results of operations would be seriously harmed.

Our sales cycles can be long and unpredictable, and our sales efforts require considerable time and expense. As a result, our revenue is difficult to predict and may vary substantially from period to period, which may cause our results of operations to fluctuate significantly.

Our results of operations may fluctuate, in part, because of the resource intensive nature of our sales efforts, the length and variability of our sales cycle and the short-term difficulty in adjusting our operating expenses. To the extent our competitors develop products that our prospective customers view as equivalent or superior to ours, the average duration of our sales cycles may increase, and our sales efforts may be less successful. Because the length of time required to close a sale varies substantially from customer to customer, it is difficult to predict exactly when, or even if, we will make a sale with a potential customer. As a result, individual sales have, in some cases, occurred in quarters subsequent to or in advance of those we anticipated, or have not occurred at all, which makes it difficult for us to forecast our revenue accurately in any quarter. Because a substantial portion of our expenses are relatively fixed in the short term, our results of operations will suffer if our revenue falls below expectations in a particular quarter, which could cause the market price of our common stock to decline.

Our current operations are concentrated in one location and in the event of an earthquake, terrorist attack or other disaster affecting this location or those of our major suppliers, our operations may be interrupted and our business may be harmed.

Our principal executive offices and primary epiwafer operating facilities are situated near Santa Barbara, California, and most of our major suppliers, which are wafer foundries and assembly houses, are located in areas that have been subject to severe earthquakes and are susceptible to other disasters such as tropical storms, typhoons or tsunamis. In the event of a disaster, such as an earthquake and tsunami in Japan, we or one or more of our major suppliers may be temporarily unable to continue operations and may suffer significant property damage. Any interruption in our ability, or that of our major suppliers, to continue operations could delay the development and shipment of our products and have a substantial negative impact on our financial results. As part of our risk management policy, we maintain insurance coverage at levels that we believe are appropriate for our business. However, in the event of an accident or incident at these facilities, we cannot assure you that the amounts or coverage of insurance will be sufficient to satisfy any damages and losses.

We rely on our management team and other key employees and will need additional personnel to grow our business. The loss of one or more key employees or our inability to attract and retain qualified personnel could harm our business.

Our future success is substantially dependent on our ability to attract, retain and motivate the members of our management team and other key employees throughout our organization. The loss of one or more members of our management team or other key employees could materially impact our sales or our research and development programs and materially harm our business, financial condition, results of operations and prospects. We do not maintain key person life insurance policies on any of our management team members or key employees. Competition for highly skilled personnel is intense. We may not be successful in attracting or retaining qualified personnel to fulfill our current or future needs. For positions in our offices near Santa Barbara, California in particular, we may experience challenges hiring new and mid-level employees in part due to the high local housing costs. Our competitors may be successful in recruiting and hiring members of our management team or other key employees, and it may be difficult for us to find suitable replacements on a timely basis, on competitive terms, or at all.

If we fail to effectively manage our growth, our business, financial condition and results of operations would be harmed.

We are a development stage company with fewer than 100 employees and are subject to the strains of ongoing development and growth, which has placed significant demands on our management and our operational and financial infrastructure. To manage any growth effectively, we must continue to improve our operational, financial and management systems and controls by, among other things:

- effectively attracting, training and integrating new employees, particularly members of our sales, applications and research and development teams;

- further improving our key business applications, processes and IT infrastructure to support our business needs;

- enhancing our information and communication systems to ensure that our employees and offices around the world are well coordinated and can effectively communicate with each other and our channel partners and customers; and

- appropriately documenting and testing our IT systems and business processes.

These and other improvements in our systems and controls will require significant capital expenditures and the allocation of valuable management and employee resources. If we fail to implement these improvements effectively, our ability to manage growth and ensure ongoing operation of key business systems would be impaired, and our business, financial condition and results of operations would be harmed.

We are subject to a number of risks associated with international sales and operations.

We have small teams that are engaged in marketing, selling and supporting our products internationally. As a result, we must hire and train experienced personnel to staff and manage our foreign operations. To the extent that we experience difficulties in recruiting, training, managing and retaining international employees, particularly managers and other members of our international sales team, we may experience difficulties in sales productivity in, or market penetration of, foreign markets. We also enter into strategic distributor and reseller relationships with companies in certain international markets where we do not have a local presence. If we are not able to maintain successful strategic distributor and reseller relationships with our international channel partners or recruit additional channel partners, our future success in these international markets could be limited.

We are subject to government regulation, including import, export and economic sanctions laws and regulations that may expose us to liability and increase our costs.

Our products and technology are subject to U.S. export controls, including the U.S. Department of Commerce's Export Administration Regulations and economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Controls. These regulations may limit the export of our products and technology, and provision of our services outside of the United States, or may require export authorizations, including by license, a license exception, or other appropriate government authorizations and conditions, including annual or semi-annual reporting. Export control and economic sanctions laws may also include prohibitions on the sale or supply of certain of our products to embargoed or sanctioned countries, regions, governments, persons, and entities. In addition, various countries regulate the importation of certain products, through import permitting and licensing requirements, and have enacted laws that could limit our ability to distribute our products. The exportation, re-exportation, and importation of our products and technology and the provision of services, including by our partners, must comply with these laws or else we may be adversely affected, through reputational harm, government investigations, penalties, and a denial or curtailment of our ability to export our products and technology. Complying with export control and sanctions laws may be time-consuming and may result in the delay or loss of sales opportunities. Although we take precautions to prevent our products and technology from being provided in violation of such laws, our products and technology may have previously been, and could in the future be, provided inadvertently in violation of such laws, despite the precautions we take. If we are found to be in violation of U.S. sanctions or export control laws, it could result in substantial fines and penalties for us and for the individuals working for us. Export or import laws or sanctions policies are subject to rapid change and have been the subject of recent U.S. and non-U.S. government actions. Changes in export or import laws or sanctions policies, may adversely impact our operations, delay the introduction and sale of our products in international markets, or, in some cases, prevent the export or import of our products and technology to certain countries, regions, governments, persons, or entities altogether, which could adversely affect our business, financial condition and results of operations.

Our sales to government customers subject us to uncertainties regarding fiscal funding approvals, renegotiations or terminations at the discretion of the government, as well as audits and investigations, which could result in litigation, penalties and sanctions including early termination, suspension and debarment.

Our multi-year contracts signed with agencies and departments of the U.S. government are generally subject to annual fiscal funding approval and may be renegotiated or terminated at the discretion of the government. Termination, renegotiation or the lack of funding approval for a contract could adversely affect our sales, revenue and reputation. Additionally, our government contracts are generally subject to requirements that are not typically present in commercial contracts, such as various Federal Acquisition Regulation or Defense Federal Acquisition Regulation clauses. These clauses place certain requirements upon us such as compliance with equal opportunity employment, safeguarding of contractor information systems, executive compensation restrictions and reporting of certain lobbying activities. Government contracts are also subject to audits and investigations. Failure to meet contractual requirements could result in various civil and criminal actions and penalties, and administrative sanctions, including termination of contracts, refund of a portion of fees received, forfeiture of profits, suspension of payments, fines and suspensions or debarment from doing business with the government, any of which could materially adversely affect our business, financial condition and results of operations.

Failure to comply with anti-bribery, anti-corruption and anti-money laundering laws could subject us to penalties and other adverse consequences.

We are subject to the U.S. Foreign Corrupt Practices Act ("FCPA") and other anti-corruption, anti-bribery, and anti-money laundering laws in the jurisdictions in which we do business, both domestic and abroad. These laws generally prohibit us and our employees from improperly influencing government officials or commercial parties in order to obtain or retain business, direct business to any person or gain any improper advantage. The FCPA and similar applicable anti-bribery and anti-corruption laws also prohibit our third-party business partners, representatives and agents from engaging in corruption and bribery. We and our third-party business partners, representatives and agents may have direct or indirect interactions with officials and employees of government agencies or state-owned or affiliated entities. We may be held liable for the corrupt or other illegal activities of these third-party business partners and intermediaries, our employees, representatives, contractors, channel partners and agents, even if we do not explicitly authorize such activities. These laws also require that we keep accurate books and records and maintain internal controls and compliance procedures designed to prevent any such actions. Any violation of the FCPA or other applicable anti-bribery, anti-corruption laws and anti-money laundering laws could result in whistleblower complaints, adverse media coverage, investigations, imposition of significant legal fees, loss of export privileges, severe criminal or civil sanctions or suspension or debarment from U.S. government contracts, substantial diversion of management's attention, drop in stock price or overall adverse consequences to our business, all of which may have an adverse effect on our reputation, business, financial condition, and results of operations.

Our business may be affected by litigation and government investigations.

We may from time to time receive inquiries and subpoenas and other types of information requests from government authorities and others and we may become subject to claims and other actions related to our business activities. While the ultimate outcome of investigations, inquiries, information requests and legal proceedings is difficult to predict, defense of litigation claims can be expensive, time-consuming and distracting, and adverse resolutions or settlements of those matters may result in, among other things, modification of our business practices, costs and significant payments, any of which could have a material adverse effect on our business, financial condition, results of operations and prospects.

Risks Related to Our Intellectual Property

Any failure by us to protect our proprietary technologies or maintain the right to use certain technologies may negatively affect our ability to compete.

To compete effectively, we must protect our intellectual property. We rely on a combination of patents, trademarks, copyrights, trade secret laws, confidentiality procedures and licensing arrangements to protect our intellectual property rights. We hold numerous patents and have a number of pending patent applications. However, our portfolio of patents evolves as new patents are issued and older patents expire and the expiration of patents could have a negative effect on our ability to prevent competitors from duplicating certain or all of our products.

We might not succeed in obtaining patents from any of our pending applications. Even if we are awarded patents, they may not provide any meaningful protection or commercial advantage to us, as they may not be of sufficient scope or strength, or may not be issued in all countries where our products can be sold. In addition, our competitors may be able to design around our patents.

There can be no assurance that an issued patent will remain valid and enforceable in a court of law through the entire patent term. Should the validity of a patent be challenged, the legal process associated with defending the patent can be costly and time consuming. Issued patents can be subject to oppositions, interferences and other third party challenges that can result in the revocation of the patent or limit patent claims such that patent coverage lacks sufficient breadth to protect subject matter that is commercially relevant. Competitors may be able to circumvent our patents. In cases where market ramp of our products may encounter delays it is possible that some patents or licensed patents covering the product has expired or will be in force for only a short period of time following such market ramp. We cannot predict with any certainty if any third party U.S. or foreign patent rights, or other proprietary rights, will be deemed infringed by the use of our technology. Nor can we predict with certainty which, if any, of these rights will or may be asserted against us by third parties.

To protect our product technology, documentation and other proprietary information, we enter into confidentiality agreements with our employees, customers, consultants and strategic partners. We require our employees to acknowledge their obligation to maintain confidentiality with respect to our products. Despite these efforts, we cannot guarantee that these parties will maintain the confidentiality of our proprietary information in the course of future employment or working with other business partners. We develop, manufacture and sell our products in Asia and other countries that may not protect our intellectual property rights to the same extent as the laws of the United States. This makes piracy of our technology and products more likely. Steps we take to protect our proprietary information may not be adequate to prevent theft of our technology. We may not be able to prevent our competitors from independently developing technologies and products that are similar to or better than ours.

Vigorous protection and pursuit of intellectual property rights or positions characterize the semiconductor industry. This often results in expensive and lengthy litigation. We, and our customers or suppliers, may be accused of infringing patents or other intellectual property rights owned by third parties in the future. An adverse result in any litigation against us or a customer or supplier could force us to pay substantial damages, stop manufacturing, using and selling the infringing products, spend significant resources to develop non-infringing technology, discontinue using certain processes or obtain licenses to use the infringing technology. In addition, we may not be able to develop non-infringing technology or find appropriate licenses on reasonable terms or at all.

Patent disputes in the semiconductor industry between industry participants are often settled through cross-licensing arrangements. Our portfolio of patents may not have the breadth to enable us to settle an alleged patent infringement claim through a cross-licensing arrangement, especially for patent disputes brought by non-practicing entities (patent holders who do not manufacture products but only seek to monetize patent rights) that cannot be settled through cross-licensing and cannot be avoided through cross-licensing with industry practitioners. We may therefore be more exposed to third-party claims than some of our larger competitors and customers.

Customers may make claims against us in connection with infringement claims made against them that are alleged to relate to our products or components included in our products, even where we obtain the components from a supplier. In such cases, we may incur monetary losses due to cost of defense, settlement or damage award and non-monetary losses as a result of diverting valuable internal resources to litigation support. To the extent that claims against us or our customers relate to third-party intellectual property integrated into our products, there is no assurance that we will be fully or even partially indemnified by our suppliers against any losses.

Furthermore, we may initiate claims or litigation against third parties for infringing our proprietary rights or to establish the validity of our proprietary rights. This could consume significant resources and divert the efforts of our technical and management personnel, regardless of the litigation’s outcome.

If we fail to comply with our obligations under any license, collaboration or other agreements, we may be required to pay damages and could lose certain intellectual property rights.

Our current licenses impose, and any future licenses we enter into are likely to impose, various development, commercialization, funding, milestone, royalty, diligence, sublicensing, insurance, patent prosecution and enforcement and other obligations on us. If we breach any of these obligations, or use the intellectual property licensed to us in an unauthorized manner, we may be required to pay damages and the licensor may have the right to terminate the license, which could result in us being unable to develop, manufacture and sell products that are covered by the licensed technology or could enable a competitor to gain access to the licensed technology. Moreover, our licensors may own or control intellectual property that has not been licensed to us and, as a result, we may be subject to claims, regardless of their merit, that we are infringing or otherwise violating the licensor’s rights in such unlicensed intellectual property. The amount of our future royalty obligations will depend on the technology and intellectual property we use in products that we successfully develop, manufacture and commercialize, if any. Therefore, even if we successfully develop and commercialize products, we may be unable to achieve or maintain profitability.

For example, our cooperation agreement with Nexperia, which is key to our business, contains certain terms that, if triggered, could have a material adverse effect on our business, financial condition, results of operations and prospects. For instance, the LSA contains customary events of default including, among others, payment defaults, breaches of covenants defaults, the occurrence of a material adverse change, bankruptcy and insolvency defaults, cross defaults with certain material indebtedness, judgment defaults, and the occurrence of a change of control. In addition, an event of default will occur if the DLA is terminated under certain circumstances or we fail to timely deliver reports related to statements of work under the DLA. Upon the occurrence and during the continuance an event of default, Nexperia may declare all or a portion of our outstanding obligations to be immediately due and payable and exercise other rights and remedies provided for under the LSA. If specified events of default occur and remain continuing for more than 30 consecutive days, we are required to assign a portion of our patent portfolio constituting collateral to Nexperia in satisfaction of our obligations under the LSA. During the existence of an event of default, interest on the obligations could be increased to 3.0% above the otherwise applicable interest rate. Additionally, pursuant to an intracompany license agreement with our wholly owned subsidiary, Transphorm Japan Epi ("TJE"), if certain events (some of which may be beyond our control) occur, we could be forced to sell TJE at fair market value to a third party that is approved by us and Nexperia. While TJE's epiwafer capacity currently is not required for production of our products, if such a "forced sale" event were to happen in the future, we could be required to purchase a portion of our epiwafer requirements from the third party that purchases TJE. This could impact our epiwafer costs, reduce any overall profits, or cause us to lose a portion of our capacity, requiring us to generate more epiwafer capacity earlier than planned. This would result in greater capital expenditure than anticipated, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

Risks Related to Our Financial Control Environment

Being a public company can be administratively burdensome and will significantly increase our legal and financial compliance costs.

As a public reporting company, we are subject to the information and reporting requirements of the Securities Act, the Exchange Act and other federal securities laws, rules and regulations related thereto, including compliance with the Sarbanes-Oxley Act of 2002 (the "Sarbanes-Oxley Act"), and the Dodd-Frank Wall Street Reform and Consumer Protection Act. In addition, the listing requirements of any national securities exchange or other exchange and other applicable securities rules and regulations impose various requirements on public companies. Our management and other personnel will need to devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations will significantly increase our legal and financial compliance costs and will make some activities more time-consuming and costly. Among other things, we are required to:

- maintain and evaluate a system of internal controls over financial reporting in compliance with the requirements of Section 404 of the Sarbanes-Oxley Act and the related rules and regulations of the SEC and the Public Company Accounting Oversight Board;
- maintain policies relating to disclosure controls and procedures;
- prepare and distribute periodic reports in compliance with our obligations under federal securities laws;
- institute a more comprehensive compliance function, including with respect to corporate governance; and
- involve, to a greater degree, our outside legal counsel and accountants in the above activities.

The costs of preparing and filing annual and quarterly reports, proxy statements and other information with the SEC and furnishing audited reports to stockholders is expensive and compliance with these rules and regulations will require us to hire additional financial reporting, internal controls and other finance personnel, and will involve a material increase in regulatory, legal and accounting expenses and the attention of our board of directors and management. In addition, being a public company makes it more expensive for us to obtain director and officer liability insurance. In the future, we may be required to accept reduced coverage or incur substantially higher costs to obtain this coverage. These factors could also make it more difficult for us to attract and retain qualified executives and members of our board of directors.

Any failure to maintain effective internal controls over our financial reporting could materially and adversely affect us.

Section 404 of the Sarbanes-Oxley Act requires us to include in our annual reports on Form 10-K an assessment by management of the effectiveness of our internal controls over financial reporting. However, while we remain an emerging growth company, we will not be required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm.

To achieve compliance with Section 404 within the prescribed period, we will be engaged in a process to document and evaluate our internal control over financial reporting, which is both costly and challenging. In this regard, we will need to continue to dedicate internal resources, potentially engage outside consultants and adopt a detailed work plan to assess and document the adequacy of internal control over financial reporting, continue steps to improve control processes as appropriate, validate through testing that controls are functioning as documented, and implement a continuous reporting and improvement process for internal control over financial reporting. Despite our efforts, there is a risk that we will not be able to conclude, within the prescribed time frame or at all, that our internal control over financial reporting is effective as required by Section 404. For example, in connection with the audit of our consolidated financial statements for the years ended December 31, 2020 and 2019, we identified certain deficiencies relating to our internal control over financial reporting that constitute material weaknesses under standards established by the Public Company Accounting Oversight Board (the "PCAOB"), and we cannot predict the outcome of our testing in future periods. If we identify additional material weaknesses in the future or are unable to remediate the material weaknesses we currently have, our financial statements may be inaccurate and investors could lose confidence in the reliability of our financial statements, which in turn could negatively affect the market price of our common stock. In addition, if we are not able to continue to meet these requirements, we may not be able to become or remain listed on any national securities exchange or other exchange or quoted on an over-the-counter market.

We have identified material weaknesses in our internal control over financial reporting that, if not properly remediated, could result in material misstatements in our consolidated financial statements in future periods.

We have limited accounting and financial reporting personnel and other resources with which to address our internal controls and related procedures. In connection with the audit of our consolidated financial statements for the year ended December 31, 2018, we identified certain deficiencies relating to our internal control over financial reporting that constitute material weaknesses under standards established by the PCAOB. As of December 31, 2020, those material weaknesses continued to exist. Accordingly, we were not able to assert that our internal control over financial reporting was effective as of December 31, 2020. The PCAOB defines a material weakness as a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis. A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent or detect misstatements on a timely basis. We identified a material weakness related to the fact that certain members of our finance team and personnel are able to operate across a number of different functions and have user access that gives rise to segregation of duties risks in connection with our information technology infrastructure. Access to systems has subsequently been restricted and access will be managed by independent personnel. The other material weakness relates to a lack of evidence to support review work and oversight procedures. Formal review processes and meetings are being introduced in addition to the creation of a specific role in the finance team to review documentation and prepare evidence of such review. These material weaknesses have a pervasive impact on various activity level and financial reporting cycles. We will need to take additional measures to fully remediate these deficiencies. The measures we have taken, and expect to take, to improve our internal controls may not be sufficient to (1) address the issue identified, (2) ensure that our internal controls are effective, or (3) ensure that the identified material weaknesses or other material weaknesses will not result in a material misstatement of our annual or interim financial statements. In addition, other material weaknesses may be identified in the future. If we are unable to correct deficiencies in internal controls in a timely manner, our ability to record, process, summarize and report financial information accurately and within the time periods specified in SEC rules and forms will be adversely affected. This failure could negatively affect the market price and trading liquidity of our common stock, cause investors to lose confidence in our reported financial information, subject us to civil and criminal investigations and penalties, and generally materially and adversely impact our business and financial condition.

If our estimates or judgments relating to our critical accounting policies are based on assumptions that change or prove to be incorrect, our results of operations could fall below the expectations of investors, resulting in a decline in the market price of our common stock.

The preparation of financial statements in conformity with generally accepted accounting principles in the United States requires management to make estimates and assumptions that affect the amounts reported in our financial statements. Significant assumptions and estimates used in preparing our financial statements include those related to assets, liabilities, revenue, expenses and related disclosures. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets, liabilities, equity, revenue and expenses that are not readily apparent from other sources. Our results of operations may be adversely affected if our assumptions change or if actual circumstances differ from those in our assumptions, which could cause our results of operations to fall below the expectations of investors, resulting in a decline in the market price of our common stock.

Changes in accounting rules and regulations, or interpretations thereof, could result in unfavorable accounting charges or require us to change our compensation policies.

Accounting methods and policies for companies such as ours, including policies governing revenue recognition, leases, research and development and related expenses, and accounting for stock-based compensation, are subject to review, interpretation and guidance from our auditors and relevant accounting authorities, including the SEC. Changes to accounting methods or policies, or interpretations thereof, may require us to reclassify, restate or otherwise change or revise our historical financial statements, including those contained in this Report.

Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited.

We have incurred substantial losses during our history, do not expect to become profitable in the near future and may never achieve profitability. To the extent that we continue to generate taxable losses, unused losses will carry forward to offset future taxable income, if any, until such unused losses expire. Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, if a corporation undergoes an "ownership change," generally defined as a greater than 50% change (by value) in its equity ownership over a three-year period, the corporation's ability to use its pre-change net operating loss carryforwards ("NOLs"), and other pre-change tax attributes (such as research tax credits) to offset its post-change income or taxes may be limited. The Merger, our prior equity offerings and other changes in our stock ownership may have resulted in ownership changes. In addition, we may experience ownership changes in the future as a result of subsequent shifts in our stock ownership, some of which are outside of our control. As a result, if we earn net taxable income, our ability to use our pre-change NOLs to offset U.S. federal taxable income may be subject to limitations, which could potentially result in increased future tax liability to us. In addition, at the state level, there may be periods during which the use of NOLs is suspended or otherwise limited, which could accelerate or permanently increase state taxes owed. For example, California recently passed the 2020 Budget Act, which temporarily suspends the use of NOLs and limits the utilization of the research credit to $5 million annually for 2020, 2021 and 2022.

Risks Related to Ownership of Our Common Stock

We are an "emerging growth company" and we cannot be certain if the reduced reporting requirements applicable to emerging growth companies will make our common stock less attractive to investors.

We are an "emerging growth company" as defined in the JOBS Act. For as long as we continue to be an emerging growth company, we may take advantage of exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies, including (1) not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, (2) reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and (3) exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. In addition, as an emerging growth company, we are only required to provide two years of audited financial statements in this Report. We could be an emerging growth company for up to five years, although circumstances could cause us to lose that status earlier, including if the market value of our common stock held by non-affiliates exceeds $700.0 million as of June 30 of any year or if we have total annual gross revenue of $1.07 billion or more during any fiscal year, in which cases we would no longer be an emerging growth company as of the following December 31, or if we issue more than $1.0 billion in nonconvertible debt during any three-year period, in which case we would no longer be an emerging growth company immediately. Even after we no longer qualify as an emerging growth company, we may still qualify as a "smaller reporting company" which would allow us to take advantage of many of the same exemptions from disclosure requirements including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act and reduced disclosure obligations regarding executive compensation. If we rely on these exemptions, investors may find our common stock less attractive, which could result in a less active trading market, if any, for our common stock and more volatility or a decline in our stock price.

Under the JOBS Act, emerging growth companies can also delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have elected to use the extended transition period under the JOBS Act until the earlier of the date we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, our financial statements may not be comparable to companies that comply with new or revised accounting pronouncements as of public company effective dates.

We are a smaller reporting company, and we cannot be certain if the reduced disclosure requirements applicable to smaller reporting companies will make our common stock less attractive to investors.

We are currently a "smaller reporting company," meaning that we are not an investment company, an asset-backed issuer, or a majority-owned subsidiary of a parent company that is not a smaller reporting company and the market value of our stock held by non-affiliates, or our public float, is less than $250 million. In the event our public float increases, we will remain a smaller reporting company if we continue to have annual revenues of less than $100 million during our most recently completed fiscal year and our public float is less than $700 million. If we are still considered a smaller reporting company at such time as we cease being an "emerging growth company," we will be required to provide additional disclosure in our SEC filings. However, similar to emerging growth companies, smaller reporting companies are able to provide simplified executive compensation disclosures in their filings; are exempt from the provisions of Section 404(b) of the Sarbanes-Oxley Act requiring that independent registered public accounting firms provide an attestation report on the effectiveness of internal control over financial reporting; and have certain other decreased disclosure obligations in their SEC filings, including, among other things, only being required to provide two years of audited financial statements in annual reports. Decreased disclosures in our SEC filings due to our status as a smaller reporting company may make it harder for investors to analyze our results of operations and financial prospects, and may cause some investors not to invest in or hold our stock.

We are not currently subject to compliance with rules requiring the adoption of certain corporate governance measures and, as a result, our stockholders have limited protections against interested director transactions, conflicts of interest and similar matters.

The Sarbanes-Oxley Act, as well as resulting rule changes enacted by the SEC, the New York Stock Exchange and the Nasdaq Stock Market, require the implementation of various measures relating to corporate governance. These measures are designed to enhance the integrity of corporate management and the securities markets and apply to securities which are listed on those exchanges. Because our common stock is not currently listed on a national securities exchange, we are not required to comply with many of the corporate governance provisions and we have not yet adopted certain of these measures. Until we comply with such corporate governance measures, regardless of whether such compliance is required, the absence of such standards of corporate governance may leave our stockholders without protections against interested director transactions, conflicts of interest and similar matters.

We may be a controlled company within the meaning of the Nasdaq and NYSE rules if we eventually list on such exchange, and, as a result, may qualify for and intend to rely on exemptions from certain corporate governance requirements.

As of December 31, 2020, Phorm beneficially owned approximately 52.6% of our outstanding common stock. As a result, we may be a controlled company within the meaning of the Nasdaq or NYSE corporate governance standards, if we eventually list on the applicable exchange. Under Nasdaq rules, for example, a controlled company may elect not to comply with certain corporate governance requirements of the Nasdaq, including the requirements that:

- a majority of the board of directors consist of independent directors;
- the nominating and corporate governance committee be composed entirely of independent directors with a written charter addressing the committee's purpose and responsibilities;
- compensation committee be composed entirely of independent directors with a written charter addressing the committee's purpose and responsibilities; and
- there be an annual performance evaluation of the nominating and corporate governance and compensation committees.

If we were to list on Nasdaq in the future and are a controlled company at such time, we intend to utilize these exemptions (or similar exemptions if we were to list on NYSE), including the exemption for a board of directors composed of a majority of independent directors. In addition, to the extent we create committees, these committees may not be composed entirely of independent directors immediately following such creation. We may rely on the phase-in rules of the SEC, Nasdaq or NYSE if we are no longer a controlled company under the applicable listing standard. For example, the phase-in rules for Nasdaq permit us to have a compensation committee that has one member that is independent at the time that we cease to be a controlled company, a majority of members that are independent within 90 days thereafter and all members that are independent within one year thereafter. Accordingly, you may not have the same protections afforded to shareholders of companies that are subject to all of the corporate governance requirements of Nasdaq or NYSE.

In addition, pursuant to the terms of a stockholders agreement with Phorm (the "Phorm Stockholders Agreement"), Phorm has the right to appoint a member to each committee that may be established by our board of directors, appoint the chair of our board of directors, and nominate a majority of our board of directors, in each case subject to a phase-out period based on Phorm's future share ownership. Phorm may assign these and other governance rights to certain transferees. Accordingly, even if we are no longer a controlled company, holders of our common stock may not have the same protections afforded to stockholders of companies that do not have a stockholders agreement similar to ours.

Our common stock trades on the OTCQB instead of a national securities exchange, which may make it more difficult for stockholders to sell their shares.

Our common stock is currently quoted on the OTC Market Group's OTCQB Market quotation system under the ticker symbol "TGAN." The OTCQB are regulated quotation services that display real-time quotes, last sale prices and volume limitations in over-the-counter securities. Trading in shares quoted on the OTCQB is often thin, meaning that the number of persons interested in purchasing stock at or near bid prices at any given time may be relatively small or non-existent, and characterized by volatility in trading prices. This volatility may be caused by a variety of factors, including the lack of readily available price quotations, the absence of consistent administrative supervision of bid and ask quotations, lower trading volume and market conditions. As a result, there may be wide fluctuations in the market price of the shares of our common stock for reasons unrelated to operating performance, and this volatility, when it occurs, may have a negative effect on the market price of our common stock. Moreover, the OTCQB is not a stock exchange, and trading of securities on it is often more sporadic than the trading of securities listed on a national quotation system or stock exchange. Accordingly, our stockholders may not be able to realize a fair price for their shares when they determine to sell them or may have to hold them for a substantial period of time until the market for our common stock improves. In addition, the stock markets in general, including in the industry in which we operate, have experienced extreme volatility, particularly due to the COVID-19 pandemic, that has, in some cases, been unrelated to the operating performance of the issuer. Accordingly, these broad market and industry factors may also seriously harm the market price of our common stock, regardless of our operating performance.

Our common stock may not be eligible for listing or quotation on any securities exchange.

We do not currently meet the initial quantitative listing standards of any national securities exchange and we may never be able to satisfy the listing requirements for our common stock to be listed on a national securities exchange, which is often a more widely-traded and liquid market. Some, but not all, of the factors which may delay or prevent the listing of our common stock on a more widely-traded and liquid market include the following: our stockholders' equity may be insufficient; the market value of our outstanding securities may be too low; our net income from operations may be too low; our common stock may not be sufficiently widely held; we may not be able to secure market makers for our common stock; and we may fail to meet the rules and requirements mandated by the several exchanges and markets to have our common stock listed. Should we fail to satisfy the initial listing standards of the national exchanges, or our common stock is otherwise rejected for listing, the trading price of our common stock could suffer, the trading market for our common stock may be less liquid and our common stock price may be subject to increased volatility.

The designation of our common stock as a "penny stock" would limit the liquidity of our common stock.

Our common stock may be deemed a "penny stock" (as that term is defined under Rule 3a51-1 of the Exchange Act). Generally, "penny stock" is common stock that is not listed on a securities exchange and trades for less than $5.00 a share. Prices often are not available to buyers and sellers and the market may be very limited. Penny stocks in start-up companies are among the riskiest equity investments. Broker-dealers who sell penny stocks must provide purchasers of these stocks with a standardized risk-disclosure document prepared by the SEC. The document provides information about penny stocks and the nature and level of risks involved in investing in the penny stock market. A broker must also provide purchasers with bid and offer quotations and information regarding broker and salesperson compensation and make a written determination that the penny stock is a suitable investment for the purchaser and obtain the purchaser's written agreement to the purchase. Many brokers and investors choose not to participate in penny stock transactions, which may result in further liquidity constraints and declines in the trading price of our common stock. Because of the penny stock rules, there may be less trading activity in penny stocks in any market that develops for our common stock in the future and stockholders are likely to have difficulty selling their shares.

Sales of substantial amounts of our common stock in the public markets, or the perception that such sales might occur, could cause the market price of our common stock to decline significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock into the public market, particularly sales by our directors, executive officers and principal stockholders, or the perception that these sales might occur in large quantities, could cause the market price of our common stock to decline. Pursuant to registration statements that were declared effective by the SEC on June 19, 2020 and January 27, 2021 (the "Resale Registration Statements"), we registered an aggregate of 43,512,653 shares of our common stock, which includes shares of common stock reserved for issuance pursuant to certain outstanding warrants and a convertible promissory note, for resale by the stockholders named therein.

Our executive officers, directors and certain beneficial owners of our common stock, holding in the aggregate approximately 66.5% of our common stock (including securities convertible into or exchangeable for our common stock) as of December 31, 2020, are currently subject to market standoff or lock-up agreements under which they cannot offer, sell, contract to sell, pledge, grant any option to purchase or otherwise dispose of shares of our capital stock, or enter into any hedging or similar transaction that is designed to or reasonably expected to lead to or result in a sale or other disposition of any of the economic consequences of ownership of shares of our capital stock, until June 20, 2021, subject to customary exceptions. If our stockholders sell, or the market perceives that our stockholders intend to sell, a substantial amount of our common stock in the public market, the market price of our common stock could decline significantly.

We may be subject to certain liquidated damages pursuant to the registration rights agreement we entered into with certain holders of our securities.

Pursuant to the registration rights agreements we entered into with certain holders of our securities, subject to certain exceptions, if (i) the Resale Registration Statements cease to remain continuously effective or such holders are otherwise not permitted to utilize the Resale Registration Statements to resell their registrable securities for a period of more than 15 consecutive trading days, or (ii) trading of our common stock is suspended or halted for more than three full, consecutive trading days, we may be subject to certain liquidated damages up to a maximum amount equal to the aggregate purchase price paid by the holders for their registrable securities.

FINRA sales practice requirements may limit a stockholder’s ability to buy and sell our stock.

The Financial Industry Regulatory Authority (“FINRA”) has adopted rules requiring that, in recommending an investment to a customer, a broker-dealer must have reasonable grounds for believing that the investment is suitable for that customer. Prior to recommending speculative or low-priced securities to their non-institutional customers, broker-dealers must make reasonable efforts to obtain information about the customer’s financial status, tax status, investment objectives and other information. Under interpretations of these rules, FINRA has indicated its belief that there is a high probability that speculative or low-priced securities will not be suitable for at least some customers. If these FINRA requirements are applicable to us or our securities, they may make it more difficult for broker-dealers to recommend that at least some of their customers buy our common stock, which may limit the ability of our stockholders to buy and sell our common stock and could have an adverse effect on the market for and price of our common stock. This could also make it more difficult for us to raise capital.

If securities or industry analysts do not publish research or reports about our business, or if they issue an adverse or misleading opinion regarding our stock, our stock price and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that industry or securities analysts publish about us or our business. We do not currently have and may never obtain research coverage by securities and industry analysts. In addition, because we did not become a reporting company by conducting an underwritten initial public offering of our common stock, and because we are not currently listed on a national securities exchange, security analysts of brokerage firms may not provide coverage of our company. We cannot assure you that brokerage firms will provide analyst coverage of our company in the future, or continue such coverage if started. In addition, investment banks may be less likely to agree to underwrite secondary offerings on our behalf than they might if we became a public reporting company by means of an underwritten initial public offering, because they may be less familiar with our company as a result of more limited coverage by analysts and the media, which could harm our ability to raise additional funding in the future. The failure to receive research coverage or support in the market for our shares will have an adverse effect on our ability to develop a liquid market for our common stock, which will negatively impact the trading price of our common stock.

In the event we obtain securities or industry analyst coverage, if any of the analysts who cover us issue an adverse or misleading opinion regarding us, or if our operating results fail to meet the expectations of analysts, our stock price would likely decline. If one or more of these analysts cease coverage of us or fail to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline.

Our principal stockholders and management have substantial control over us and could delay or prevent a change in corporate control.

As of December 31, 2020, Phorm, our largest stockholder, beneficially owned approximately 52.6% of our common stock, and our executive officers and directors, together with holders of five percent or more of our outstanding common stock and their respective affiliates, beneficially owned approximately 71.3% of our common stock. As a result, these stockholders, acting together, or Phorm individually, have the ability to significantly impact the outcome of matters submitted to our stockholders for approval, including the election of directors and any merger, consolidation, or sale of all or substantially all of our assets. In addition, these stockholders, acting together or Phorm individually, have the ability to significantly impact the management and affairs of our company. Under the Phorm Stockholders Agreement, Phorm has the right to nominate (i) a majority of the board so long as it beneficially owns at least 40% of our then-outstanding shares of common stock, (ii) 33% of the directors (rounded up to the nearest whole number) so long as it beneficially owns at least 20% but less than 40% of our then-outstanding shares of common stock, and (iii) 10% of the directors (rounded up to the nearest whole number) so long as it beneficially owns at least 10% but less than 20% of our then-outstanding shares of common stock. Further, pursuant to the Phorm Stockholders Agreement, so long as Phorm beneficially owns 20% or more of the outstanding shares of our common stock, we will take all necessary action to cause a director nominated by Phorm to serve as chair of our board of directors.

The interests of these stockholders may not be the same as or may even conflict with your interests. The concentration of ownership and Phorm's rights under the Phorm Stockholders Agreement might decrease the market price of our common stock by:

- delaying, deferring, or preventing a change in control of the company, which could deprive our stockholders of an opportunity to receive a premium for their common stock as part of a sale of our company or our assets and might affect the prevailing market price of our common stock;

- impeding a merger, consolidation, takeover, or other business combination involving us; or

- discouraging a potential acquirer from making a tender offer or otherwise attempting to obtain control of the company.

The significant concentration of stock ownership may also adversely affect the trading price of our common stock due to investors' perception that conflicts of interest may exist or arise.

Anti-takeover provisions in our charter documents could make an acquisition of us more difficult and may prevent attempts by our stockholders to replace or remove our management.

Provisions in our amended and restated certificate of incorporation and in our amended and restated bylaws may delay or prevent an acquisition of us or a change in our management. These provisions include a classified board of directors, a prohibition on actions by written consent of our stockholders from and after the date that Phorm beneficially owns less than a majority of our outstanding shares of common stock, supermajority voting requirements to amend certain provisions of our certificate of incorporation and bylaws from and after the date that Phorm beneficially owns less than a majority of our outstanding shares of common stock, and the ability of our board of directors to issue preferred stock without stockholder approval. Although we believe these provisions collectively will provide for an opportunity to receive higher bids by requiring potential acquirers to negotiate with our board of directors, they would apply even if the offer may be considered beneficial by some stockholders. In addition, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove then-current management by making it more difficult for stockholders to replace members of the board of directors, which is responsible for appointing the members of management. In addition, we have opted out of the provisions of Section 203 of the Delaware General Corporation Law ("DGCL"), which generally prohibit a Delaware corporation from engaging in any of a broad range of business combinations with any interested stockholder for a period of three years following the date on which the stockholder became an interested stockholder. However, our amended and restated certificate of incorporation provides substantially the same limitations as are set forth in Section 203 but also provides that Phorm and its affiliates and any of their direct or indirect transferees and any group as to which such persons are a party do not constitute interested stockholders for purposes of this provision.

Our bylaws designate the Court of Chancery of the State of Delaware as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, and also provide that the federal district courts will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act, each of which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers, employees or agents.

Our bylaws provide that, unless we consent in writing to an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, stockholders, officers or other employees to us or our stockholders, (iii) any action asserting a claim arising pursuant to any provision of the DGCL, our amended and restated certificate of incorporation or our amended and restated bylaws or (iv) any action asserting a claim that is governed by the internal affairs doctrine, in each case subject to the Court of Chancery having personal jurisdiction over the indispensable parties named as defendants therein and the claim not being one which is vested in the exclusive jurisdiction of a court or forum other than the Court of Chancery or for which the Court of Chancery does not have subject matter jurisdiction. Furthermore, our bylaws provide that, unless we consent in writing to an alternative forum, the federal district courts of the United States will be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act.

Any person purchasing or otherwise acquiring any interest in any shares of our common stock shall be deemed to have notice of and to have consented to these provisions of our bylaws. These choice of forum provisions may limit our stockholders' ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers, employees or agents, which may discourage such lawsuits against us and our directors, officers, employees and agents even though an action, if successful, might benefit our stockholders. Stockholders who do bring a claim in the Court of Chancery could face additional litigation costs in pursuing any such claim, particularly if they do not reside in or near Delaware. The Court of Chancery or a federal district court may also reach different judgments or results than would other courts, including courts where a stockholder considering an action may be located or would otherwise choose to bring the action, and such judgments or results may be more favorable to us than to our stockholders. Alternatively, if a court were to find either of these provisions of our bylaws inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or proceedings, we may incur additional costs associated with resolving such matters in other jurisdictions, which could have a material adverse effect on our business, financial condition or results of operations.

We do not intend to pay dividends for the foreseeable future so any returns will be limited to changes in the value of our common stock.

We have never declared nor paid cash dividends on our capital stock. We currently intend to retain any future earnings to finance the operation and expansion of our business, and we do not expect to declare or pay any dividends in the foreseeable future. Any future determination about the payment of dividends will be made at the discretion of our board of directors and will depend upon our results of operations, cash flows and financial condition, operating and capital requirements, contractual restrictions, including any loan or debt financing agreements, and such other factors as our board of directors deems relevant. As a result, stockholders must rely on sales of their common stock after price appreciation as the only way to realize any future gains on their investment, which may never occur.

Item 1B. Unresolved Staff Comments

Not applicable

Item 2. Properties

Our headquarters are located in Goleta, California, where we lease approximately 27,800 square feet of commercial space for research and development, engineering, testing and corporate offices. We also lease additional offices in the United States and internationally in Japan, Hong Kong, Taiwan and the Philippines. We believe that our facilities are suitable to meet our current needs.

Item 3. Legal Proceedings

From time to time, we may become involved in litigation or other legal proceedings. We are not currently a party to any litigation or legal proceedings that, in the opinion of our management, are likely to have a material adverse effect on our business. Regardless of outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

Item 4. Mine Safety Disclosures

Not applicable

Part II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matter and Issuer Purchases of Equity Securities

Market Information for Common Stock

Our common stock commenced trading on the OTC Market Group's OTCQB® Market quotation system under the ticker symbol "TGAN" effective at the market open on July 29, 2020. The following table sets forth, for each of the quarterly periods indicated, the high and low bid prices of our common stock, as reported on the OTCQB. These quotations reflect inter-dealer prices, without retail mark-up, mark-down or commission and may not represent actual transactions.

2020	High	Low
Third quarter (beginning July 29, 2020)	$50.00	$4.50
Fourth quarter	$6.75	$2.30

Holders of Record

As of March 5, 2021, there were 48 holders of record of our common stock.

Dividend Policy

We have not declared or paid any cash dividends on our capital stock since our inception. We intend to retain future earnings, if any, to finance the operation and expansion of our business and do not anticipate paying any cash dividends in the foreseeable future. Payment of future cash dividends, if any, will be at the discretion of our board of directors after taking into account various factors, including our financial condition, operating results, current and anticipated cash needs, the requirements and contractual restrictions of then-existing debt instruments, and other factors that our board of directors deems relevant.

Securities Authorized for Issuance under Equity Compensation Plans

Information about our equity compensation plans is incorporated herein by reference to Part III, Item 12 of this Report.

Recent Sales of Unregistered Securities; Use of Proceeds from Registered Securities

We did not sell any equity securities which were not registered under the Securities Act during the fiscal year ended December 31, 2020 that were not otherwise disclosed in our Quarterly Reports on Form 10-Q or our Current Reports on Form 8-K.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

We did not purchase any shares of our common stock or other securities during the fourth quarter of our fiscal year ended December 31, 2020.

Item 6. Selected Financial Data

As a smaller reporting company, we are not required to provide the information required by this Item.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our historical financial statements and the related notes thereto contained in this Report. Some of the information contained in this discussion and analysis or set forth elsewhere in this Report, including information with respect to our plans and strategy for our business, includes forward-looking statements that involve risks and uncertainties. You should review the sections titled "Special Note Regarding Forward-Looking Statements" and "Risk Factors" for a discussion of forward-looking statements and important factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

Overview

We are a pioneer, and a market and technology leader, in the wide-bandgap GaN power electronics field for high voltage power conversion applications. We deliver high quality and reliable GaN devices with high performance, while providing application design support to a growing customer base. Our GaN devices allow customers to design smaller, lighter and cooler power systems that create increased functional value in end products including smartphone power adapters, smartphone chargers, power supplies for datacenter servers and automotive electric vehicles, among other applications. We deploy our unique vertically integrated innovation model that leverages one of the industry's most experienced GaN engineering teams (with over 300 years of combined experience) at every development stage: device design, materials growth, device fabrication, packaging, circuits and application support. This approach, backed by one of the GaN power industry's largest IP portfolios with access to over 1,000 world-wide patents, has yielded the industry's first automotive-grade AEC-Q101 and JEDEC qualified high voltage GaN FETs. Our innovations are designed to move power electronics beyond the limitations of silicon and provide our customers with the potential to achieve higher efficiency (e.g., titanium-class performance in power supplies), higher power density and, in some designs, an overall lower system cost.

We received our first product order "in volume" (e.g., greater than ten thousand units) for our Gen-2-based TO247 products in January 2018. We introduced our Gen-3 products in June 2018. Also in 2018, we were awarded a contract from the U.S. Navy to become a supplier for GaN epiwafer products for use by the U.S. Department of Defense. In the fourth quarter of 2019, we recognized $9.0 million of licensing revenue through our first outbound licensing deal with Nexperia. In the second quarter of 2020, we recognized $5.0 million of licensing revenue from Nexperia related to Gen-4 technology development.

Since our inception we have devoted substantial resources to the research and development of GaN power devices and the protection and enhancement of our intellectual property and have incurred significant operating losses. Our net loss was $17.9 million and $15.3 million for the years ended December 31, 2020 and 2019, respectively. As of December 31, 2020, our accumulated deficit was $161.8 million. Substantially all of our operating losses have resulted from expenses incurred in connection with research and development activities and from general and administrative costs associated with our operations.

To date, our revenue has been significantly lower than our expenses. Our revenue was $11.4 million, of which $7.1 million was from related parties and $505 thousand was retroactive application since inception due to new government authorized rates, and $11.9 million, of which $9.9 million was from related parties, for the years ended December 31, 2020 and 2019, respectively. For the years ended December 31, 2020 and 2019, Nexperia and the U.S. government each accounted for more than ten percent of our revenues.

Our recurring operating losses and our current operating plans raise substantial doubt about our ability to continue as a going concern for the next twelve months. We expect to continue to incur significant expenses and operating losses for the foreseeable future. We expect our expenses will increase in connection with our ongoing activities as we:

- add sales and field applications personnel and incur related expenses to support operational growth;
- increase activity directly related to promoting our products to increase revenue; and

- add financial accounting and management systems and select personnel and incur additional legal and accounting expense as we operate as a public company.

Reverse Merger

On February 12, 2020, our wholly-owned subsidiary, Peninsula Acquisition Sub, Inc., a corporation formed in the State of Delaware ("Acquisition Sub"), merged with and into Transphorm Technology (formerly known as Transphorm, Inc.), the corporate existence of Acquisition Sub ceased, and Transphorm Technology became our wholly-owned subsidiary (such transaction, the "Merger"). As a result of the Merger, we acquired the business of Transphorm Technology. The Merger was effective as of February 12, 2020, upon the filing of a certificate of merger with the Secretary of State of the State of Delaware. Immediately after completion of the Merger, we adopted Transphorm Technology's former company name, "Transphorm, Inc.", as our company name.

The Merger was treated as a recapitalization and reverse acquisition for us for financial reporting purposes, and Transphorm Technology is considered the acquirer for accounting purposes.

As a result of the Merger and the change in our business and operations, a discussion of the past financial results of Peninsula Acquisition Corporation is not pertinent, and under applicable accounting principles, the historical financial results of Transphorm Technology, the accounting acquirer, prior to the Merger are considered our historical financial results.

At the effective time of the Merger, (i) each share of Transphorm Technology's common stock issued and outstanding immediately prior to the closing of the Merger was converted into the right to receive (a) 0.08289152527 shares of our common stock (in the case of shares held by accredited investors) or (b) $4.00 multiplied by 0.08289152527 (in the case of shares held by unaccredited investors), with the actual number of shares of our common stock issued to the former holders of Transphorm Technology's common stock equal to 4,171,571, (ii) 51,680,254 shares of Transphorm Technology's Series 1 preferred stock issued and outstanding immediately prior to the closing of the Merger were converted into 12,433,953 shares of our common stock, (iii) 38,760,190 shares of Transphorm Technology's Series 2 preferred stock issued and outstanding immediately prior to the closing of the Merger were converted into 7,499,996 shares of our common stock, and (iv) 31,850,304 shares of Transphorm Technology's Series 3 preferred stock issued and outstanding immediately prior to the closing of the Merger were converted into 4,000,000 shares of our common stock. As a result, 28,105,520 shares of our common stock were issued to the former holders of Transphorm Technology's issued and outstanding capital stock after adjustments due to rounding for fractional shares. Immediately prior to the effective time of the Merger, an aggregate of 682,699 shares of our common stock, owned by the stockholders of Peninsula Acquisition Corporation prior to the Merger, were forfeited and cancelled.

In addition, (i) options to purchase 29,703,285 shares of Transphorm Technology's common stock issued and outstanding immediately prior to the closing of the Merger under Transphorm Technology's 2007 Stock Plan and 2015 Equity Incentive Plan were assumed and converted into options to purchase 2,461,923 shares of our common stock, (ii) warrants to purchase 186,535 shares of Transphorm Technology's common stock issued and outstanding immediately prior to the closing of the Merger were assumed, amended and converted into warrants to purchase 15,461 shares of our common stock, and (iii) Transphorm Technology's outstanding convertible promissory note was amended to be convertible, at the option of the holder, into shares of our common stock at a conversion price of $5.12 per share, with 3,076,171 being the maximum number of shares of our common stock issuable upon conversion of the convertible promissory note. As of December 31, 2020, there was $15.0 million of principal and $486 thousand of accrued and unpaid interest outstanding on the convertible promissory note.

All per share and share amounts for the years ended December 31, 2020 and 2019 have been retroactively adjusted to reflect the effect of the Merger.

Private Placements

In February 2020, we sold an aggregate of 5,380,000 shares of common stock in a private placement offering at a purchase price of $4.00 per share, with aggregate gross proceeds of $21.5 million (before deducting placement agent fees and other offering expenses, which were an aggregate of $1.8 million). Offering cost of $177 thousand is included in other assets on the consolidated balance sheet as of December 31, 2019.

In December 2020, we sold an aggregate of 5,000,000 shares of common stock in a private placement at a purchase price of $3.00 per share, with aggregate gross proceeds $15.0 million (before deducting placement agent fees, financial advisor fees and other offering expenses, which were an aggregate of $1.4 million excluding warrant cost of $223 thousand).

Key Factors Affecting Our Performance

There are a number of industry factors that affect our business which include, among others:

Overall Demand for Products and Applications Using GaN Devices. Our potential for growth depends significantly on the adoption of GaN materials and devices in the power markets and GaN epiwafer material products in the RF markets, the expansion of the use of GaN devices in infrastructure, IT, datacenter, industrial, automotive and consumer applications such as fast charger/adapter and gaming power supplies, and our ability to win new designs for these applications. Demand also fluctuates based on various market cycles, continuously evolving industry supply chains, trade and tariff terms, as well as evolving competitive dynamics in each of the respective markets. These uncertainties make demand difficult to forecast for us and our customers. The COVID-19 pandemic has adversely disrupted and will further disrupt the operations at certain of our customers, partners, suppliers and other third-party providers for an uncertain period of time, including as a result of travel restrictions, adverse effects on budget planning processes, business deterioration, and/or business shutdowns, all of which has impacted our business and results of operations. Some of our customers have experienced delays in their internal development programs and design cycles with our GaN products due to the effects of the COVID-19 pandemic, which have led to postponements of their orders of our products and postponements of determinations that our products will be used in their designs for new products under development with corresponding delays in their market introduction and potentially our revenues. Our billings under our contract with the U.S. Navy may be lower than originally expected as a result of the pandemic.

Intense and Constantly Evolving Competitive Environment. Competition in the industries we serve is intense. Many companies have made significant investments in product development and production equipment. To remain competitive, market participants must continuously increase product performance, reduce costs and develop improved ways to serve their customers. To address these competitive pressures, we have invested in research and development activities to support new product development, lower product costs and deliver higher levels of performance to differentiate our products in the market.

Governmental Trade and Regulatory Conditions. Our potential for growth, as with most multinational companies, depends on a balanced and stable trade, political, economic and regulatory environment among the countries where we do business. Changes in trade policy such as the imposition of tariffs or export bans to specific customers or countries could reduce or limit demand for our products in certain markets.

Technological Innovation and Advancement. Innovations and advancements in materials and power technologies continue to expand the potential commercial application for our products. However, new technologies or standards could emerge or improvements could be made in existing technologies that could reduce or limit the demand for our products in certain markets.

Intellectual Property Issues. We rely on patented and non-patented proprietary information relating to product development, manufacturing capabilities and other core competencies of our business. Protection of intellectual property is critical. Therefore, steps such as additional patent applications, confidentiality and non-disclosure agreements, as well as other security measures are important. While we have a strong patent portfolio comprising access to over 1,000 worldwide patents (directly owned or licensed) and there is no actual or, to our knowledge, threatened litigation against us for patent-related matters, litigation or threatened litigation is a common method to effectively enforce or protect intellectual property rights. Such action may be initiated by or against us and would require significant management time and expenses.

Components of Results of Operations

Revenue

Our revenue currently consists of (1) licensing revenue, (2) revenue from our contract with the U.S. Navy and (3) revenue from product sales. Products are sold to distributors and end-users in various sectors such as, but not limited to, the automotive, gaming, industrial, IT, and consumer products industries.

Operating Expenses

Cost of Goods Sold. Cost of goods sold consists of (1) direct product costs incurred for the raw materials and manufacturing services for our products, (2) fixed product costs primarily relating to production, manufacturing and personnel and (3) depreciation and amortization expenses consisting primarily of expenses related to our fixed assets together with amortization of our intangible assets. We expect our cost of goods sold attributable to direct product costs to increase proportionately with increases in revenue, and our cost of goods sold attributable to fixed product costs to remain substantially flat or moderately increase in connection with increases in revenue.

Research and Development. Research and development expenses consist primarily of compensation and related costs for personnel, including stock-based compensation and employee benefits as well as costs associated with design, fabrication, packaging and testing of GaN devices. In addition, research and development expenses include depreciation expenses related to our fixed assets. We expense research and development expenses as incurred. As we continue to invest in developing our technology for new products, we expect research and development expenses to remain flat or moderately increase in absolute dollars but to decline as a percentage of revenue.

Sales and Marketing. Sales and marketing expenses consist primarily of compensation and related costs for personnel, including stock-based compensation and employee benefits, and associated travel costs. Sales and marketing expenses also include costs associated with our support of business development efforts with distributors in Europe and Asia, and costs related to trade shows and marketing programs. We expense sales and marketing expenses as incurred. We expect sales and marketing expenses to increase in absolute dollars in future periods as we increase our sales and expand our sales force and our marketing organization.

General and Administrative. General and administrative expenses consist primarily of compensation and related costs for personnel, including stock-based compensation, employee benefits and travel. In addition, general and administrative expenses include third-party consulting, legal, audit, accounting services, allocations of overhead costs, such as rent, facilities and information technology, and amortization of our intangible assets. We expect general and administrative expenses to increase in absolute dollars in future periods due to additional legal, accounting, insurance, investor relations and other costs associated with being a public company, as well as other costs associated with growing our business.

Interest Expense

Interest expense consists primarily of interest and amortization of related costs associated with our debts with Nexperia and Yaskawa, respectively.

Equity Loss in Joint Venture

Equity loss in joint venture consists of expenditures to cover the losses associated with our 49% share ownership of AFSW. The potential magnitude of this loss may increase or decrease in the future based upon changes in our shareholding percentage in AFSW and the level of operating expenses incurred by AFSW.

Changes in Fair Value of Promissory Note

Changes in the fair value of promissory note reflect valuation changes in the notes held by the Company. Offering costs are expensed as incurred.

Other Income, Net

Other income, net of other expenses, consists primarily of income generated from subleasing a portion of our research and development facility located in California.

Tax Expense

Tax expense consists primarily of income taxes in certain foreign and state jurisdictions in which we conduct business.

Results of Operations

The following table sets forth our historical consolidated statements of operations data for the periods indicated *(in thousands, except percentages)*:

	Year Ended December 31,		Change	
	2020	2019	Amount	Percentage
Revenue, net	$ 11,371	$ 11,934	$ (563)	(4.7) %
Operating expenses:				
Cost of goods sold	6,682	6,492	190	2.9 %
Research and development	5,584	8,146	(2,562)	(31.5) %
Sales and marketing	2,174	2,609	(435)	(16.7) %
General and administrative	10,328	6,606	3,722	56.3 %
Total operating expenses	24,768	23,853	915	3.8 %
Loss from operations	(13,397)	(11,919)	(1,478)	12.4 %
Interest expense	760	758	2	0.3 %
Loss in joint venture	6,836	3,703	3,133	84.6 %
Changes in fair value of promissory note	(927)	167	(1,094)	(655.1) %
Other income, net	(2,157)	(1,264)	(893)	70.6 %
Loss before tax expense	(17,909)	(15,283)	(2,626)	17.2 %
Tax expense	—	—	—	— %
Net loss	**$ (17,909)**	**$ (15,283)**	**$ (2,626)**	**17.2 %**

Revenue decreased $563 thousand, or 4.7 percent, to $11.4 million for the year ended December 31, 2020 from $11.9 million for the same period in 2019. The decrease is due primarily to a $3.1 million decrease in licensing revenue from Nexperia related to funding Gen-4 technology development, offset by (i) a $1.7 million increase in revenue from our contract with the U.S. Navy, (ii) a $505 thousand increase in product sales and (iii) a $333 thousand increase in revenue provided by Yaskawa per a cooperation and development agreement.

Operating expenses increased $915 thousand, or 3.8 percent, to $24.8 million for the year ended December 31, 2020 from $23.9 million for the same period in 2019, due primarily to a $3.7 million increase in general and administrative expense, offset by a $2.6 million decrease in research and development expense.

Cost of goods sold increased $190 thousand, or 2.9 percent, to $6.7 million for the year ended December 31, 2020 compared with $6.5 million for the same period in 2019 due primarily to an increased government contract cost.

Research and development expense decreased $2.6 million, or 31.5 percent, to $5.6 million for the year ended December 31, 2020 from $8.1 million for the same period in 2019, due primarily to (i) a $1.7 million increase in government contract costs that wererecognized in cost of goods sold that were previously classified as research and development and (ii) a $426 thousand increase in reimbursed expenses.

Sales and marketing expense decreased $435 thousand, or 16.7 percent, to $2.2 million for the year ended December 31, 2020 from $2.6 million for the same period in 2019, due primarily to a decrease in costs related to salaries and employee benefits resulting from a reduced number of employees and a decrease in travel costs due to COVID-19 related travel restrictions.

General and administrative expense increased $3.7 million, or 56.3 percent, to $10.3 million for the year ended December 31, 2020 from $6.6 million for the same period in 2019, due primarily to an increase in legal and compliance costs related to the Merger and the private placements and an increase in legal, compliance and insurance costs related to the requirements of being a public company.

Interest expense of $760 thousand for the year ended December 31, 2020 consists of $610 thousand for our revolving credit facility with Nexperia and $150 thousand for our note payable to Yaskawa. Interest expense of $758 thousand for the year ended December 31, 2019 consists of $608 thousand for our revolving credit facility and $150 thousand for our note payable to Yaskawa.

Loss in joint venture increased $3.1 million, or 84.6 percent, to $6.8 million for the year ended December 31, 2020 from $3.7 million for the same period in 2019, due primarily to larger loss shares resulting from increased losses due to the decreased utilization of the AFSW fabrication facility.

Changes in fair value of promissory note were a $927 thousand income and a $167 thousand loss for the years ended December 31, 2020 and 2019, respectively.

Other income, net of other expenses, increased $893 thousand, or 70.6 percent, to $2.2 million for the year ended December 31, 2020 from $1.3 million for the same period in 2019, due primarily to a $888 thousand increase in subleasing a portion of our research and development facility.

Net loss increased $2.6 million, or 17.2 percent, to $17.9 million for the year ended December 31, 2020 from $15.3 million for the same period in 2019. The increase was attributable primarily to a $3.7 million increase in general and administrative expense and a $3.1 million increase in loss in joint venture, offset by a $2.6 million decrease in research and development expense, a $893 thousand increase in other income, net and $1.1 million positive change in fair value of promissory note.

Liquidity and Capital Resources

As of December 31, 2020, we had cash on hand of $14.7 million, other current assets of $3.5 million and current liabilities of $26.7 million, resulting in negative working capital of $8.5 million. As of December 31, 2020, the negative working capital included development loans of $10.0 million and an outstanding balance under our revolving credit facility, including accrued interest, of $10.2 million.

The accompanying consolidated financial statements have been prepared assuming that we will continue as a going concern. As included in the accompanying consolidated financial statements, we have generated recurring losses from operations and have an accumulated deficit and a working capital deficiency. These factors raise substantial doubt about the Company's ability to continue as a going concern for the next twelve months from the issuance of the consolidated financial statements.

Future Funding Requirements

We plan to raise additional working capital to fund operations through the issuance of stock to investors, license of intellectual property and/or issuance of notes payable. In February 2020, we sold an aggregate of 5,380,000 shares of our common stock at a purchase price of $4.00 per share in a private placement. In December 2020, we sold an aggregate of 5,000,000 shares of our common stock at a purchase price of $3.00 per share in a private placement. We believe that our existing cash and cash equivalents will be sufficient to fund our current operating plans into the fourth quarter of 2021.

Our ability to continue as a going concern is dependent on our ability to raise significant additional capital to fund operating losses until we are able to generate liquidity from our business operations, as well as other factors such as developments regarding AFSW. To the extent sufficient financing is not available, we may not be able to develop, or may be delayed in developing, our offerings and meeting our obligations, and we may not be able to continue our operations. We will continue to evaluate our projected expenditures relative to our available cash and evaluate financing alternatives in order to satisfy our working capital and other cash requirements.

Our principal sources of liquidity have been cash generated by issuing new shares and promissory notes and, more recently, cash generated from operations.

On April 4, 2018, we entered into a multi-element commercial arrangement with Nexperia in order to raise an aggregate of $50.0 million in financing with approximately 9.9% equity dilution (on a fully diluted basis) in exchange for performing certain technology and product development activities for Nexperia. The commercial arrangement includes the LSA with Nexperia, which provides for term loans in an aggregate principal amount of up to $15.0 million and an additional $9.0 million loan commitment. During 2018, as a result of the arrangement with Nexperia, we received $29.0 million, consisting of $16.0 million, $10.0 million and $3.0 million from issuing convertible preferred stock, borrowings under a revolving credit facility and recording deferred revenue of license fee, respectively. During 2019, we received the remaining $21.0 million, consisting of $15.0 million from borrowings under the LSA and $6.0 million in licensing revenue. See Note 3 - Nexperia Arrangement to our condensed consolidated financial statements for more information.

Our future capital requirements will depend on many factors including our revenue growth rate, billing frequency, the impact of the COVID-19 pandemic, the timing and extent of spending to support further sales and marketing and research and development efforts, whether we are able to extend the maturity date of loans under the LSA with Nexperia, whether Yaskawa will elect to convert its convertible promissory note into our common stock in lieu of repayment and our obligations in connection with AFSW. If we were to become the sole owner of AFSW (assuming regulatory approvals are obtained) our operating expenses and cash requirements would substantially increase, including as a result of our agreement to use our best efforts to maintain and continue the operations of AFSW for at least one year following the date on which we (alone or with a third party) take over full ownership of AFSW. In addition, the future impact of the COVID-19 pandemic cannot be predicted with certainty and may make it more difficult or preclude us from raising additional capital, increase our costs of capital and otherwise adversely affect our business, results of operations, financial condition and liquidity. We may in the future enter into arrangements to acquire or invest in complementary businesses, services and technologies, including intellectual property rights. We will require additional equity or debt financing, which we may not be able to raise on terms acceptable to us or at all. If we are unable to raise additional capital when required, our business, results of operations and financial condition would be materially and adversely affected, or we may need to cease operations altogether.

Cash Flows

As of December 31, 2020, our cash and cash equivalents were $14.7 million. The following table shows a summary of our cash flows for the periods presented *(in thousands)*:

	Year Ended December 31,		
	2020	2019	Change
Net cash (used in) provided by:			
Operating activities	$ (14,115)	$ (12,290)	$ (1,825)
Investing activities	(7,406)	(2,901)	(4,505)
Financing activities	33,158	15,000	18,158
Increase (decrease) in cash and cash equivalents excluding effect of foreign exchange rate changes	**$ 11,637**	**$ (191)**	**$ 11,828**

Operating Activities

Net cash used in operating activities was $14.1 million and $12.3 million for the years ended December 31, 2020 and 2019, respectively. The decrease of $1.8 million was attributable primarily to a $5.0 million decrease in non-cash licensing revenue from a related party, a $2.6 million decrease in net loss and a $1.1 million decrease in non-cash change in fair value of promissory note, offset by a $3.7 million increase in deferred revenue and a $3.1 million increase in loss in joint venture.

Investing Activities

Net cash used in investing activities was $7.4 million and $2.9 million for the years ended December 31, 2020 and 2019, respectively. The decrease of $4.5 million was attributable primarily to a $4.7 million decrease in investment in joint venture.

Financing Activities

Net cash provided by financing activities was $33.2 million and $15.0 million for the years ended December 31, 2020 and 2019, respectively. Net cash provided by financing activities during the year ended December 31, 2020 relates to aggregate net proceeds of $33.4 million from the closings of private placements. Net cash provided by financing activities during the year ended December 31, 2019 relates to net proceeds of $15.0 million from our development loan with Nexperia.

Nexperia Loan and Security Agreement

On April 4, 2018, we entered into the LSA with Nexperia. The LSA provides for term loans in an aggregate principal amount of up to $15.0 million, which term loans are available in tranches (Tranche A, Tranche B and Tranche B-1) and subject to the satisfaction of specified conditions. As of December 31, 2019, $15.0 million aggregate principal amount of term loans were outstanding under the LSA. The LSA also provides for a $10.0 million Tranche C Loan commitment, which Tranche C Loans may be borrowed, repaid and reborrowed subject to the terms and conditions of the LSA. As of December 31, 2019, $10.0 million aggregate principal amount of Tranche C Loans were outstanding under the LSA. The proceeds of the loans under the LSA may be used as set forth therein for development work related to the DLA, the repayment of specified debt and for general corporate purposes.

The Tranche A Loan was scheduled to mature on the earlier of the date a specified report is required to be delivered under the DLA or March 31, 2020, which was subsequently extended to June 30, 2020. In June 2020, the $5.0 million Tranche A Loan was satisfied in full upon transfer of our Gen-4 technology development to Nexperia, at which point we recognized $5.0 million as licensing revenue. The Tranche B Loan and Tranche B-1 Loan mature on the earlier of the date a specified report is required to be delivered under the DLA or March 31, 2021, subject to extension as provided in the LSA. The Tranche C commitments terminate, and the Tranche C Loans mature, on April 4, 2021.

Loans under the LSA bear interest at the rate of 6.0% per annum. Interest is payable quarterly, on the date of any prepayment or repayment and on each maturity date for the loans then maturing. A commitment fee on the unused portion of the Tranche C loan commitment accrues at the rate of 0.7% per annum and is payable quarterly.

Our obligations under the LSA are secured by a security interest on certain U.S. patents, which patents do not relate to our MOCVD or epiwafer technology.

The LSA contains customary affirmative covenants, including delivery of financial statements, compliance with laws, and maintenance of insurance and properties, and certain negative covenants, including restrictions on liens on the collateral and restrictions on the disposition and licensing of any patent constituting collateral under the LSA. We obtained a waiver for a non-financial covenant violation in June 2019 in connection with the delivery of our 2018 audited financial statements. The LSA also contains customary events of default including, among others, payment defaults, breaches of covenants defaults, the occurrence of a material adverse change, bankruptcy and insolvency defaults, cross defaults with certain material indebtedness, judgment defaults, and the occurrence of a change of control. In addition, an event of default will occur if the DLA is terminated under certain circumstances or we fail to timely deliver reports related to statements of work under the DLA. Upon the occurrence and during the continuance an event of default, Nexperia may declare all or a portion of our outstanding obligations to be immediately due and payable and exercise other rights and remedies provided for under the LSA. If specified events of default occur and remain continuing for more than 30 consecutive days, we are required to assign the patents constituting collateral to Nexperia in satisfaction of our obligations under the LSA. During the existence of an event of default, interest on the obligations could be increased to 3.0% above the otherwise applicable interest rate.

Contractual Obligations and Commitments

The following is a summary of our significant contractual obligations as of December 31, 2020 *(in thousands)*:

	Payments Due by Period				
	Less Than One Year	**One To Three Years**	**Three to Five Years**	**More Than Five Years**	**Total**
Operating lease obligation	$ 751	$ 645	$ 120	$ —	$ 1,516
Development loans	10,000	—	—	—	10,000
Revolving credit facility	10,153	—	—	—	10,153
Promissory note (1)	—	15,748	—	—	15,748
Total	**$ 20,904**	**$ 16,393**	**$ 120**	**$ —**	**$ 37,417**

(1) Consists of aggregate principal amount of $15.0 million of the convertible promissory note issued to Yaskawa.

Off-Balance Sheet Transactions

We have not entered into any off-balance sheet arrangements and do not have any holdings in variable interest entities.

Critical Accounting Policies and Estimates

Our consolidated financial statements and the related notes thereto included in this prospectus were prepared in accordance with Accounting Principles Generally Accepted in the United States (“GAAP”). The preparation of consolidated financial statements also requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue, costs and expenses, and related disclosures. These estimates are developed based on historical experience and various other assumptions that we believe to be reasonable under the circumstances. Actual results could differ significantly from the estimates made by management. To the extent that there are differences between our estimates and actual results, our future financial statement presentation, financial condition, results of operation, and cash flows will be affected. We believe that the accounting policies described below involve a greater degree of judgment and complexity. Accordingly, these are the policies we believe are most critical to aid in fully understanding and evaluating our consolidated financial condition and results of operations.

Principles of Consolidation

The consolidated financial statements include the accounts of Transphorm, Inc. and its direct and indirect wholly owned subsidiaries, Transphorm Technology, Inc., Transphorm Japan, Inc., Transphorm Japan Epi, Inc. and Transphorm Aizu, Inc. Upon consolidation, all significant intercompany accounts and transactions have been eliminated.

Use of Estimates

The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Management bases its estimates and assumptions on historical experience, knowledge of current conditions, and its belief of what could occur in the future, given available information. Actual results could differ from those estimates, and such differences could be material to the consolidated financial statements. Estimates are used for, but not limited to, the determinations of fair value of stock awards and promissory notes, accrual of liabilities, revenue recognition, inventory reserve, and useful lives for property and equipment.

Comprehensive Loss

Comprehensive loss is comprised of net loss and other comprehensive income (loss). Other comprehensive income (loss) includes the impact of foreign currency translation adjustments.

Accounts Receivable

Accounts receivable are analyzed and allowances for uncollectible accounts are recorded, as required. Provisions for uncollectible accounts, if any, are recorded as bad debt expense and included in general and administrative expenses in the accompanying consolidated statements of operations. The process for determining the appropriate level of allowances for doubtful accounts involves judgment, and considers such factors as the age of the underlying receivables, historical and projected collection trends, the composition of outstanding receivables, current economic conditions and regulatory changes. An account is fully reserved when reasonable collection efforts have been unsuccessful and it is probable that the receivable will not be recovered.

Inventory

Inventories are stated at the lower of cost (first-in, first-out method) or net realizable value. We periodically review the value of items in inventory and records write-downs or write-offs based on its assessment of slow moving or obsolete inventory. We maintain an inventory reserve for obsolete inventory and generally makes inventory value adjustments against the inventory reserve.

Property and Equipment

Property and equipment are stated at cost, net of accumulated depreciation and amortization. Depreciation is determined using the straight-line method over the estimated useful lives of the respective assets, generally ranging from three to seven years. Leasehold improvements are amortized on a straight-line basis over the shorter of their estimated useful lives or the related lease term. Depreciation for equipment commences once it is placed in service, and depreciation for buildings and leasehold improvements commences once they are ready for their intended use. We expense maintenance and repair costs that do not extend the life of the asset as they are incurred.

We evaluate the carrying amount of our property and equipment whenever events or changes in circumstances indicate that the assets may not be recoverable. An impairment loss would be recognized when estimated future cash flows expected to result from the use of an asset or asset group and its eventual disposition is less than the carrying amount of the asset or asset group. To date, there have been no such impairment losses.

Goodwill

Goodwill arose for the acquisition of a business in February 2014 based in Japan and was accounted for as the purchase of a business. Goodwill generated from business combinations and deemed to have indefinite lives are not subject to amortization and instead are tested for impairment at least annually in December unless certain events occur or circumstances change. Goodwill represents the excess of the purchase price over the fair value of the net assets and other identifiable intangible assets acquired. We test for goodwill impairment annually or earlier if events or changes in circumstances indicate goodwill might possibly be impaired. Impairment exists when the carrying value of the goodwill exceeds its implied fair value. An impairment loss would be recognized in an amount equal to that excess as a charge to operations in the consolidated statements of operations.

Intangible Assets

Intangible assets that are not considered to have an indefinite useful life are amortized over their estimated useful lives, which generally range from three to ten years. Each reporting period, we evaluate the estimated remaining useful lives of intangible assets and whether events or changes in circumstances warrant a revision to the remaining periods of amortization.

If we determine that the carrying values might not be recoverable based upon the existence of one or more indicators of impairment, we perform a test for recoverability using various methodologies, such as the income approach or cost approach, to determine the fair value of intangible assets depending upon the nature of the assets. If assets are considered to be impaired, the impairment to be recognized is measured as the amount by which the carrying amount of the assets exceeds their respective fair values.

Revenue Recognition

We derive our revenues from sales of high-powered GaN-based products manufactured utilizing our proprietary and patented epiwafer technology and wafer fabrication and other assembly processes, and sales of GaN epiwafers for the RF and power markets, as well as sales of licenses to use such patented proprietary technology. We recognize revenues when control of these products or licenses are transferred to our customers in an amount that reflects the consideration we expect to be entitled to in exchange for those products and licenses. Sales and other taxes we collect concurrent with revenue-producing activities are excluded from revenue and recognized as a liability until paid. Incidental items that are immaterial in the context of the contract are recognized as expense. We do not have any significant financing components associated with our revenue contracts, as payment is received at or shortly after the point of sale.

Disaggregation of Revenue from Contracts with Customers

Revenue for the years ended December 31, 2020 and 2019 consists of licensing revenue, government contract revenue from our contract with the U.S. Navy and product sales, with such performance obligation satisfied at a point in time. Products are sold to distributors and end-users in various sectors such as, but not limited to, the automotive, gaming, industrial, IT, and consumer products industries.

As part of the agreements executed with Nexperia on April 4, 2018, we agreed to grant Nexperia the perpetual exclusive right to use our existing Gen 3 manufacturing process technology. License fees are received upon satisfaction of contractual milestones and recognized upon delivery of the perpetual license or transferred technology without any remaining performance obligations. For the year ended December 31, 2020, we recognized $5.0 million of licensing revenue. For the year ended December 31, 2019, we received the remaining $6.0 million and recognized a total of $9.0 million, including $3.0 million received in 2018, as licensing revenue upon satisfaction of contractual milestones and delivery of the perpetual license and transferred technology without any remaining performance obligations.

In December 2020, we entered into a cooperation and development agreement with Yaskawa, pursuant to which Yaskawa agreed to provide $4.0 million over approximately three years to fund development activities related to industrial power conversion applications, with an initial focus on servo motor drive applications. Yaskawa provided $1.0 million of this $4.0 million commitment in December 2020. The Company evaluated and concluded that the deliverables are the same and nature of the services to be provided to Yaskawa will be consistent over the period of approximately three years. Accordingly, the Company recognized $333 thousand as revenue during the year ended December 31, 2020. As of December 31, 2020, $667 thousand is included in deferred revenue on the consolidated balance sheet.

Government contract revenues are principally generated under research and development contracts. Contract revenues are derived primarily from research contracts with agencies of the United States Government. We believe credit risk related to accounts receivable arising from such contracts is minimal. These contracts may include cost-plus fixed fee and fixed price terms. All payments to us for work performed on contracts with agencies of the U.S. Government are subject to adjustment upon audit by the Defense Contract Audit Agency.

Performance Obligations

For performance obligations related to the sale of products, control transfers to the customer at a point in time. Our principal terms of sale are free on board shipping or destination and we transfer control and records revenue for product sales upon shipment or delivery to the customer, respectively. For performance obligations related to the licensing for the use of patented technology in perpetuity, control also transfers to the customer at a point in time. We transfer control and record revenue for licensing fees once hawse have (i) provided or otherwise made available the patented technology to the customer and (ii) the customer is able to use and benefit from the patented technology.

Variable Consideration

The nature of our arrangement with Nexperia gives rise to variable consideration in the form of milestone and royalty payments. The royalties qualify for the sales and usage-based royalty exception, as the license of intellectual property is the predominant item to which the royalty relates and are recognized upon the subsequent sale occurring. The variable amounts are received upon satisfaction of contractually agreed upon development targets and sales volume.

Research and Development

We are a party to research grant contracts with the U.S. federal government for which we are reimbursed for specified costs incurred for our research projects. These projects include energy saving initiatives for which the U.S. federal government offers reimbursement funds. Such reimbursements are recorded as an offset to research and development expenses when the related qualified research and development expenses are incurred. Reimbursable costs are recognized in the same period the costs are incurred up to the limit of approved funding amounts on qualified expenses. Grant reimbursement of $426 thousand and $0 was recorded as an offset to research and development expense for the years ended December 31, 2020 and 2019, respectively.

Stock-Based Compensation

All share-based payments, including grants of stock options, are measured based on the fair value of the share-based awards at the grant date and recognized over their respective vesting periods, which is generally four years. The estimated fair value of stock options at the grant date is determined using the Black-Scholes-Merton pricing model. We recognize the fair value of share-based payments as compensation expense for all expected-to-vest stock-based awards over the vesting period of the award using the straight-line attribution method provided that the amount of compensation cost recognized at any date is no less than the portion of the grant-date fair value of the award that is vested at that date.

The Black-Scholes-Merton option pricing model requires inputs such as the fair value of common stock on date of grant, expected term, expected volatility, dividend yield, and risk-free interest rate. Further, the forfeiture rate also affects the amount of aggregate compensation expense. These inputs are subjective and generally require significant analysis and judgment to develop. Volatility data is obtained from a study of publicly traded industry peer companies. The forfeiture rate is derived primarily from our historical data, and the risk-free interest rate is based on the yield available on U.S. Treasury zero-coupon issues commensurate with the expected term. Management generally uses the simplified method to calculate the expected term for employee grants as we have limited historical exercise data or alternative information to reasonably estimate an expected term assumption. The simplified method assumes that all options will be exercised midway between the weighted average vesting date and the contractual term of the option.

Stock-based compensation expense recognized in our consolidated financial statements is based on awards that are expected to vest. These expense amounts have been reduced by using an estimated forfeiture rate. Forfeitures are estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates. We evaluate the assumptions used to estimate forfeitures annually in connection with recognition of stock-based compensation expense.

Loss Per Share

Basic loss per share is calculated by dividing net loss applicable to common stockholders by the weighted average number of common shares outstanding during the period. Diluted earnings per share is calculated by dividing the net income attributable to common stockholders by the sum of the weighted average number of common shares outstanding plus potential dilutive common shares outstanding during the period. Potential dilutive securities, comprised of the convertible preferred stock, stock warrants and stock options, are not reflected in diluted net loss per share because such shares are anti–dilutive. Dilutive impact of potential common shares resulting from common stock equivalents is determined by applying the treasury stock method.

Fair Value Measurement

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The carrying values of our financial instruments such as cash equivalents, accounts receivable, revolving credit facility, accounts payable and accrued liabilities approximate fair values due to the short-term nature of these items. We have elected the fair value option for our promissory notes. See Note 4 - Fair Value Measurements in the financial statements.

Income Taxes

We account for income taxes in accordance with Accounting Standards Codification (“ASC”) 740, Income Taxes (“ASC 740”). ASC 740 prescribes the use of the liability method. Deferred tax assets and liabilities are determined based on the difference between the financial statement carrying amounts and the tax basis of assets and liabilities and are measured using the enacted statutory tax rates in effect at the balance sheet date. We record a valuation allowance to reduce our deferred tax assets when uncertainty regarding their realizability exists.

Equity Method Investments

We use the equity method to account for investments in entities that we do not control, but in which we have the ability to exercise significant influence over operating and financial policies. Our proportionate share of the net income or loss of these companies is included in consolidated net earnings. Judgments regarding the level of influence over each equity method investment include consideration of key factors such as our ownership interest, representation on the board of directors or other management body and participation in policy-making decisions.

Segment Reporting

Our operations and financial performance is evaluated on a consolidated basis by our chief operating decision maker. Accordingly, we consider all of our operations to be aggregated in one reportable operating segment. For the year ended December 31, 2020, total revenue was $11.4 million, of which $10.7 million was from U.S. operations and $713 thousand was from Japan operations. For the year ended December 31, 2019, total revenue was $11.9 million, of which $11.9 million was from U.S. operations and $28 thousand was from Japan operations.

JOBS Act Accounting Election

We are an emerging growth company, as defined in the JOBS Act. The JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This provision allows an emerging growth company to either early adopt or delay the adoption of some accounting standards until those standards would otherwise apply to private companies. We have elected to use the extended transition period under the JOBS Act until the earlier of the date we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, our financial statements may not be comparable to companies that comply with new or revised accounting pronouncements as of public company effective dates.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

As a “smaller reporting company”, we are not required to provide the information required by this Item.

Item 8. Financial Statements and Supplementary Data

Transphorm, Inc.

Index to Consolidated Financial Statements

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors of
Transphorm, Inc.

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Transphorm, Inc. (the “Company”) as of December 31, 2020 and 2019, the related consolidated statements of operations, comprehensive loss, stockholders’ deficit and cash flows for each of the years in the two year period ended December 31, 2020, and the related notes (collectively referred to as the “financial statements”). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the years in the two year period ended December 31, 2020, in conformity with accounting principles generally accepted in the United States of America.

Explanatory Paragraph – Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As more fully described in Note 1, the Company has a significant working capital deficit, incurred significant losses, sustained significant negative cash flows from operations, and needs to raise additional funds to meet its obligations and to sustain its operations. These conditions raise substantial doubt about the Company's ability to continue as a going concern. Management's plans in regards to these matters are also described in Note 1. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Marcum LLP

Marcum LLP

We have served as the Company’s auditor since 2019.

Chicago, IL
March 11, 2021

Transphorm, Inc.
Consolidated Balance Sheets
(in thousands except share and per share data)

	December 31, 2020		December 31, 2019	
Assets				
Current assets:				
Cash and cash equivalents	$	14,694	$	2,875
Accounts receivable, net, including $442 thousand and $464 thousand from related parties as of December 31, 2020 and 2019, respectively		844		709
Inventory		1,627		990
Prepaid expenses and other current assets		1,061		783
Total current assets		18,226		5,357
Property and equipment, net		1,324		1,770
Goodwill		1,397		1,325
Intangible assets, net		988		1,313
Other assets		291		497
Total assets	**$**	**22,226**	**$**	**10,262**
Liabilities, convertible preferred stock and stockholders' deficit				
Current liabilities:				
Accounts payable and accrued expenses	$	3,182	$	2,383
Deferred revenue		674		—
Development loan		10,000		5,000
Revolving credit facility, including accrued interest		10,153		10,458
Unfunded commitment to joint venture		1,466		1,688
Accrued payroll and benefits		1,215		1,159
Total current liabilities		26,690		20,688
Development loans, net of current portion		—		10,000
Promissory note		15,392		16,169
Total liabilities		**42,082**		**46,857**
Commitments and contingencies (Note 11)				
Convertible preferred stock (Notes 1 and 13):				
Series 1, $0.0001 par value; no shares authorized, issued and outstanding as of December 31, 2020; 12,438,704 shares authorized and 12,433,953 shares issued and outstanding as of December 31, 2019		—		39,658
Series 2, $0.0001 par value; no shares authorized, issued and outstanding as of December 31, 2020; 7,507,699 shares authorized and 7,499,996 shares issued and outstanding as of December 31, 2019		—		30,000
Series 3, $0.0001 par value; no shares authorized, issued and outstanding as of December 31, 2020; 4,000,000 shares authorized, issued and outstanding as of December 31, 2019		—		16,000
Total convertible preferred stock		**—**		**85,658**

Stockholders' deficit:		
Common stock, $0.0001 par value; 750,000,000 shares authorized and 40,278,496 shares issued and outstanding as of December 31, 2020; 29,012,034 shares authorized and 4,220,998 shares issued and outstanding as of December 31, 2019	4	—
Additional paid-in capital	142,736	22,404
Accumulated deficit	(161,824)	(143,915)
Accumulated other comprehensive loss	(772)	(742)
Total stockholders' deficit	**(19,856)**	(122,253)
Total liabilities, convertible preferred stock and stockholders' deficit	**$ 22,226**	**$ 10,262**

See accompanying notes to consolidated financial statements

Transphorm, Inc.
Consolidated Statements of Operations
(in thousands except share and per share data)

	Year Ended December 31,	
	2020	2019
Revenue, net, including related parties (Note 17)	$ 11,371	$ 11,934
Operating expenses:		
Cost of goods sold	6,682	6,492
Research and development	5,584	8,146
Sales and marketing	2,174	2,609
General and administrative	10,328	6,606
Total operating expenses	24,768	23,853
Loss from operations	(13,397)	(11,919)
Interest expense	760	758
Loss in joint venture	6,836	3,703
Changes in fair value of promissory note	(927)	167
Other income, net	(2,157)	(1,264)
Loss before tax expense	(17,909)	(15,283)
Tax expense	—	—
Net loss	**$ (17,909)**	**$ (15,283)**
Net loss per share - basic and diluted	$ (0.56)	$ (0.54)
Weighted average common shares outstanding - basic and diluted	31,739,801	28,153,605

See accompanying notes to consolidated financial statements

Transphorm, Inc.
Consolidated Statements of Comprehensive Loss
(in thousands)

	Year Ended December 31,	
	2020	**2019**
Net loss	$ (17,909)	$ (15,283)
Other comprehensive loss, net of tax:		
Foreign currency translation adjustments	(30)	(2)
Other comprehensive loss, net of tax	(30)	(2)
Comprehensive loss	**$ (17,939)**	**$ (15,285)**

See accompanying notes to consolidated financial statements

Transphorm, Inc.
Consolidated Statements of Changes in Stockholders' Deficit
(in thousands except share data)

	Common Stock		Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Stockholders' Deficit
	Number of Shares	Amount				
Balance at January 1, 2019	**4,219,606**	**$ —**	**$ 21,833**	**$ (128,632)**	**$ (740)**	**$ (107,539)**
Stock options exercised	1,392	—	5	—	—	5
Stock-based compensation	—	—	566	—	—	566
Other comprehensive income	—	—	—	—	(2)	(2)
Net loss	—	—	—	(15,283)	—	(15,283)
Balance at December 31, 2019	**4,220,998**	**—**	**22,404**	**(143,915)**	**(742)**	**(122,253)**
Stock options exercised, net of $5 receivable	6,821	—	27	—	—	27
Restricted stock issued	139,501	—	—	—	—	—
Stock-based compensation	—	—	1,525	—	—	1,525
Conversion of preferred shares in connection with the Reverse Merger	23,933,949	3	85,655	—	—	85,658
Shares redeemed in connection with the Reverse Merger	(52,773)	—	(211)	—	—	(211)
Shares issued in connection with the Reverse Merger	1,650,000	—	(50)	—	—	(50)
Issuance of common stock, net of $3.1 million offering cost excluding warrant cost of $223 thousand	10,380,000	1	33,386	—	—	33,387
Other comprehensive loss	—	—	—	—	(30)	(30)
Net loss	—	—	—	(17,909)	—	(17,909)
Balance at December 31, 2020	**40,278,496**	**$ 4**	**$ 142,736**	**$ (161,824)**	**$ (772)**	**$ (19,856)**

See accompanying notes to consolidated financial statements

Transphorm, Inc.
Consolidated Statements of Cash Flows
(in thousands)

	Year Ended December 31, 2020		2019	
Cash flows from operating activities:				
Net loss	$	(17,909)	$	(15,283)
Adjustments to reconcile net loss to net cash used in operating activities:				
Inventory write-off		435		155
Depreciation and amortization		835		1,216
Provision for doubtful accounts		110		—
Licensing revenue from a related party		(5,000)		—
Stock-based compensation		1,525		566
Interest cost		760		608
Loss in joint venture		6,836		3,703
Changes in fair value of promissory note		(927)		167
Changes in operating assets and liabilities:				
Accounts receivable		(245)		(429)
Inventory		(1,072)		(293)
Prepaid expenses and other current assets		(283)		(154)
Other assets		206		(42)
Accounts payable and accrued expenses		(116)		509
Deferred revenue		674		(3,000)
Accrued payroll and benefits		56		(13)
Net cash used in operating activities		**(14,115)**		**(12,290)**
Cash flows from investing activities:				
Purchases of property and equipment		(58)		(203)
Investment in joint venture		(7,348)		(2,698)
Net cash used in investing activities		**(7,406)**		**(2,901)**
Cash flows from financing activities:				
Proceeds from development loans		—		15,000
Proceeds from stock option exercise		32		—
Payment for repurchase of common stock		(211)		—
Loan repayment		(50)		—
Proceeds from issuance of common stock, net of $3.1 million offering cost		33,387		—
Net cash provided by financing activities		**33,158**		**15,000**
Effect of foreign exchange rate changes on cash and cash equivalents		**182**		**(3)**
Net increase (decrease) in cash and cash equivalents		**11,819**		**(194)**
Cash and cash equivalents at beginning of period		2,875		3,069
Cash and cash equivalents at end of period	**$**	**14,694**	**$**	**2,875**
Supplemental disclosures of cash flow information:				
Interest expense paid	$	915	$	496
Supplemental non-cash financing activity:				
Private placement offering cost	$	223	$	177
Development loan reduction related to licensing revenue	$	5,000	$	—
Conversion of preferred stock to common stock in connection with the Reverse Merger	$	85,658	$	—

See accompanying notes to consolidated financial statements

Transphorm, Inc.

Notes to Consolidated Financial Statements

Note 1 - Business and Basis of Presentation

Transphorm, Inc. (“Parent”) develops gallium nitride (“GaN”) semiconductor components used in power conversion and is headquartered in Goleta, California. Parent’s wholly owned-subsidiary, Transphorm Technology, Inc., was incorporated in the State of Delaware on February 22, 2007. Throughout these notes, “the Company,” “Transphorm,” “we,” “us” and “our” refer to Parent and its direct and indirect wholly-owned subsidiaries. Transphorm Technology and its subsidiaries hold all material assets and conduct all business activities and operations of the Company. Transphorm Technology’s activities to date have been primarily performing research and development, establishing manufacturing infrastructure, market sampling, product launch, hiring personnel, and raising capital to support and expand these activities. Transphorm Japan, Inc. was established in Japan in February 2014 to secure Transphorm’s production capacity and establish a direct presence in Asian markets. Transphorm Aizu, Inc. was established in Japan to manage the financial transactions around Aizu Fujitsu Semiconductor Wafer Solution Limited, Transphorm’s non-controlling joint venture wafer fabrication facility located in Aizu Wakamatsu, Japan (“Aizu”). Transphorm Japan Epi, Inc. was established in Japan in 2019 to enable the operational capacity of the reactors held in Aizu.

Reverse Merger

On February 12, 2020, our wholly-owned subsidiary, Peninsula Acquisition Sub, Inc., a corporation formed in the State of Delaware (“Acquisition Sub”), merged with and into Transphorm Technology (formerly known as Transphorm, Inc.), the corporate existence of Acquisition Sub ceased, and Transphorm Technology became our wholly-owned subsidiary (such transaction, the “Merger”). As a result of the Merger, we acquired the business of Transphorm Technology. The Merger was effective as of February 12, 2020, upon the filing of a certificate of merger with the Secretary of State of the State of Delaware. Immediately after completion of the Merger, we adopted Transphorm Technology’s former company name, “Transphorm, Inc.”, as our company name.

The Merger was treated as a recapitalization and reverse acquisition for financial reporting purposes, and Transphorm Technology is considered the acquirer for accounting purposes.

As a result of the Merger and the change in our business and operations, a discussion of the past financial results of our predecessor, Peninsula Acquisition Corporation, is not pertinent, and under applicable accounting principles, the historical financial results of Transphorm Technology, the accounting acquirer, prior to the Merger are considered our historical financial results.

At the effective time of the Merger, (i) each share of Transphorm Technology’s common stock issued and outstanding immediately prior to the closing of the Merger was converted into the right to receive (a) 0.08289152527 shares of our common stock (in the case of shares held by accredited investors) or (b) $4.00 multiplied by 0.08289152527 (in the case of shares held by unaccredited investors), with the actual number of shares of our common stock issued to the former holders of Transphorm Technology’s common stock equal to 4,171,571, (ii) 51,680,254 shares of Transphorm Technology’s Series 1 preferred stock issued and outstanding immediately prior to the closing of the Merger were converted into 12,433,953 shares of our common stock, (iii) 38,760,190 shares of Transphorm Technology’s Series 2 preferred stock issued and outstanding immediately prior to the closing of the Merger were converted into 7,499,996 shares of our common stock, and (iv) 31,850,304 shares of Transphorm Technology’s Series 3 preferred stock issued and outstanding immediately prior to the closing of the Merger were converted into 4,000,000 shares of our common stock. As a result, 28,105,520 shares of our common stock were issued to the former holders of Transphorm Technology’s issued and outstanding capital stock after adjustments due to rounding for fractional shares. Immediately prior to the effective time of the Merger, an aggregate of 682,699 shares of our common stock, owned by the stockholders of Peninsula Acquisition Corporation prior to the Merger, were forfeited and cancelled.

In addition, pursuant to the Merger Agreement, (i) options to purchase 29,703,285 shares of Transphorm Technology's common stock issued and outstanding immediately prior to the closing of the Merger under Transphorm Technology's 2007 Stock Plan (the "2007 Plan") and 2015 Equity Incentive Plan (the "2015 Plan") were assumed and converted into options to purchase 2,461,923 shares of our common stock, (ii) warrants to purchase 186,535 shares of Transphorm Technology's common stock issued and outstanding immediately prior to the closing of the Merger were assumed, amended and converted into warrants to purchase 15,461 shares of our common stock, and (iii) Transphorm Technology's outstanding convertible promissory note was amended to be convertible at the option of the holder, into shares of our common stock at a conversion price of $5.12 per share, with 3,076,171 being the maximum number of shares of our common stock issuable upon conversion of the convertible promissory note. As of December 31, 2020, there was $15.0 million of principal and $486 thousand of accrued and unpaid interest outstanding on the convertible promissory note.

All per share and share amounts for the year ended December 31, 2019 have been retroactively adjusted to reflect the effect of the Merger.

Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As included in the accompanying consolidated financial statements, the Company has generated recurring losses from operations, sustained negative cash flows from operating activities, and has an accumulated deficit and has a working capital deficiency. These factors raise substantial doubt about the Company's ability to continue as a going concern for the next twelve months from the issuance of these financial statements.

Management plans to raise additional working capital to fund operations through the issuance of stock to investors, license of intellectual property and/or issuance of notes payable. The Company raised $19.7 million and $13.6 million from the sales of common stock in February 2020 and December 2020, respectively, as described in Note 13 - Stockholders' Equity. However, there is no assurance that the Company will be successful in raising additional capital.

The ability of the Company to continue as a going concern is dependent on its ability to raise significant additional capital to fund operating losses until it is able to generate liquidity from its business operations. To the extent sufficient financing is not available, the Company may not be able to, or may be delayed in, developing its offerings and meeting its obligations. The Company will continue to evaluate its projected expenditures relative to its available cash and to evaluate financing alternatives in order to satisfy its working capital and other cash requirements. The accompanying consolidated financial statements do not reflect any adjustments that might result from the outcome of these uncertainties.

Impact of COVID-19 on Our Business

The COVID-19 pandemic has adversely disrupted and will further disrupt the operations at certain of our customers, partners, suppliers and other third-party providers for an uncertain period of time, including as a result of travel restrictions, adverse effects on budget planning processes, business deterioration, and/or business shutdowns, all of which has impacted our business and results of operations. Some of our customers have experienced delays in their internal development programs and design cycles with our GaN products due to the effects of COVID-19, which have led to postponements of their orders of our products and postponements of determinations that our products will be used in their designs for new products under development with corresponding delays in their market introduction and our revenues. The future impact of COVID-19 cannot be predicted with certainty and may make it more difficult or preclude us from raising additional capital, increase our costs of capital and otherwise adversely affect our business, results of operations, financial condition and liquidity.

Note 2 - Summary of Significant Accounting Policies

Principles of Consolidation

The consolidated financial statements include the accounts of the Parent and its wholly-owned subsidiaries, Transphorm Technology, Transphorm Japan, Inc., Transphorm Japan Epi, Inc. and Transphorm Aizu, Inc. Upon consolidation, all significant intercompany accounts and transactions have been eliminated.

Use of Estimates

The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Management bases its estimates and assumptions on historical experience, knowledge of current conditions, and its belief of what could occur in the future, given available information. Actual results could differ from those estimates, and such differences could be material to the consolidated financial statements. Estimates are used for, but not limited to, the determinations of fair value of stock awards and promissory notes, accrual of liabilities, revenue recognition, inventory reserve, and useful lives for property and equipment.

Reclassification of Prior Year Presentation

Certain prior year amounts have been reclassified for consistency with the current year presentation. These reclassifications had no effect on the reported consolidated financial statements.

Cash and Cash Equivalents

The Company considers all highly-liquid investments with original maturities of 90 days or less at the date of purchase to be cash equivalents. Cash and cash equivalents consist principally of bank deposits and money market funds. Other assets in the consolidated balance sheets as of December 31, 2020 and 2019 include restricted cash of $75 thousand.

Foreign Currency Risk

The Company is exposed to foreign currency risk due to its operations in Japan. Assets and liabilities of the operations are re-measured into U.S. currency at exchange rates in effect at the balance sheet dates through the consolidated statements of comprehensive income. Gains or losses resulting from foreign currency transactions are re-measured using the rates on the dates on which those elements are recognized during the period and are included in other income or expense in the consolidated statements of operations. As of December 31, 2020 and 2019, the Company had foreign cash and cash equivalents of $42 thousand and $55 thousand, respectively, which represented 0.3 percent and 1.9 percent, respectively, of total cash and cash equivalents.

Concentrations of Risk

Financial instruments that potentially subject the Company to concentrations of credit risk consist principally of cash and cash equivalents. The Company is exposed to credit risk in the event of default by the financial institution holding its cash. The Company’s investment policy restricts investments to high-quality investments and limits the amounts invested with any one issuer, industry or geographic area. Risks associated with cash holdings in excess of insured limits are mitigated by banking with high-quality institutions. To date, the Company has not experienced any significant losses on its cash and cash equivalents. The Company periodically evaluates the relative credit standing of these financial institutions.

The Company is subject to risks common in the power conversion components industry, including, but not limited to, technological obsolescence, dependence on key personnel, market acceptance of its products, the successful protection of its proprietary technologies, compliance with government regulations, and the possibility of not being able to obtain additional financing when needed.

Comprehensive Loss

Comprehensive loss is comprised of net loss and other comprehensive income (loss). Other comprehensive income (loss) includes the impact of foreign currency translation adjustments.

Accounts Receivable

Accounts receivable are analyzed and allowances for uncollectible accounts are recorded, as required. Provisions for uncollectible accounts, if any, are recorded as bad debt expense and included in general and administrative expenses in the accompanying consolidated statements of operations. The process for determining the appropriate level of allowances for doubtful accounts involves judgment, and the Company considers such factors as the age of the underlying receivables, historical and projected collection trends, the composition of outstanding receivables, current economic conditions and regulatory changes. An account is fully reserved when reasonable collection efforts have been unsuccessful and it is probable that the receivable will not be recovered. Provision for doubtful accounts amounted to $110 thousand and $0 for the years ended December 31, 2020 and 2019, respectively.

Inventory

Inventory is stated at the lower of cost (first-in, first-out method) or net realizable value. The Company periodically reviews the value of items in inventory and records write-downs or write-offs based on its assessment of slow moving or obsolete inventory. The Company maintains an inventory reserve for obsolete inventory and generally makes inventory value adjustments against the inventory reserve.

Property and Equipment

Property and equipment are stated at cost, net of accumulated depreciation and amortization. Depreciation is determined using the straight-line method over the estimated useful lives of the respective assets, generally ranging from three to seven years. Leasehold improvements are amortized on a straight-line basis over the shorter of their estimated useful lives or the related lease term. Depreciation for equipment commences once it is placed in service, and depreciation for buildings and leasehold improvements commences once they are ready for their intended use. The Company expenses maintenance and repair costs that do not extend the life of the asset as they are incurred.

The Company evaluates the carrying amount of its property and equipment whenever events or changes in circumstances indicate that the assets may not be recoverable. An impairment loss would be recognized when estimated future cash flows expected to result from the use of an asset or asset group and its eventual disposition are less than the carrying amount of the asset or asset group. To date, there have been no such impairment losses.

Goodwill

Goodwill arose for the acquisition of a business in February 2014 based in Japan and was accounted for as the purchase of a business. Goodwill generated from business combinations and deemed to have indefinite lives are not subject to amortization and instead are tested for impairment at least annually in December unless certain events occur or circumstances change. Goodwill represents the excess of the purchase price over the fair value of the net assets and other identifiable intangible assets acquired. We test for goodwill impairment annually or earlier if events or changes in circumstances indicate goodwill might possibly be impaired. Impairment exists when the carrying value of the goodwill exceeds its implied fair value. An impairment loss would be recognized in an amount equal to that excess as a charge to operations in the consolidated statements of operations. For the years ended December 31, 2020 and 2019, no impairment charge was recorded related to goodwill.

Intangible Assets

Intangible assets that are not considered to have an indefinite useful life are amortized over their estimated useful lives, which generally range from three to ten years. Each reporting period, the Company evaluates the estimated remaining useful lives of intangible assets and whether events or changes in circumstances warrant a revision to the remaining periods of amortization.

If it is determined that the carrying values might not be recoverable based upon the existence of one or more indicators of impairment, the Company performs a test for recoverability using various methodologies, such as the income approach or cost approach, to determine the fair value of intangible assets depending upon the nature of the assets. If assets are considered to be impaired, the impairment to be recognized is measured as the amount by which the carrying amount of the assets exceeds their respective fair values. For the years ended December 31, 2020 and 2019, no impairment charges were recorded related to intangible assets.

Revenue Recognition

The Company derives its revenues from sales of high-powered GaN-based products manufactured utilizing the Company's proprietary and patented epiwafer technology and wafer fabrication and other assembly processes, sales of GaN epiwafers for the radio frequency ("RF") and power markets, and sales of licenses to use such patented proprietary technology, as well as enabling EPI wafer growth services and products to our strategic partners. Revenues are recognized when control of these products or licenses are transferred to the Company's customers in an amount that reflects the consideration it expects to be entitled to in exchange for those products and licenses. Sales and other taxes the Company collects concurrent with revenue-producing activities are excluded from revenue. Incidental items that are immaterial in the context of the contract are recognized as expense. The Company does not have any significant financing components associated with its revenue contracts, as payment is received at or shortly after the point of sale.

Disaggregation of Revenue from Contracts with Customers

Revenue consists of licensing revenue, government contract revenue from our contract with the U.S. Navy and product sales, with applicable performance obligations satisfied at a point in time. Products are sold to distributors and end-users in various sectors such as, but not limited to, the automotive, gaming, industrial, IT, and consumer products industries.
As part of the Arrangement (Note 3 - Nexperia Arrangement) executed with Nexperia on April 4, 2018, the Company agreed to grant Nexperia the perpetual exclusive right to use the Company's existing Gen-3 manufacturing process technology. License fees are received upon satisfaction of contractual milestones and recognized upon delivery of the perpetual license or transferred technology without any remaining performance obligations. For the year ended December 31, 2020, the Company recognized $5.0 million of licensing revenue. For the year ended December 31, 2019, the Company received the remaining $6.0 million and recognized a total of $9.0 million, including $3.0 million received in 2018, as licensing revenue upon satisfaction of contractual milestones and delivery of the perpetual license and transferred technology without any remaining performance obligations.

In December 2020, we entered into a cooperation and development agreement with Yaskawa, pursuant to which Yaskawa agreed to provide $4.0 million over approximately three years to fund development activities related to industrial power conversion applications, with an initial focus on servo motor drive applications. Yaskawa provided $1.0 million of this $4.0 million commitment in December 2020. The Company evaluated and concluded that the deliverables are the same and nature of the services to be provided to Yaskawa will be consistent over the period of approximately three years. Accordingly, the Company recognized $333 thousand as revenue during the year ended December 31, 2020. As of December 31, 2020, $667 thousand is included in deferred revenue on the consolidated balance sheet.

Government contract revenues are principally generated under research and development contracts. Contract revenues are derived primarily from research contracts with agencies of the U.S. government. We believe credit risk related to accounts receivable arising from such contracts is minimal. These contracts may include cost-plus fixed fee and fixed price terms. All payments to us for work performed on contracts with agencies of the U.S. government are subject to adjustment upon audit by the Defense Contract Audit Agency. The Company received new government authorized rates for billing purposes which allowed for retroactive application since inception. The cumulative impact of this rate change was $505 thousand in the third quarter of 2020. The Company will use the new approved rates on go-forward basis.

Performance Obligations

For performance obligations related to the sale of products, control transfers to the customer at a point in time. The Company's principal terms of sale are free on board shipping or destination and the Company transfers control and records revenue for product sales upon shipment or delivery to the customer, respectively. For performance obligations related to the licensing of patented technology in perpetuity, control also transfers to the customer at a point in time. The Company transfers control and records revenue for licensing fees once the Company has (i) provided or otherwise makes available the patented technology to the customer and (ii) the customer is able to use and benefit from the patented technology.

Variable Consideration

The nature of the Company's arrangement with Nexperia gives rise to variable consideration in the form of milestone and royalty payments. The royalties qualify for the sales and usage-based royalty exception, as the license of intellectual property is the predominant item to which the royalty relates and are recognized upon the subsequent sale occurring. The variable amounts are received upon satisfaction of contractually agreed upon development targets and sales volume.

Research and Development

The Company is a party to research grant contracts with the U.S. government for which the Company is reimbursed for specified costs incurred for its research projects. These projects include energy saving initiatives for which the U.S. government offers reimbursement funds. Such reimbursements are recorded as an offset to research and development expenses when the related qualified research and development expenses are incurred. Reimbursable costs are recognized in the same period the costs are incurred up to the limit of approved funding amounts on qualified expenses. Grant reimbursement of $426 thousand and $0 was recorded as an offset to research and development expense for the years ended December 31, 2020 and 2019, respectively.

Stock-Based Compensation

All share-based payments, including grants of stock options, restricted stock awards ("RSAs") and restricted stock units ("RSUs"), are measured at the fair value of the share-based awards on the grant date and recognized over their respective vesting periods, which is generally one to four years. The estimated fair value of stock options at the grant date is determined using the Black-Scholes-Merton pricing model. The RSAs and RSUs are measured using the estimated fair value of the stock price, which, due to limited trading history, is based on recent equity sales. The Company recognizes the fair value of share-based payments as compensation expense for all expected-to-vest stock-based awards over the vesting period of the award using the straight-line attribution or graded vesting method provided that the amount of compensation cost recognized at any date is no less than the portion of the grant-date fair value of the award that is vested at that date.

The Black-Scholes-Merton option pricing model requires inputs such as the fair value of common stock on date of grant, expected term, expected volatility, dividend yield, and risk-free interest rate. Further, the forfeiture rate also affects the amount of aggregate compensation expense. These inputs are subjective and generally require significant analysis and judgment to develop. Volatility data is obtained from a study of publicly traded industry peer companies. The forfeiture rate is derived primarily from the Company's historical data, and the risk-free interest rate is based on the yield available on U.S. Treasury zero-coupon issues commensurate with the expected term. Management generally uses the simplified method to calculate the expected term for employee grants as the

Company has limited historical exercise data or alternative information to reasonably estimate an expected term assumption. The simplified method assumes that all options will be exercised midway between the weighted average vesting date and the contractual term of the option.

Stock-based compensation expense recognized in the Company's consolidated financial statements is based on awards that are expected to vest. These expense amounts have been reduced by using an estimated forfeiture rate. Forfeitures are estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates. The Company evaluates the assumptions used to estimate forfeitures annually in connection with the recognition of stock-based compensation expense.

Loss Per Share

Basic loss per share is calculated by dividing net loss applicable to common stockholders by the weighted average number of common shares outstanding during the period. Diluted loss per share is calculated by dividing the net loss attributable to common stockholders by the sum of the weighted average number of common shares outstanding plus potential dilutive common shares outstanding during the period. Potential dilutive securities, comprised of stock warrants, restricted stock units and stock options, are not reflected in diluted loss per share because such shares are anti–dilutive. Dilutive impact of potential common shares resulting from common stock equivalents is determined by applying the treasury stock method.

For the year ended December 31, 2020, there were 3,285,058 shares, consisting of 2,320,318 stock options, 805,325 restricted stock units and 159,415 stock warrants, that were not included in the computation of diluted loss per share because their effect would be anti-dilutive. For the year ended December 31, 2019, there were 26,422,608 shares, consisting of 23,933,949 convertible preferred stocks, 2,473,198 stock options and 15,461 stock warrants, that were not included in the computation of diluted loss per share because their effect would be anti-dilutive.

Fair Value Measurement

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The carrying values of the Company's financial instruments such as cash equivalents, accounts receivable, revolving credit facility, accounts payable and accrued liabilities approximate fair values due to the short-term nature of these items. The Company has elected the fair value option for its promissory notes.

Income Taxes

The Company accounts for income taxes in accordance with Accounting Standards Codification ("ASC") 740, *Income Taxes* ("ASC 740"). ASC 740 prescribes the use of the liability method. Deferred tax assets and liabilities are determined based on the difference between the financial statement carrying amounts and the tax basis of assets and liabilities and are measured using the enacted statutory tax rates in effect at the balance sheet date. The Company records a valuation allowance to reduce its deferred tax assets when uncertainty regarding their realizability exists.

Equity Method Investments

The Company uses the equity method to account for investments in entities that it does not control, but in which it has the ability to exercise significant influence over operating and financial policies. The Company's proportionate share of the net income or loss of these companies is included in consolidated net loss. Judgments regarding the level of influence over each equity method investment include consideration of key factors such as the Company's ownership interest, representation on the board of directors or other management body and participation in policy-making decisions.

Segment Reporting

The Company's operations and its financial performance is evaluated on a consolidated basis by the chief operating decision maker. Accordingly, the Company considers all of its operations to be aggregated in one reportable operating segment. For the year ended December 31, 2020, total revenue was \$11.4 million, of which \$10.7 million was from U.S. operations and \$713 thousand was from Japan operations. For the year ended December 31, 2019, total revenue was \$11.9 million, of which \$11.9 million was from U.S. operations and \$28 thousand was from Japan operations.

Recently Issued Accounting Standards Adopted

Fair Value - In August 2018, the Financial Accounting Standard Boards ("FASB") issued Accounting Standards Update ("ASU") 2018-13, *Fair Value Measurement* (ASC 820): Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement. ASU 2018-13 removes certain disclosures, modifies certain disclosures and adds additional disclosures. ASU 2018-13 is effective for annual periods, including interim periods within those annual periods, beginning after December 15, 2019. The Company adopted this standard effective January 1, 2020. The adoption of ASU 2018-13 did not have a material effect on the consolidated financial statements.

Statement of Cash Flows - In August 2016, the FASB issued ASU 2016-15, *Statement of Cash Flows*: *Classification of Certain Cash Receipts and Cash Payments* ("ASU 2016-15"). This guidance addresses eight specific cash flow issues with the objective of reducing existing diversity in practice. ASU 2016-15 is effective for annual periods, including interim periods within those annual periods, beginning after December 15, 2019. The Company adopted this standard effective January 1, 2020, using the modified retrospective approach. The adoption of ASU 2016-15 did not have a material effect on the consolidated financial statements.

Recently Issued Accounting Standards under Evaluation

Leases - In June 2020, the FASB issued ASU 2020-05, which amends the effective dates of the FASB's standards on leasing (ASC 842) to give immediate relief to certain entities as a result of the widespread adverse economic effects and business disruptions caused by the COVID-19 pandemic. In February 2016, the FASB issued ASU 2016-02, *Leases*, which, for operating leases, requires the lessee to recognize a right-of-use asset and a lease liability, initially measured at the present value of the lease payments, on its balance sheet. The guidance also requires a lessee to recognize single lease costs, calculated so that the cost of the lease is allocated over the lease term, on a generally straight-line basis. The leasing standard's effective dates were the fiscal year beginning after December 15, 2019 as originally issued (ASU 2016-02) and the fiscal year beginning after December 15, 2020 as amended by ASU 2019-10. As amended by ASU 2020-05, the leasing standard's effective date is now the fiscal year beginning after December 15, 2021. The Company is currently evaluating the impact of this new standard on its consolidated financial statements and the adoption is not expected to have a significant impact on the consolidated financial statements.

Financial Instruments - FASB ASU 2020-03, *Codification Improvements to Financial Instruments*, makes clear the determination of the contractual life of a net investment in leases in estimating expected credit losses under ASC 326, Financial Instruments – Credit Losses. In June 2016, the FASB issued ASU 2016-13, *Financial Instruments - Credit Losses (Topic 326), Measurement of Credit Losses on Financial Instruments* ("ASU 2016-13"). The standard changes the methodology for measuring credit losses on financial instruments and the timing of when such losses are recorded. ASU 2016-13 is effective for the Company's 2021 fiscal year. Early adoption is permitted. The Company is currently evaluating the impact of this new standard on its consolidated financial statements and the adoption is not expected to have a significant impact on the consolidated financial statements.

Income Tax - In December 2019, the FASB issued ASU 2019-12, which modifies ASC 740 to simplify the accounting for income taxes. The ASU's amendments are based on changes that were suggested by stakeholders as part of the FASB's simplification initiative (i.e., the FASB's effort to reduce the complexity of accounting standards while maintaining or enhancing the helpfulness of information provided to financial statement users). ASU 2019-12 is effective for the Company's 2021 fiscal year. The Company is currently evaluating the impact of this new standard on its consolidated financial statements and the adoption is not expected to have a significant impact on the consolidated financial statements.

Note 3 - Nexperia Arrangement

Nexperia Transaction

On April 4, 2018, the Company entered into a multi-element commercial arrangement with Nexperia B.V. (“Nexperia”) to obtain financing in exchange for the sale of equity instruments and performing certain technology and product development activities for Nexperia (collectively, the “Collaboration Arrangement”). Nexperia specializes in designing, manufacturing and selling a broad range of small discrete semiconductor devices that utilize components such as those manufactured by the Company. Financing under the Collaboration Arrangement is comprised of the following elements:

- $16 million Series 3 preferred stock issuance
- $9 million license fee for transfer of the Gen-3 manufacturing process
- $5 million development loan, originally maturing March 31, 2020 and subsequently extended to June 30, 2020 intended to pre-fund the Gen-4 (Tranche A) technology development (the “Tranche A Loan”)
- $10 million development loan maturing March 31, 2021 intended to pre-fund the Gen 5 and 1200V technology development (the “Tranche B Loan”)
- $10 million revolving loan (the “Tranche C Loan”)

The Company has to use the funds to operate the business in a manner consistent with or reasonably related to those business activities as carried out on or prior to April 4, 2018, the effective date of Collaboration Arrangement. In addition to the multiple elements outlined above, the Company and Nexperia entered into a Supply Agreement requiring that the Company be Nexperia’s primary supplier of specified components until June 30, 2020 on a best efforts basis. By entering into this Collaboration Arrangement, Nexperia will gain access to technology that allows for production of high power semiconductors for use in electric vehicles.

Further, Nexperia will obtain an exclusive license and market access to automotive customers outside of Japan and a sole license (non-exclusive of the Company), as well as market access to customers in other parts of the power market. Nexperia has a lien on certain of the Company’s U.S. patents not relating to metal organic chemical vapor deposition (“MOCVD”) or epiwafer technology, per the agreement.

On March 31, 2019, the Company executed Amendment No. 1 to the Loan and Security Agreement (the ”LSA”), pursuant to which the Tranche B Loan was bifurcated into the following two separate sub-tranches:

- $8 million development loan intended to pre-fund the Gen-5 (Tranche B) technology development (the “Tranche B Loan”)
- $2 million development loan intended to pre-fund the 1200V technology development (the “Tranche B-1 Loan” and, together with the Tranche B Loan, the “Tranche B Loans”)

On February 7, 2020, Amendment No. 2 to the LSA was executed to acknowledge the then-pending Merger, reaffirm the terms of the loans and confirm the waiver for the late delivery of the Company’s 2018 audited financial statements. On April 8, 2020, Amendment No. 3 to the LSA was executed to extend the maturity of the Tranche A Loan to April 30, 2020. On April 28, 2020, Amendment No. 4 to the LSA was executed to further extend the maturity of the Tranche A Loan to June 30, 2020. All other terms set forth under the original LSA remained unchanged following the amendments.

The Tranche A and Tranche B Loans represent pre-funding for Gen-4 (Tranche A), Gen-5 (Tranche B), and 1200V (Tranche B-1) technology development for Nexperia. The specific development activities and associated performance milestones are contained within a Statement of Work ("SoW") between the Company and Nexperia. The SoW may be modified from time to time based upon mutual business interests. This promise to perform the technology development is a good/service provided to a customer in exchange for consideration in the form of the technology development license fees that offset the Tranche A and Tranche B Loans outstanding. The Development Loans are recognized as a liability equal to the cash proceeds received.

In relation to the license fee for the transfer of the Company's Gen-3 manufacturing process to Nexperia, the Company received $3 million (the first of three tranches) in October 2018, $3 million (the second of three tranches) in April 2019, and $3 million (the third of three tranches) in October 2019. The Company recognized $9.0 million as licensing revenue during 2019 upon the completion of the transfer of the Company's Gen-3 manufacturing process technology and mutual sign off between Nexperia and the Company.

In January 2019, the Company received the $5 million Tranche A Loan. In June 2020, Nexperia agreed that the $5 million Tranche A Loan was permanently satisfied in full in connection with the Company transferring its Gen-4 technology development to Nexperia, at which point the Company recognized $5 million as licensing revenue. In June and July 2019, the Company received the $8 million Tranche B Loan. In December 2019, the Company received the $2 million Tranche B-1 Loan.

The Company received the full $10 million Tranche C Loan under the credit facility during the year ended December 31, 2018. See Note 9 - Debts.

On March 1, 2021, Amendment No. 5 to the LSA was executed to extend the maturity of the Tranche B loans of $10 million and the Tranche C Loan of $10 million to June 30, 2021 and May 18, 2021, respectively. All other terms set forth under the original LSA remained unchanged following the amendments.

Note 4 - Fair Value Measurements

FASB ASC 820, *Fair Value Measurements and Disclosures*, establishes a three-tier fair value hierarchy for disclosure of fair value measurements as follows:

Level 1 - Unadjusted quoted prices in active markets for identical assets and liabilities.

Level 2 - Inputs (other than quoted prices included within Level 1) that are observable, unadjusted quoted prices in markets that are not active, or other inputs that are observable or can be corroborated by observable market data of substantially the full term of the related assets or liabilities.

Level 3 - Inputs reflect management's best estimate of what market participants would use in pricing the asset or liability at the measurement date. Inputs are unobservable for the asset or liability. Consideration is given to the risk inherent in the valuation technique and the risk inherent in the inputs to the model.

The categorization of a financial instrument within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement. The following table summarizes the Company's liabilities measured at fair value as of December 31, 2020 and 2019, by level within the fair value hierarchy *(in thousands)*:

	Level 1		Level 2		Level 3	
December 31, 2020						
Promissory note	$	—	$	—	$	15,392
December 31, 2019						
Promissory note	$	—	$	—	$	16,169

The following table includes the changes in fair value of the promissory note which are Level 3 on the fair value hierarchy *(in thousands)*:

	2020		2019	
Fair value at January 1,	**$**	**16,169**	**$**	**15,852**
Interest expense accrued		150		150
(Decrease) increase in fair value		(927)		167
Fair value at December 31,	**$**	**15,392**	**$**	**16,169**

The Company recorded interest expense of $150 thousand for each of the years ended December 31, 2020 and 2019. Fair value of promissory note decreased $927 thousand and increased $167 thousand for the years ended December 31, 2020 and 2019, respectively.

There were no changes to our valuation techniques used to measure assets and liability fair values during the years ended December 31, 2020 and 2019. The valuation techniques for the items in the table above are as follows:

Level 3 borrowings, which consist of a promissory note, are measured and reported at fair value using a Monte Carlo simulation valuation model. The models can include assumptions related to the value of the notes that are based on the estimated timing and amounts of future rounds of financing, including the estimated timing of a change in control of the Company, and estimated market interest rates, which represent significant unobservable inputs. Assumptions used are (1) the Company is worth today what it can generate in future cash to the Company, (2) cash received today is more than an equal amount of cash received in the future, and (3) future cash flows can be reasonably estimated. There were no transfers in or out of level 3 fair value instruments.

Note 5 - Concentration of Credit Risk and Significant Customers

The Company manages its credit risk associated with exposure to distributors and direct customers on outstanding accounts receivable through the application of credit approvals and other monitoring procedures. Credit sales, which are mainly on credit terms of 30 to 60 days, are only made to customers who meet the Company's credit standards, while sales to new customers or customers with low credit ratings are usually made on an advance payment basis. The Company closely monitors the aging of accounts receivable from its distributors and direct customers, and regularly reviews their financial positions, where available.

Significant customers are those that represent 10% or more of revenue or accounts receivable and are set forth in the following table:

	Revenue for the Year Ended December 31,		Accounts Receivable As of December 31,	
	2020	2019	2020	2019
Customer A	59.6%	79.6%	49.3%	60.0%
Customer B	29.2%	13.3%	31.9%	20.4%

Customer A is a related party and Customer B is a government agency. See Note 17 - Related Party Transactions.

Note 6 - Inventory

Inventory consists of the following as of December 31, 2020 and December 31, 2019 *(in thousands)*:

	As of December 31,	
	2020	2019
Raw materials	$ 633	$ 412
Work in process	350	258
Finished goods	644	320
Total	**$ 1,627**	**$ 990**

An inventory write-off of $435 thousand and $155 thousand was recorded for the years ended December 31, 2020 and 2019, respectively.

Note 7 - Property and Equipment

Property and equipment as of December 31, 2020 and 2019 consists of the following *(in thousands except years)*:

	As of December 31,		Estimated Useful Life *(in years)*
	2020	2019	
Machinery and equipment	$ 14,924	$ 14,892	5
Computer equipment and software	828	876	3
Furniture and fixtures	189	186	7
Leasehold improvements (1)	4,970	4,954	7
Construction in progress	13	6	
Property and equipment, gross	20,924	20,914	
Less: accumulated depreciation and amortization	(19,600)	(19,144)	
Property and equipment, net	**$ 1,324**	**$ 1,770**	

(1) Leasehold improvements are amortized on a straight-line basis over the shorter of their estimated useful lives or the related remaining lease term.

The Company recorded depreciation and amortization expense related to property and equipment of $509 thousand and $563 thousand for the years ended December 31, 2020 and 2019, respectively.

Note 8 - Intangible Assets

The carrying values of intangible assets as of December 31, 2020 and 2019, respectively, consists of the following *(in thousands except years)*:

	December 31, 2020				
	Gross	**Accumulated Amortization**	**Foreign Exchange Rate Changes**	**Net**	**Estimated Useful Life *(in years)***
Patents	$ 2,963	$ (1,975)	$ —	$ 988	10
Developed technology - 150V	560	(555)	(5)	—	6
Developed technology - 600V	1,701	(1,684)	(17)	—	6
Total	**$ 5,224**	**$ (4,214)**	**$ (22)**	**$ 988**	

	December 31, 2019				
	Gross	**Accumulated Amortization**	**Foreign Exchange Rate Changes**	**Net**	**Estimated Useful Life *(in years)***
Patents	$ 2,963	$ (1,679)	$ —	$ 1,284	10
Developed technology - 150V	560	(519)	(34)	7	6
Developed technology - 600V	1,701	(1,575)	(104)	22	6
Total	**$ 5,224**	**$ (3,773)**	**$ (138)**	**$ 1,313**	

The Company recorded amortization expenses related to intangible assets of $326 thousand and $653 thousand for the years ended December 31, 2020 and 2019, respectively.

Estimated future amortization expenses related to intangible assets at December 31, 2020 are as follows *(in thousands)*:

Year Ending December 31,	**Amount**
2021	$ 296
2022	296
2023	296
2024	100
Thereafter	—
Total	**$ 988**

Note 9 - Debts

Development Loans

On April 4, 2018, the Company entered into a Loan and Security Agreement ("LSA") and Development and License Agreement ("DLA") with Nexperia. The LSA provided for term loans in an aggregate principal amount of up to $15.0 million, which term loans were available in tranches (Tranche A, Tranche B and Tranche B-1) and subject to the satisfaction of specified conditions. The Tranche A Loan of $5.0 million initially was scheduled to mature on the earlier of the date a specified report is required to be delivered under the DLA or March 31, 2020. On

April 8, 2020, the maturity of the Tranche A loan was extended to April 30, 2020 and, on April 28, 2020, the maturity of the Tranche A Loan was further extended to June 30, 2020. On June 29, 2020, the Tranche A Loan of $5.0 million was satisfied in full when the Company transferred its Gen-4 technology development to Nexperia. The Tranche B Loan of $8.0 million and Tranche B-1 Loan of $2.0 million mature on the earlier of the date a specified report is required to be delivered under the DLA or March 31, 2021, subject to extension as provided in the LSA. See Note 3 - Nexperia Arrangement.

As of December 31, 2020 and 2019, aggregate principal amount of term loans outstanding under the LSA were $10.0 million and $15 million, respectively.

Revolving Credit Facility

The LSA also provided a $10.0 million revolving loan (Tranche C Loan) maturing at the earlier of (i) April 3, 2021, and (ii) the date a Change of Control (as defined in the LSA) of the Company occurs. Interest payable by the Company accrues on the outstanding principal amount of the loans during such period at a rate of 6% per annum. The credit facility is secured against certain of our U.S. patents not relating to MOCVD or epiwafer technology. See Note 3 - Nexperia Arrangement.

The Tranche C Loan is recorded based on principal in the amount of $10.0 million and accrued interest (6% interest per annum). The Company recorded interest expense of $610 thousand and $608 thousand for the years ended December 31, 2020 and 2019, respectively. The Company paid interest expense of $915 thousand and $496 thousand for the years ended December 31, 2020 and 2019. As of December 31, 2020 and 2019, the total balance of the revolving credit facility was $10.2 million and $10.5 million, respectively.

Promissory Note

The Company's promissory note obligation at December 31, 2020 and 2019 consists of the following *(in thousands)*:

			Stated Value at December 31,	
	Interest Rate	**Due Date**	**2020**	**2019**
Yaskawa Note	1.00%	September 2022	$ 15,486	$ 15,336

Pursuant to ASC 825-10-15-4, the Company elected to apply the fair value option for the promissory note. As of December 31, 2020 and 2019, the Company determined the fair value for the note, as compared to the face value, including accrued interest, as follows *(in thousands)*:

	Fair Value at December 31,	
	2020	**2019**
Yaskawa Note	$ 15,392	$ 16,169

Fair value of promissory note decreased $927 thousand and increased $167 thousand for the years ended December 31, 2020 and 2019, respectively.

In October 2017, the Company issued an unsecured subordinated convertible promissory note to Yaskawa Electric Corporation (the "Yaskawa Note") for $15.0 million. The stated interest rate of the Yaskawa Note is 1.0%, and principal plus interest is due on the earlier of September 30, 2022, or the date of the occurrence of an Event of Default, Change of Control or an Initial Public Offering (all terms as defined in the Yaskawa Note). In connection with the Merger, the Yaskawa Note was amended to be convertible at the option of the holder into a maximum of 3,076,171 shares of our common stock at a conversion price of $5.12 per share.

In connection with its promissory note obligation, the Company recorded interest expense of $150 thousand for each of the years ended December 31, 2020 and 2019. In accordance with the terms of the promissory note, interest is added to the principal balance and is reflected in the carrying value on the consolidated balance sheet. As of December 31, 2020 and 2019, accrued interest on the promissory note was $486 thousand and $336 thousand, respectively.

In December 2020, we entered into a cooperation and development agreement with Yaskawa, pursuant to which Yaskawa agreed to provide $4.0 million over approximately three years to fund development activities related to industrial power conversion applications, with an initial focus on servo motor drive applications. Yaskawa provided $1.0 million of this $4.0 million commitment in December 2020. The Company evaluated and concluded that the deliverables are the same and nature of the services to be provided to Yaskawa will be consistent over the period of approximately three years. Accordingly, the Company recognized $333 thousand as revenue during the year ended December 31, 2020. As of December 31, 2020, $667 thousand is included in deferred revenue on the consolidated balance sheet.

As of December 31, 2020, the scheduled maturity on the development loans, revolving credit facility and promissory note was as follows *(in thousands)*:

Year Ending December 31,		**Amount**
2021	$	20,153
2022		15,748
Thereafter		—
Total	**$**	**35,901**

Note 10 - Investment in Aizu Fujitsu Semiconductor Wafer Solution Limited ("AFSW")

The Company has a 49% interest in AFSW and is a party to a joint venture agreement (the "JVA") with Fujitsu Semiconductor Limited ("FSL"), the 51% owner of AFSW. AFSW manufactures semiconductor products exclusively for its owners under manufacturing agreements at prices estimated to cover the cost of production. AFSW was determined to be a variable interest entity ("VIE") as the equity at risk was not believed to be sufficient. AFSW depends on its owners for any additional cash. The Company extended $7.3 million and $2.7 million to AFSW to fund AFSW's operations for the years ended December 31, 2020 and 2019, respectively. The Company's known maximum exposure to loss approximated the carrying value of its investment balance, which included the financing. Potential future losses could be higher than the carrying amount of the Company's investment, as we are liable, along with the other owner, for other future operating costs or obligations of AFSW. In addition, because Transphorm is currently committed to purchasing GaN wafers and production-related services from AFSW at pre-agreed pricing based upon the Company's second generation products, the Company may be required to purchase products at a higher cost for its newer generation products. Unfunded commitment to AFSW was $1.5 million and $1.7 million as of December 31, 2020 and 2019, respectively.

On April 1, 2020, FSL exercised its put option under the JVA and notified us that FSL intended to exit the joint venture by selling its 51% interest in AFSW to us. Under the terms of the JVA, the aggregate purchase price for FSL's interest in AFSW is expected to be one Japanese Yen. While the agreement provides that completion of the transaction was to take place as soon as 60 days from the date of the exercise notice, such transaction will be subject to regulatory and other approvals in Japan, which we believe will take up to the second quarter of 2021 to obtain, assuming such approval is received at all. In December 2020, we created a joint venture company in Singapore with a third party (controlling party with 75% ownership) to become a partner in AFSW, subject to regulatory and other approvals in Japan that we believe will take up to the second quarter of 2021 to obtain, assuming such approval is received at all. In addition, for at least one year following the date on which we (alone or with a third party) take over full ownership of AFSW, we have agreed to use our best efforts to maintain and continue the operations of AFSW, which is also synergistic with our own business for securing wafers for our products.

The Company's investment activities in AFSW for the years ended December 31, 2020, and 2019 are summarized below *(in thousands)*:

	2020	2019
Beginning balance at January 1,	$ (1,688)	$ (659)
Investment	7,348	2,698
Loss	(6,836)	(3,703)
Effect of exchange rate change	(290)	(24)
Ending balance at December 31,	**$ (1,466)**	**$ (1,688)**

Summarized financial information of AFSW for the periods indicated, as provided by the controlling owner, are as follows *(in thousands)*:

	As of December 31,	
	2020	2019
Current assets	$ 1,503	$ 3,733
Long-term assets	$ 5,572	$ 5,101
Other current liabilities	$ 2,521	$ 931
Due to controlling owner	$ 22,136	$ 17,913
Due to Transphorm	$ 12,967	$ 5,349
Net deficit	$ (30,549)	$ (15,359)

	Year Ended December 31,	
	2020	2019
Sales	$ 2,976	$ 11,599
Gross loss	$ (11,411)	$ (4,849)
Net loss	$ (13,952)	$ (7,557)

Note 11 - Commitments and Contingencies

Commitment with a Government Agency

In connection with a contract with a government agency, the Company entered into a commitment to acquire equipment and services from vendors totaling $7.4 million, all of which is reimbursable. The Company has made total purchases of $6.7 million cumulatively as of December 31, 2020, all of which were reimbursed by the government agency as of December 31, 2020. During the year ended December 31, 2020, the Company made purchases of $6.2 million, of which $1.0 million was in accounts payable as of December 31, 2020 and was subsequently paid as of the date of this report.

Operating Leases

The Company leases office and fabrication space in Goleta, California, and office spaces in San Jose, California and in Japan under noncancelable operating lease agreements. The terms of certain leases provide for escalating rental payments through the term of the lease. The Company recognizes rent expense on a straight-line basis over the lease term and accrues for rent expense incurred but not paid.

As of December 31, 2020, future minimum operating lease commitments were as follows *(in thousands)*:

Year Ending December 31,		Amount
2021	$	751
2022		404
2023		241
2024		120
Thereafter		—
Total	**$**	**1,516**

The Company recorded rent expense, net of rental income, which includes common area maintenance fees in addition to the base rent, of $892 thousand and $897 thousand for the years ended December 31, 2020 and 2019, respectively. Rental income from a noncancelable sublease was $182 thousand for each of the years ended December 31, 2020 and 2019. As of December 31, 2020, the future minimum rental payments to be received under the noncancelable sublease are $31 thousand through February 2021.

Contingencies

During the ordinary course of business, the Company may become a party to legal proceedings incidental to its business. The Company accrues contingent liabilities when it is probable that future expenditures will be made and such expenditures can be reasonably estimated. Legal cost is expensed as incurred. The Company is not aware of any material legal claims or assessments. Although the results of litigation and claims are inherently unpredictable, management believes there was not at least a reasonable possibility that the Company had incurred a material loss with respect to any loss contingencies as of December 31, 2020 and through the issuance of these financial statements.

Indemnification

The Company from time to time enters into types of contracts that contingently require the Company to indemnify parties against third-party claims. These contracts primarily relate to: (1) real estate leases, under which the Company may be required to indemnify property owners for environmental and other liabilities and for other claims arising from the Company’s use of the applicable premises; (2) agreements with the Company’s officers, directors, and employees, under which the Company may be required to indemnify such persons from liabilities arising out of their relationship; (3) indemnifying customers in the event of product failure; and (4) agreements with outside parties that use the Company’s intellectual property, under which the Company may indemnify for copyright or patent infringement related specifically to the use of such intellectual property.

Historically, the Company has not been required to make payments under these obligations, and no liabilities have been recorded for these obligations in the Company’s consolidated financial statements.

Note 12 - Convertible Preferred Stock

As of December 31, 2019, the Company’s convertible preferred stock consisted of the following *(in thousands, except share and per share data on a post conversion basis)*:

	Authorized Shares	Outstanding Shares		Carrying Value		Par Value per Share		Preference Value
Series 1	12,438,704	12,433,953	$	39,658	$	0.001	$	40,000
Series 2	7,507,699	7,499,996	$	30,000	$	0.001	$	30,000
Series 3	4,000,000	4,000,000	$	16,000	$	0.001	$	16,000
Total	**23,946,403**	**23,933,949**	**$**	**85,658**			**$**	**86,000**

Series 1 and 2 Preferred Stock

KKR Phorm Investors L.P. (Phorm) purchased 12,433,953 shares of Series 1 preferred stock, par value $0.001 per share, at a per share price of $3.217 for an aggregate purchase price of approximately $40 million. Phorm and other investors with a small percentage (~0.02%) purchased 7,499,996 shares of Series 2 preferred stock, par value $0.001 per share, at a per share price of $4.00 for an aggregate purchase price of approximately $30 million.

Series 3 Preferred Stock

On March 26, 2018, the Company entered into a stock purchase agreement and related contracts in order to effectuate the issuance of its Series 3 preferred stock to Nexperia. Pursuant to the terms of the stock purchase agreement, Nexperia purchased 4,000,000 shares of Series 3 preferred stock, par value $0.001 per share, at a per share price of $4.00, for an aggregate purchase price of approximately $16 million equating to a total ownership stake of approximately 9.9% on a fully-diluted basis. The Company has reserved shares of common stock, par value $0.001 per share, for issuance upon conversion of the Series 3 preferred stock (the conversion shares). The Series 3 preferred stock issued is substantially pari passu with the Company's Series 1 and Series 2 preferred stock previously issued to Phorm with a small percentage (~0.02%) issued to other investors.

Each share of Series 1, Series 2 and Series 3 preferred stock are convertible at the option of the holder into such number of shares of common stock as is determined by dividing the original issue price (OIP) of the Series 1, Series 2 and Series 3 preferred stock by the conversion price in effect at the time of the conversion. The conversion price of the Series 1, Series 2 and Series 3 preferred stock is subject to adjustment for certain events. Each share of Series 1, Series 2 and Series 3 preferred stock automatically converts into common stock immediately upon the closing of an underwritten public offering of the Company's common stock in which the aggregate net proceeds are at least $40 million and the offering price per share is not less than 1.5 times the OIP of the Series 1, Series 2 and Series 3 preferred stock (a Qualifying Public Offering).

The rights, privileges, and preferences of the Series 1, Series 2, and Series 3 convertible preferred stock are as follows:

Liquidation Rights - In the event of any liquidation, dissolution, or winding up of the Company, either voluntary or involuntary, the holders of convertible preferred stock will be entitled to receive, prior and in preference to any distribution of any assets of the Company to the holders of common stock, an amount per share equal to $3.217 per share for Series 1, $4.00 per share for Series 2 and $4.00 per share for Series 3, plus any declared but unpaid dividends. If, upon the occurrence of such an event, the assets and funds thus distributed among the holders of the convertible preferred stock are insufficient to permit the payment of the preferential amounts, the entire assets and funds legally available for distribution will be distributed ratably among the holders of convertible preferred stock in proportion to the full amount to which they would otherwise be respectively entitled. If, upon satisfaction of the convertible preferred stock preferences, there are any remaining assets and funds available for distribution, they will be ratably distributed among the holders of common stock.

Conversion - The convertible preferred stock is convertible at the option of the holder at any time into common stock on a one-for-one basis, subject to certain adjustments for anti-dilution. Each share of convertible preferred stock automatically converts into common stock in the event of an initial public offering (IPO) in which the proceeds are at least $40 million, net of the underwriting discount and commissions, and the offering price per share is not less than 1.5 times the original issue price of the convertible preferred stock unless otherwise agreed to by the shareholders.

Dividends - The holders of convertible preferred stock are entitled to receive, out of funds legally available, cash dividends at the rate of $0.25736 per annum for Series 1, $0.32 per annum for Series 2 and $0.32 per annum for Series 3 on each outstanding share. Such dividends are payable when, as, and if declared by the Board of Directors and are noncumulative. Through December 31, 2019, no such dividends have been declared.

Voting - The holders of Series 1 convertible preferred stock shall be entitled to the number of votes equal to ten times the number of shares of common stock into which such shares could be converted, and the holders of Series 2 convertible preferred stock shall be entitled to the number of votes equal to the number of shares of common stock into which such shares could be converted. Each holder of Series 3 preferred stock shall be entitled to the number of votes equal to ten times the number of shares of common stock into which the shares of Series 3 preferred stock held by such holder could be converted as of the record date.

Due to certain provisions in liquidation and conversion rights the company has presented the convertible preferred stock outside of stockholders deficit as mezzanine equity.

The preferred stocks were converted to common stock upon the Merger. See Note 13 - Stockholders' Deficit.

Note 13 - Stockholders' Deficit

On February 12, 2020, in connection with the Merger, shares of Transphorm Technology's convertible preferred stock and common stock issued and outstanding immediately prior to the closing of the Merger were converted into shares of the Company's common stock as follows:

- Series 1 convertible preferred stock: 51,680,254 shares issued and outstanding were converted into 12,433,953 shares issued and outstanding;
- Series 2 convertible preferred stock: 38,760,190 shares issued and outstanding were converted into 7,499,996 shares issued and outstanding;
- Series 3 convertible preferred stock: 31,850,304 issued and outstanding were converted into 4,000,000 shares issued and outstanding; and
- Common stock: 50,325,662 shares issued and outstanding were converted into 4,171,571 shares, net of 52,733 redeemed shares from unaccredited investors, issued and outstanding.

In addition, on February 12, 2020, the Company issued 1,650,000 shares in connection with the Merger with Peninsula Acquisition Corporation.

All per share and share amounts for all periods presented have been retroactively adjusted to reflect the effect of the Merger.

In December 2019, the Company amended its certificate of incorporation to authorize two classes of stock, to be designated, respectively, common stock and preferred stock. The total number of shares of stock that the Company shall have authority to issue is 755,000,000 shares, of which 750,000,000 shares are common stock, $0.0001 par value per share, and 5,000,000 shares are preferred stock, $0.0001 par value per share.

As of December 31, 2020, 750,000,000 shares of common stock are authorized, of which 40,278,496 shares of common stock were issued and outstanding, and 5,000,000 shares of preferred stock are authorized, none of which were issued and outstanding. The Company's Board of Directors has the ability to designate the rights, preferences and privileges for the preferred stock.

Private Placement

On February 12, 2020 and February 27, 2020, we sold an aggregate of 5,380,000 shares of common stock in a private placement offering at a purchase price of $4.00 per share, with aggregate gross proceeds of $21.5 million (before deducting placement agent fees and other offering expenses, which were an aggregate of $1.8 million).

On December 23, 2020, we sold an aggregate of 5,000,000 shares of common stock in a private placement offering at a purchase price of $3.00 per share and issued warrants to placement agents to purchase 150,000 shares of common stock at a price of $3.30 per share, with aggregate gross proceeds of $15.0 million (before deducting placement agent fees, financial advisor fees and other offering expenses, which were an aggregate of $1.4 million excluding warrant cost of $223 thousand).

Common Stock

Common stockholders are entitled to dividends, as and when declared by the Company's Board of Directors, subject to the priority dividend rights of the holders of other classes of stock. There have been no dividends declared to date. The holder of each share of common stock is entitled to one vote.

At December 31, 2020, the Company has reserved shares of common stock for future issuance as follows:

Equity incentive plans	5,042,525
Common stock warrants	159,415
Total	**5,201,940**

Common Stock Warrants

On December 23, 2020, we issued warrants to placement agent to purchase 150,000 shares of common stock at an exercise price of $3.30 per share in the private placement. Our warrants are exercisable by paying cash or by cashless exercise for unregistered shares of common stock. The exercise price of the warrants is subject to standard antidilutive provision adjustment in the case of stock dividends or other distributions on shares of common stock or any other equity or equity equivalent securities payable in shares of common stock, stock splits, stock combinations, reclassifications or similar events affecting our common stock, and also, subject to limitations, upon any distribution of assets, including cash, stock or other property to our stockholders. The exercise price of the warrants is not subject to "price-based" anti-dilution adjustment. We have determined that these warrants related to issuance of common stock are subject to equity treatment because the warrant holder has no right to demand cash settlement and there are no unusual anti-dilution rights.

At December 31, 2020, the following warrants to purchase common stock were outstanding:

Number of Shares	Exercise Price		Expiration Date
6,046	$	34.74	5 years after an initial public offering of the Company
3,369	$	54.41	5 years after an initial public offering of the Company
150,000	$	3.30	December 23, 2025
159,415			

Note 14 - Stock Based Compensation

The 2020 Equity Incentive Plan (the "2020 Plan") was approved by Transphorm Technology's board of directors on February 10, 2020 and Transphorm Technology's stockholders on February 12, 2020, and became effective on the business day immediately prior to the closing of the Merger. Our stockholders approved the 2020 Plan on February 11, 2020. We assumed the 2020 Plan in connection with the Merger. As of December 31, 2020, there were 1,916,882 shares available for grant and 805,325 restricted stock units outstanding under the 2020 Plan. The 2020 Plan provides for the grant of incentive stock options, within the meaning of Section 422 of the Internal Revenue Code of 1986, as amended (the "Code"), to our employees and our parent and subsidiary corporations' employees, and for the grant of nonstatutory stock options, stock appreciation rights, restricted stock, restricted stock units (“RSUs”), performance units, and performance shares to our employees, directors, and consultants and our parent and subsidiary corporations’ employees and consultants.

Subject to the adjustment provisions of the 2020 Plan, and the automatic increase described in the 2020 Plan, the maximum aggregate number of shares of our common stock that may be issued under the 2020 Plan is 5,050,000 shares of our common stock, which includes (i) 2,588,077 shares initially reserved for issuance, plus (ii) any shares of our common stock subject to issued and outstanding awards under the 2007 Plan or 2015 Plan that were assumed in the Merger and that, on or after the closing of the Merger, expire or otherwise terminate without having been exercised or issued in full, are tendered to or withheld by us for payment of an exercise price or for tax withholding obligations, or are forfeited to or repurchased by us due to failure to vest, with the maximum number of shares to be added to the 2020 Plan pursuant to this clause (ii) equal to 2,461,923 shares. Subject to the adjustment provisions of the 2020 Plan, the number of shares of common stock available for issuance under the 2020 Plan will also include an annual increase on the first day of each fiscal year beginning with our 2022 fiscal year and ending on (and including) our 2030 fiscal year, in an amount equal to the least of: 5,000,000 shares of our common stock; five percent (5%) of the outstanding shares of our common stock on the last day of the immediately preceding fiscal year; or such number of shares of our common stock as the administrator of the 2020 Plan may determine.

Stock Options

The following table summarizes stock option activity and related information for the years ended December 31, 2020 and 2019:

	Number of Options Outstanding	Weighted Average Exercise Price per Share	Weighted Average Remaining Contractual Term *(in Years)*	Aggregate Intrinsic Value (1) *(in thousands)*
Balance at January 1, 2020	**2,473,198**	**$ 4.67**	**6.84**	**$ —**
Options granted	—	$ —		
Options exercised	(6,821)	$ 3.78		
Options canceled	(146,059)	$ 5.88		
Balance at December 31, 2020	**2,320,318**	**$ 4.67**	**5.92**	**$ —**
Exercisable at December 31, 2020	**2,267,154**	**$ 4.70**	**5.86**	**$ —**
Balance at January 1, 2019	**2,377,180**	**$ 4.79**	**7.46**	**$ —**
Options granted	209,908	$ 3.14		
Options exercised	(1,392)	$ 3.86		
Options canceled	(112,498)	$ 4.34		
Balance at December 31, 2019	**2,473,198**	**$ 4.67**	**6.84**	**$ —**
Exercisable at December 31, 2019	**2,079,809**	**$ 4.95**	**6.65**	**$ —**

(1) Intrinsic value represents the excess of the fair value on the last trading day of the period, which was $3.00 as of December 31, 2020, over the exercise price, multiplied by the number of options.

Stock-based compensation expense is determined based on the fair value of the Company’s common stock as determined by the Board of Directors and assumptions such as volatility, expected term, risk-free interest rates, and other factors. Changes in the deemed fair value of the common stock, the underlying assumptions in the calculations, the number of options granted or the terms of such options, the expected forfeiture rate, the treatment of tax benefits and other changes may result in significant differences in the amounts or timing of the compensation expense recognized. The assumptions and estimates are made as follows:

- Fair Value of Common Stock - The fair value of the shares of common stock underlying the stock options has been determined by the Board of Directors, utilizing valuation studies performed by third-party advisors. Because there has been no public market for the Company's common stock, the Board of Directors has determined fair value of the common stock at the time of grant of the options by considering a number of objective and subjective factors, including valuations of comparable companies, sales of convertible preferred stock to unrelated third parties, operating and financial performance, the lack of liquidity of capital stock, and general and industry-specific economic outlook. The Company has not granted stock options with an exercise price that is less than the fair value of the underlying common stock as determined at the time of grant by the Board of Directors.

- Expected Volatility - The Company utilizes the historical volatility of representative public companies to determine its expected volatility, as there is no public trading of the Company's common stock.

- Estimated Forfeitures - The Company adopted ASU 2016-09, Compensation-Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting and has elected to account for forfeitures as they occur and therefore, stock-based compensation expense has been calculated based on actual forfeitures in the statements of operations, rather than our previous approach which was net of estimated forfeitures. The net cumulative effect of this change was not material.

- Expected Dividend Yield - The Company has not issued any common stock dividends; therefore, a dividend yield of zero was used.

- Risk-Free Interest Rate - The Company bases the risk-free interest rate used in the Black- Scholes-Merton option pricing model on the implied yield currently available on United States Treasury zero-coupon issues with an equivalent expected term.

- Expected Term - The expected term of stock options represents the period that the Company's stock options are expected to be outstanding. The Company generally uses the simplified method to calculate the expected term for employee grants.

The assumptions used to value options granted to employees during the year ended December 31, 2019 was as follows:

Weighted average expected life (in years)	5.46
Risk-free interest rate	1.34% - 1.94%
Expected volatility	39.4% - 39.8%
Weighted average grant date fair value	$1.04
Dividend yield	—%

Restricted Stock

Restricted Stock Awards

RSAs are grants of shares of our common stock that vest in accordance with terms and conditions established by the Company's Board of Directors. Recipients of RSAs generally will have voting and dividend rights with respect to such shares upon grant without regard to vesting, unless the RSA agreement provides otherwise. Shares of restricted stock that do not vest are subject to forfeiture. In September 2020, we granted 123,501 RSAs outside of our 2020 Plan, 98,450 of which were fully vested on the date of grant and the remainder of which is scheduled to vest 120 days following the grant date. In December 2020, we granted 12,000 RSAs outside of our 2020 Plan, all of which were fully vested on the date of grant. The following table summarizes RSA activity and related information for the year ended December 31, 2020:

	Number of Shares	Weighted-Average Grant Date Fair Value Per Share
Balance at beginning of period	—	$ —
Granted	135,501	$ 3.91
Vested	(98,450)	$ 3.88
Balance at end of period	**37,051**	**$ 4.00**

Restricted Stock Units

RSUs are grants of shares of our common stock that vest in accordance with terms and conditions established by the administrator of the 2020 Plan. Subject to the provisions of the 2020 Plan, the administrator determines the terms and conditions of RSUs, including the vesting criteria. We granted 816,180 RSUs during the third quarter of 2020, 4,000 of which were fully vested on the date of grant. The remainder of the RSUs are scheduled to vest as follows: one third will vest on each of January 1, 2022, January 1, 2023 and July 1, 2023, in each case subject to the RSU holders' continued status as a service provider to the Company through each vesting date.

The following table summarizes RSU activity and related information for the year ended December 31, 2020:

	Number of Shares	Weighted-Average Grant Date Fair Value Per Share
Balance at beginning of period	—	$ —
Granted	816,180	$ 4.00
Vested	(4,000)	$ 4.00
Canceled	(6,855)	$ 4.00
Balance at end of period	**805,325**	**$ 4.00**

Stock-Based Compensation

The accompanying consolidated statement of operations and comprehensive loss includes stock-based compensation expense as follows *(in thousands)*:

	Year Ended December 31,	
	2020	2019
Cost of revenue	$ 93	$ 60
Research and development	306	196
Sales and marketing	68	30
General and administrative	1,058	280
Total	**$ 1,525**	**$ 566**

Unrecognized Stock-Based Compensation

Unrecognized stock-based compensation expense was as follows *(in thousands)*:

	As of December 31, 2020			As of December 31, 2019		
	Unrecognized Expense		Average Expected Recognition Period	Unrecognized Expense		Average Expected Recognition Period
Stock options	$	54	0.67 years	$	464	1.20 years
Restricted stock		2,687	1.87 years		—	—
Total	**$**	**2,741**	**1.85 years**	**$**	**464**	**1.20 years**

Note 15 - 401(k) Savings Plan

The Company has a 401(k) savings plan (the 401(k) plan). The 401(k) plan is a defined contribution plan intended to qualify under Section 401(k) of the Internal Revenue Code. All full-time employees of the Company are eligible to participate pursuant to the terms of the 401(k) plan. Contributions by the Company are discretionary, and the Company made no contributions during the years ended December 31, 2020 and 2019.

Note 16 - Income Taxes

For the year ended December 31, 2020, the Company reported a worldwide consolidated pretax loss of $17.9 million, which consisted of a pre-tax loss from U.S. operations of approximately $10.3 million and pre-tax loss from Japan operations of approximately $7.6 million. The pre-tax loss from Japan operations consists of $800 thousand from Transphorm Japan, Inc., a $6.8 million pre-tax loss from Transphorm Aizu, Inc. and $25 thousand pre-tax income from Transphorm Epi, Inc.

For the year ended December 31, 2019, the Company reported a worldwide consolidated pre-tax loss of $15.3 million, which consisted of a pre-tax loss from U.S. operations of approximately $10.6 million and pre-tax loss from Japan operations of approximately $4.7 million. The pre-tax loss from Japan operations consists of $1.0 million from Transphorm Japan, Inc., a $3.7 million pre-tax loss from Transphorm Aizu, Inc. and $1 thousand pre-tax income from Transphorm Epi, Inc.

There is no U.S. federal or foreign provision for income taxes because the Company has incurred operating losses since inception and is in a full valuation allowance position. For the year ended December 31, 2020 and 2019, the Company has recorded a state income tax provision of $1 thousand which represents minimum taxes. Deferred income taxes reflect the net tax effects of the net operating losses and the temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes.

Significant components of the Company's deferred tax assets and deferred tax liabilities as follows *(in thousands)*:

	As of December 31,	
	2020	**2019**
Deferred tax assets:		
Net operating loss carryforwards	$ 46,346	$ 43,973
Tax credits	5,262	4,535
California capitalized research and development	80	343
Fixed assets	8	—
Others, net	593	602
Total deferred tax assets	52,289	49,453
Valuation allowance	(52,289)	(49,403)
Deferred tax asset, net of valuation allowance	—	50
Deferred tax liabilities:		
Others, net	—	—
Fixed assets	—	(50)
Total deferred tax liabilities	—	(50)
Net deferred tax assets	**$ —**	**$ —**

As of December 31, 2020, and 2019, the Company had no assurance that future taxable income would be sufficient to fully utilize the net operating loss carryforwards and other deferred tax assets in the future. Consequently, the Company determined that a valuation allowance of approximately $52.2 million and $49.4 million as of December 31, 2020, and 2019, was needed to offset the deferred tax assets resulting mainly from the net operating loss carryforwards.

The Company files income tax returns in the U.S. federal, California, and Oregon jurisdictions and is subject to U.S. federal, state, and local income tax examinations by tax authorities. Generally, the statute of limitations is 3 years for U.S. federal income tax and 4 years for state and local taxes. The statute of limitations may be extended for tax years where a corporation has a net operating loss carryforward or by agreement with the jurisdictional taxing authority. Accordingly, all of the Company's U.S. federal, state and local income tax years since inception remain open to examination by tax authorities. The Company is not currently under audit by any taxing authority.

The Company follows the provisions of uncertain tax positions as addressed in ASC 740-10. The Company recognized no increase or decrease in the liability for unrecognized tax benefits for any period presented. The Company recognizes interest accrued related to unrecognized tax benefits in interest expense and penalties in operating expenses. No such interest or penalties were recognized during the period presented. The Company had no accruals for interest and penalties at December 31, 2020, and 2019.

The utilization of the Company's net operating loss and tax credit carryforwards is dependent on the future profitability of the Company. Further, the Internal Revenue Code imposes substantial restrictions on the utilization of such carryforwards in the event of an ownership change of more than 50%, as defined, during any three-year period (Section 382 and 383 limitations). The Company has determined that several ownership changes have occurred, which have resulted in substantial limitations on the Company's ability to utilize its pre-ownership change net operating loss and tax credit carryforwards. These substantial limitations are expected to result in both a permanent loss of certain tax benefits related to net operating loss carryforwards and federal research and development credits, as well as an annual utilization limitation. The Company performed an analysis through the APO and anticipates no further Section 382 and 383 limitations.

As of December 31, 2020, the Company has federal net operating loss carryforwards of $245.3 million, of which $207.5 million will begin to expire in 2027 unless previously utilized, and the Company has state net operating loss carryforwards of $152.4 million which will begin to expire in 2028 unless previously utilized. The cumulative federal net operating loss generated for the years 2018 to 2020 of $37.8 million can be carried forward indefinitely. However, the federal deduction for net operating losses incurred in tax years beginning after January 1, 2021 is limited to 80% annual taxable income. Under the CARES Act, the suspension of net operating losses generated in years 2019, and 2020 are not subject to the 80% limitation. The Company also has foreign net operating loss carryforwards for approximately $5.2 million which will begin to expire in 2024.

As of December 31, 2020, the Company has federal research and development credit carryforwards of $4.5 million, which will begin to expire in 2032 unless previously utilized, and the Company had California research and development credit carryforwards of $3.8 million, which do not expire.

Deferred tax assets have not been established for net operating and tax credit carryforwards that are deemed to have no value due to the Section 382 and 383 limitations discussed above and, therefore, are not reflected in the table of deferred tax assets presented above. Future ownership changes, if any, may further limit the Company's ability to utilize its remaining net operating losses and tax credit carryforwards. The Company performed an analysis as of December 31, 2020 and determined that no further limitations on tax attributes were required.

Reconciliation between federal statutory tax rate and the effective tax rate is shown in the following table:

	2020	2019
Federal statutory income tax rate	21.00 %	21.00 %
Research and development credit	4.06 %	4.76 %
Nondeductible expense	0.64 %	(3.18) %
Loss in joint venture	(11.70) %	(7.44) %
Foreign income tax rate difference	4.10 %	2.99 %
Others, net	(2.08) %	(0.75) %
Valuation allowance	(16.02) %	(17.38) %
Effective tax rate	**— %**	**— %**

On March 27, 2020, the Coronavirus Aid, Relief, and Economic Security Act ("CARES Act", H.R. 748) was signed into law. The CARES Act repealed the 80% taxable income limitation for the 2018–2020 taxable years and reinstated NOL carrybacks for the 2018–2020 taxable years. In addition, the CARES Act temporarily increases the business interest deduction limitations from 30% to 50% of adjusted taxable income for the 2019 and 2020 taxable year. Lastly, a TCJA technical correction that classifies qualified improvement property as 15-year recovery period, allowing the bonus depreciation deduction to be claimed for such property retroactive as if it was included in the TCJA at the time of enactment. The company does not anticipate a material impact to the Company's consolidated financial statements due to the recent enactment.

On December 21, 2020, The Consolidated Appropriations Act ("CAA") was signed into law. We do not expect any of the enactments of the CAA to have a material impact on the company as of 12/31/2020.

Note 17 - Related Party Transactions

During the year ended December 31, 2020, the Company entered into the following related party transactions:

- Recorded $241 thousand in cost of goods sold for services, recorded research and development expense of $919 thousand, of which $408 thousand was reimbursable and recorded $84 thousand in other expense for commitment for services from the AFSW joint venture;

- Sold $165 thousand of products to non-controlling stockholders of the Company and incurred $200 thousand of license maintenance fee from a non-controlling stockholder of the Company; and

- Recorded $5.2 million in license fee income, recorded $701 thousand in EPI Gen 4 wafer growth sales, recorded $150 thousand of reimbursements in license maintenance fee, recorded $610 thousand in interest expense, recorded $408 thousand reimbursement for research and development, and sold $915 thousand of products to a stockholder and noteholder of the Company. See Note 3 - Nexperia Arrangement.

As of December 31, 2020, total due from related parties was $13.9 million, consisting of $13.5 million due from the AFSW joint venture, $17 thousand accounts receivable from non-controlling stockholders of the Company, and $435 thousand accounts receivable from a stockholder and noteholder of the Company. As of December 31, 2020, total accounts payable to related parties was $512 thousand to the AFSW joint venture and $24 thousand to Nexperia, and accrued royalty was $100 thousand to Furukawa.

During the year ended December 31, 2019, the Company entered into the following related party transactions:

- Recorded $211 thousand in cost of goods sold for services, recorded research and development expense of $695 thousand, of which $195 thousand was reimbursable, recorded $444 thousand in other expense for commitment for services, and incurred $14 thousand for employees and their benefits seconded from the AFSW joint venture;

- Sold $241 thousand of products to non-controlling stockholders of the Company, incurred $200 thousand of license maintenance fee to a non-controlling stockholder, and incurred $21 thousand for employees and their related benefits seconded from a non-controlling stockholder of the Company; and

- Recorded $9.2 million in license fee revenue, recorded $195 thousand reimbursement for research and development, recorded $608 thousand in interest expense and sold $504 thousand of products to a stockholder and noteholder of the Company. See Note 3 - Nexperia Arrangement.

As of December 31, 2019, total due from related parties was $5.8 million, consisting of $5.3 million due from the AFSW joint venture, $38 thousand accounts receivable from non-controlling stockholders of the Company and $426 thousand accounts receivable from a stockholder and noteholder of the Company. As of December 31, 2019, total accounts payable due to related parties was $272 thousand to non-controlling stockholders of the Company.

Note 18 - Subsequent Events

The Company has evaluated subsequent events through the issuance of these financial statements, and determined that there have been no events that have occurred that would require adjustments to our disclosures in the consolidated financial statements except for the following:

Amendment to Loan and Security Agreement

On March 1, 2021, Amendment No. 5 to the LSA was executed to extend the maturity of the Tranche B Loans of $10 million and the Tranche C Loan of $10 million to June 30, 2021 and May 18, 2021, respectively. All other terms set forth under the original LSA remained unchanged following the amendments.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosures

None

Item 9A. Controls and Procedures

Inherent Limitations on Effectiveness of Controls

Our management, including our principal executive officer and principal financial officer, does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent or detect all errors and all fraud. A control system, no matter how well-designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. The design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Further, because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud, if any, have been detected.

Evaluation of Disclosure Controls and Procedures

Our disclosure controls and procedures are designed to ensure that information we are required to disclose in reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms, and that such information is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance.

Our management, with the participation of our chief executive officer and our chief financial officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of the end of the period covered by this Report. Based on this evaluation, management, including our chief executive officer and our chief financial officer, concluded that as of December 31, 2020, our disclosure controls and procedures were not effective because of material weaknesses in our internal control over financial reporting, described below in Management’s Report on Internal Control Over Financial Reporting.

Management’s Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rule 13a-15(f) and Rule 15d-15(f) under the Exchange Act). Our management, with the participation of our chief executive officer and chief financial officer, evaluated the effectiveness of our internal control over financial reporting as of the end of the period covered by this Report, based on the criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, our management concluded that due to continuing material weaknesses in our internal control over financial reporting as described below, our internal control over financial reporting was not effective as of December 31, 2020.

During the year ended December 31, 2018, we identified two material weaknesses, one of which relates to the fact that certain members of our finance team and personnel are able to operate across a number of different functions and have user access that gives rise to segregation of duties risks in connection with our information technology infrastructure. The other material weakness relates to a lack of evidence to support review work and oversight procedures. These material weaknesses have a pervasive impact on various activity level and financial reporting cycles.

In connection with management’s evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2020 and the related remediation, we have not completed all of the corrective actions and procedures as contemplated herein to remediate the previously identified material weaknesses. The implemented controls need to operate for a period of time before they can be considered fully remediated. Management will continue to evaluate these new processes, controls and procedures to ascertain whether they are designed, implemented and operating effectively to provide reasonable assurance that they will prevent or detect a material error in the financial statements.

This Annual Report on Form 10-K does not include an attestation report of our registered public accounting firm regarding internal control over financial reporting. Management's report was not subject to attestation by our registered public accounting firm pursuant to an exemption for non-accelerated filers from the internal control audit requirements of Section 404(b) of the Sarbanes-Oxley Act of 2002.

Changes in Internal Control Over Financial Reporting

There was no change in our internal control over financial reporting identified in connection with the evaluation required by Rule 13a-15(d) and 15d-15(d) of the Exchange Act during the quarter ended December 31, 2020 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

Part III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item is incorporated herein by reference to our definitive proxy statement on Schedule 14A (“Proxy Statement”) for our 2021 annual meeting of stockholders to be filed with the SEC within 120 days after the end of the year ended December 31, 2020.

Item 11. Executive Compensation

The information required by this item is incorporated herein by reference to the Proxy Statement.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this item is incorporated herein by reference to the Proxy Statement.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this item is incorporated herein by reference to the Proxy Statement.

Item 14. Principal Accountant Fees and Services

The information required by this item is incorporated herein by reference to the Proxy Statement.

Part IV

Item 15. Exhibit and Financial Statement Schedules

(a) The following documents are filed as part of, or incorporated by reference into, this Annual Report on Form 10-K:

1. Financial Statements: See Item 8 of this Annual Report on Form 10-K.

2. Financial Statement Schedules: All schedules are omitted because they are not required, are not applicable or the information is included in the consolidated financial statements or notes thereto.

(b) The following exhibits are filed as part of, or incorporated by reference into, this Annual Report on Form 10-K:

Exhibit Number	Exhibit Description	Filed with this Report	Incorporated by Reference			
			Form	Exhibit No.	Filing Date	SEC File No.
1.1	Placement Agent Agreement between the Company and Loop Capital Markets LLC, dated December 22, 2020, including form of lock-up agreement		8-K	1.1	December 22, 2020	000-55832
2.1 ‡	Agreement and Plan of Merger and Reorganization, dated February 12, 2020, by and among the Registrant, Peninsula Acquisition Sub, Inc. and Transphorm Technology		8-K	2.1	February 14, 2020	000-55832
3.1	Certificate of Merger relating to the merger of Peninsula Acquisition Sub, Inc. with and into Transphorm Technology, filed with the Secretary of State of Delaware on February 12, 2020		8-K	3.1	February 14, 2020	000-55832
3.2	Certificate of Amendment to Certificate of Incorporation, filed with the Secretary of State of Delaware on February 12, 2020		8-K	3.2	February 14, 2020	000-55832
3.3	Amended and Restated Certificate of Incorporation of the Registrant		10-Q	3.1	August 11, 2020	000-55832
3.4	Amended and Restated Bylaws of the Registrant		8-K	3.1	June 3, 2020	000-55832
4.1.1 *	Form of Registration Rights Agreement, effective as of February 12, 2020		8-K	4.1	February 14, 2020	000-55832
4.1.2	Amendment to Registration Rights Agreement		10-Q	4.1.1	May 14, 2020	000-55832
4.2	Stockholders Agreement, dated February 12, 2020, by and between the Registrant and KKR Phorm Investors L.P.		8-K	4.2	February 14, 2020	000-55832
4.3*	Registration Rights Agreement, dated December 23, 2020, by and between the Registrant and the signatories thereto		8-K	4.1	December 30, 2020	000-55832
4.4	Specimen common stock certificate of the Registrant	X				
4.5	Description of Registrant's securities	X				
10.1 *	Form of Subscription Agreement, dated December 23, 2020		8-K	10.1	December 30, 2020	000-55832
10.2	Form of Placement Agent Warrant, dated December 23, 2020		8-K	10.2	December 30, 2020	000-55832
10.3.1 #	2007 Stock Plan		8-K	10.3.1	February 14, 2020	000-55832
10.3.2 #	Form of Stock Option Agreement under 2007 Stock Plan		8-K	10.3.2	February 14, 2020	000-55832
10.4.1 #	2015 Equity Incentive Plan		8-K	10.4.1	February 14, 2020	000-55832
10.4.2 #	Form of Stock Option Agreement under 2015 Equity Incentive Plan		8-K	10.4.2	February 14, 2020	000-55832
10.5.1 #	2020 Equity Incentive Plan		8-K	10.5	February 14, 2020	000-55832

10.5.2 #	Form of Stock Option Agreement under 2020 Equity Incentive Plan	10-Q	10.5.2	May 14, 2020	000-55832
10.5.3 #	Form of Restricted Stock Unit Agreement under 2020 Equity Incentive Plan	10-Q	10.1	November 10, 2020	000-55832
10.6	Lock-Up Agreement, effective July 13, 2020, between the Registrant and KKR Phorm Investors L.P.	10-Q	10.3	August 11, 2020	000-55832
10.7 *	Form of Subscription Agreement, dated February 12, 2020	8-K	10.7	February 14, 2020	000-55832
10.8 #	Offer Letter, dated as of October 13, 2015, by and between Transphorm Technology and Mario Rivas	8-K	10.8	February 14, 2020	000-55832
10.9 #	Offer Letter, dated as of March 22, 2007, by and between Transphorm Technology and Primit Parikh	8-K	10.9	February 14, 2020	000-55832
10.10 #	Offer Letter, dated as of October 14, 2015, by and between Transphorm Technology and Cameron McAulay	8-K	10.10	February 14, 2020	000-55832
10.11.1 †	Award Contract, dated December 13, 2018, by and between Transphorm Technology and Naval Air Warfare Center Aircraft Division	8-K	10.11.1	February 14, 2020	000-55832
10.11.2 †	Amendment of Solicitation, dated February 14, 2019, by and between Transphorm Technology and Naval Air Warfare Center Aircraft Division	8-K	10.11.2	February 14, 2020	000-55832
10.11.3 †	Amendment of Solicitation, dated June 6, 2019, by and between Transphorm Technology and Naval Air Warfare Center Aircraft Division	8-K	10.11.3	February 14, 2020	000-55832
10.11.4	Amendment of Solicitation, dated September 12, 2019, by and between Transphorm Technology and Naval Air Warfare Center Aircraft Division	8-K	10.11.4	February 14, 2020	000-55832
10.11.5 †	Amendment of Solicitation, dated November 27, 2019, by and between Transphorm Technology and Naval Air Warfare Center Aircraft Division	8-K	10.11.5	February 14, 2020	000-55832
10.12.1 †	Joint Venture Agreement, dated as of May 23, 2017, by and among Aizu Fujitsu Semiconductor Limited, Fujitsu Semiconductor Limited, Transphorm Technology and Transphorm Aizu, Inc.	8-K	10.12.1	February 14, 2020	000-55832
10.12.2 †	First Amendment to the Joint Venture Agreement, dated as of September 1, 2018, by and between Aizu Fujitsu Semiconductor Limited, Fujitsu Semiconductor Limited, Transphorm Technology and Transphorm Aizu, Inc.	8-K	10.12.2	February 14, 2020	000-55832
10.13.1 †	Supply Agreement, dated April 4, 2018, between Transphorm Technology and Nexperia	8-K	10.13.1	February 14, 2020	000-55832
10.13.2	Amendment No. 1 to Supply Agreement, dated February 7, 2020, between Transphorm Technology and Nexperia	8-K	10.13.2	February 14, 2020	000-55832
10.14.1 †	Loan and Security Agreement, dated April 4, 2018, between Transphorm Technology and Nexperia	8-K	10.14.1	February 14, 2020	000-55832
10.14.2 †	Amendment No. 1 to Loan and Security Agreement, dated March 21, 2019, between Transphorm Technology and Nexperia	8-K	10.14.2	February 14, 2020	000-55832
10.14.3	Amendment No. 2 to Loan and Security Agreement, dated February 7, 2020, between Transphorm Technology and Nexperia	8-K	10.14.3	February 14, 2020	000-55832
10.14.4	Amendment No. 3 to Loan and Security Agreement, dated April 8, 2020, between Transphorm Technology and Nexperia	10-Q	10.14.4	May 14, 2020	000-55832
10.14.5	Amendment No. 4 to Loan and Security Agreement, dated April 28, 2020, between Transphorm Technology and Nexperia	10-Q	10.14.5	May 14, 2020	000-55832
10.15.1 †	Development and License Agreement, dated April 4, 2018, between Transphorm Technology and Nexperia	8-K	10.15.1	February 14, 2020	000-55832
10.15.2 †	Amendment No. 1 to Development and License Agreement, dated March 21, 2019, between Transphorm Technology and Nexperia	8-K	10.15.2	February 14, 2020	000-55832

10.15.3	Amendment No. 2 to Development and License Agreement, dated February 7, 2020, between Transphorm Technology and Nexperia	8-K	10.15.3	February 14, 2020	000-55832
10.16.1	Standard Industrial/Commercial Multi-Tenant Lease, dated June 23, 2010, by and between Transphorm Technology and Castilian LLC, for the premises located at 75 Castilian Drive, Goleta, CA 93117	8-K	10.16.1	February 14, 2020	000-55832
10.16.2	First Amendment to Lease, dated January 22, 2016, by and between Transphorm Technology and Castilian, LLC, for the premises located at 75 Castilian Drive, Goleta, CA 93117	8-K	10.16.2	February 14, 2020	000-55832
10.17.1	Standard Industrial/Commercial Multi-Tenant Lease, dated October 14, 2008, by and between Transphorm Technology and Frieslander Holdings, LLC and Nederlander Holdings, LLC, for the premises located at 111 Castilian Drive, Suite B, Goleta, CA 93117	8-K	10.17.1	February 14, 2020	000-55832
10.17.2	First Amendment to Standard Industrial/Commercial Multi-Tenant Lease, dated March 17, 2009, by and between Transphorm Technology and Frieslander Holdings, LLC and Nederlander Holdings, LLC, for the premises located at 111 Castilian Drive, Suite B, Goleta, CA 93117	8-K	10.17.2	February 14, 2020	000-55832
10.17.3	Second Amendment to Standard Industrial/Commercial Multi-Tenant Lease, dated August 1, 2011, by and between Transphorm Technology and Frieslander Holdings, LLC and Nederlander Holdings, LLC, for the premises located at 115 Castilian Drive, Suite B, Goleta, CA 93117, formerly known as 111 Castilian Drive, Suite B, Goleta, CA 93117	8-K	10.17.3	February 14, 2020	000-55832
10.17.4	Third Amendment to Standard Industrial/Commercial Multi-Tenant Lease, dated November 24, 2015, by and between Transphorm Technology and Frieslander Holdings, LLC and Nederlander Holdings, LLC, for the premises located at 115 Castilian Drive, Suite B, Goleta, CA 93117, formerly known as 111 Castilian Drive, Suite B, Goleta, CA 93117	8-K	10.17.4	February 14, 2020	000-55832
10.18	Form of Director and Officer Indemnification Agreement	8-K	10.18	February 14, 2020	000-55832
10.19	Form of Pre-Merger Indemnity Agreement	8-K	10.19	February 14, 2020	000-55832
10.20.1 *	Warrant to Purchase Shares of Series Preferred Stock, dated November 3, 2010, by and between Transphorm Technology and Leader Equity, LLC ("Leader Warrant")	8-K	10.21.1	February 14, 2020	000-55832
10.20.2	Letter Amendment to Leader Warrant, dated May 21, 2015, by and between Transphorm Technology and Leader Ventures, LLC	8-K	10.21.2	February 14, 2020	000-55832
10.20.3	Amendment to Leader Warrant, dated February 4, 2020, by and between Transphorm Technology and Leader Ventures, LLC	8-K	10.21.3	February 14, 2020	000-55832
10.21.1	Plain English Warrant Agreement, dated November 3, 2010, by and between Transphorm Technology and TriplePoint Capital, LLC ("First TriplePoint Warrant")	8-K	10.22.1	February 14, 2020	000-55832
10.21.2	Plain English Warrant Agreement, dated December 2, 2010, by and between Transphorm Technology and TriplePoint Capital, LLC ("Second TriplePoint Warrant")	8-K	10.22.2	February 14, 2020	000-55832
10.21.3	Letter Amendment to First TriplePoint Warrant and Second TriplePoint Warrant, dated May 20, 2015, by and between Transphorm Technology and TriplePoint Capital LLC	8-K	10.22.3	February 14, 2020	000-55832
10.21.4	Amendment to First TriplePoint Warrant, dated February 10, 2020, by and between Transphorm Technology and TriplePoint Capital LLC	8-K	10.22.4	February 14, 2020	000-55832

10.21.5	Amendment to Second TriplePoint Warrant, dated February 10, 2020, by and between Transphorm Technology and TriplePoint Capital LLC		8-K	10.22.5	February 14, 2020	000-55832
10.22.1 *	Subordinated Convertible Promissory Note, dated October 4, 2017, by and between Transphorm Technology and Yaskawa		8-K	10.23.1	February 14, 2020	000-55832
10.22.2	Waiver, Consent and Amendment Agreement, dated March 16, 2018, by and between Transphorm Technology and Yaskawa		8-K	10.23.2	February 14, 2020	000-55832
10.22.3	Consent, Guaranty and Amendment Agreement, dated February 10, 2020, by and between Transphorm Technology and Yaskawa		8-K	10.23.3	February 14, 2020	000-55832
10.23.1 †	License Agreement dated September 1, 2007, by and between Transphorm Technology and The Regents of the University of California		8-K	10.24.1	February 14, 2020	000-55832
10.23.2 †	Eleventh Amendment to License Agreement dated October 29, 2019, by and between Transform Technology and the Regents of the University of California		8-K	10.24.2	February 14, 2020	000-55832
10.24 †	Intracompany License Agreement, dated Oct. 14, 2019, by and between Transphorm Japan and Transphorm Technology		8-K	10.25	February 14, 2020	000-55832
10.25	Letter Agreement, dated February 5, 2020, by and between Transphorm and Marelli Corporation		8-K	10.26	February 14, 2020	000-55832
10.26	Indemnification Agreement, dated February 12, 2020, by and between Registrant and KKR Phorm Investors L.P.		8-K	10.28	February 14, 2020	000-55832
21.1	List of Subsidiaries		S-1	21.1	January 20, 2021	333-252269
23.1	Consent of Marcum LLP, Independent Registered Public Accounting Firm	X				
24.1	Power of Attorney (included on the signature page hereto)	X				
31.1	Certification of Chief Executive Officer Pursuant to Section 302 of Sarbanes-Oxley Act of 2002	X				
31.2	Certification of Chief Financial Officer Pursuant to Section 302 of Sarbanes-Oxley Act of 2002	X				
32.1	Certification of Chief Executive Officer and Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	X				
101.INS	Inline XBRL Instance Document	X				
101.SCH	Inline XBRL Taxonomy Extension Schema Document	X				
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document	X				
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document	X				
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document	X				
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document	X				

‡ Annexes, schedules and/or exhibits have been omitted pursuant to Item 601(b)(2) of Regulation S-K. The Registrant hereby undertakes to furnish supplementally a copy of any of the omitted schedules and exhibits to the SEC on a confidential basis upon request.
* Annexes, schedules and/or exhibits have been omitted pursuant to Item 601(a)(5) of Regulation S-K. The Registrant hereby undertakes to furnish supplementally a copy of any of the omitted schedules and exhibits to the SEC on a confidential basis upon request.
# Indicates management contract or compensatory plan.
† Portions of the exhibit, marked by brackets, have been omitted because the omitted information (i) is not material and (ii) would likely cause competitive harm if publicly disclosed.

Item 16. Form 10-K Summary

None

Signatures

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this Report to be signed on its behalf by the undersigned, thereunto duly authorized.

			Transphorm, Inc.
Date:	March 11, 2021	By:	/s/ Mario Rivas
			Mario Rivas
			Chief Executive Officer

Power of Attorney

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Mario Rivas and Cameron McAulay and each of them, as his true and lawful attorney-in-fact and agent with full power of substitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K and to file the same, with all exhibits thereto and all documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming that said attorney-in-fact and agent, or his substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, the Report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated:

Signature	Title	Date
/s/ Mario Rivas Mario Rivas	Chief Executive Officer and Director (Principal Executive Officer)	March 11, 2021
/s/ Cameron McAulay Cameron McAulay	Chief Financial Officer (Principal Financial and Accounting Officer)	March 11, 2021
/s/ Brittany Bagley Brittany Bagley	Director	March 11, 2021
/s/ Julian Humphreys Julian Humphreys	Director	March 11, 2021
/s/ David Kerko David Kerko	Director	March 11, 2021
/s/ Katharina McFarland Katharina McFarland	Director	March 11, 2021
/s/ Umesh Mishra Umesh Mishra	Chief Technology Officer and Director	March 11, 2021
/s/ Eiji Yatagawa Eiji Yatagawa	Director	March 11, 2021

Exhibit 4.4

NUMBER
TP

SHARES
SPECIMEN

transphorm

INCORPORATED UNDER THE LAWS OF THE STATE OF DELAWARE

SEE REVERSE FOR
CERTAIN DEFINITIONS

COMMON STOCK

CUSIP 89386L 10 0

THIS CERTIFIES THAT:

SPECIMEN - NOT NEGOTIABLE

IS THE OWNER OF

FULLY PAID AND NON-ASSESSABLE SHARES OF COMMON STOCK OF $0.0001 PAR VALUE EACH OF

TRANSPHORM, INC.

transferable on the books of the Corporation in person or by duly authorized attorney upon surrender of this certificate duly endorsed or assigned. This certificate and the shares represented hereby are subject to the laws of the State of Delaware, and to the Certificate of Incorporation and Bylaws of the Corporation, as now or hereafter amended.

This certificate is not valid until countersigned by the Transfer Agent.

WITNESS the facsimile seal of the Corporation and the facsimile signatures of its duly authorized officers.

DATED:

TRANSPHORM, INC.
CORPORATE
SEAL
2017
DELAWARE

COUNTERSIGNED:
PHILADELPHIA STOCK TRANSFER, INC.
2320 HAVERFORD RD., SUITE 230, ARDMORE, PA 19003
TRANSFER AGENT

BY:

AUTHORIZED SIGNATURE

SPECIMEN
NOT NEGOTIABLE

Cameron McAulay
CHIEF FINANCIAL OFFICER

CHIEF EXECUTIVE OFFICER

Exhibit 4.4

The following abbreviations, when used in the inscription on the face of this certificate, shall be construed as though they were written out in full according to applicable laws or regulations:

TEN COM	*- as tenants in common*	*UNIF GIFT MIN ACT - ....Custodian..................*
		(Cust) (Minor)
TEN ENT	*- as tenants by the entireties*	*under Uniform Gifts to Minors*
JT TEN	*- as joint tenants with right of survivorship and not as tenants in common*	*Act ....*
		(State)

Additional abbreviations may also be used though not in the above list.

*For Value Received,*_________________________ *hereby sell, assign and transfer unto*

PLEASE INSERT SOCIAL SECURITY OR OTHER IDENTIFYING NUMBER OF ASSIGNEE

____

(PLEASE PRINT OR TYPE NAME AND ADDRESS, INCLUDING ZIP CODE, OF ASSIGNEE)

____

____

____ *Shares*

of the stock represented by the within Certificate, and do hereby irrevocably constitute and appoint

____ *Attorney*

to transfer the said stock on the books of the within named Corporation with full power of substitution in the premises.

Dated _________________________

____

NOTICE: THE SIGNATURE TO THIS ASSIGNMENT MUST CORRESPOND WITH THE NAME AS WRITTEN UPON THE FACE OF THE CERTIFICATE IN EVERY PARTICULAR, WITHOUT ALTERATION OR ENLARGEMENT OR ANY CHANGE WHATSOEVER.

Signature(s) Guaranteed

By ____

The Signature(s) must be guaranteed by an eligible guarantor institution (Banks, Stockbrokers, Savings and Loan Associations and Credit Unions with membership in an approved Signature Guarantee Medallion Program), pursuant to SEC Rule 17Ad-15.

THE CORPORATION WILL FURNISH TO ANY STOCKHOLDER, UPON REQUEST AND WITHOUT CHARGE, A FULL STATEMENT OF THE DESIGNATIONS, RELATIVE RIGHTS, PREFERENCES AND LIMITATIONS OF THE SHARES OF EACH CLASS AND SERIES AUTHORIZED TO BE ISSUED, SO FAR AS THE SAME HAVE BEEN DETERMINED, AND OF THE AUTHORITY, IF ANY, OF THE BOARD TO DIVIDE THE SHARES INTO CLASSES OR SERIES AND TO DETERMINE AND CHANGE THE RELATIVE RIGHTS, PREFERENCES AND LIMITATIONS OF ANY CLASS OR SERIES. SUCH REQUEST MAY BE MADE TO THE SECRETARY OF THE CORPORATION OR TO THE TRANSFER AGENT NAMED ON THIS CERTIFICATE.

COLUMBIA PRINTING SERVICES, LLC - www.stockinformation.com

DESCRIPTION OF REGISTRANT'S SECURITIES

The following description of the capital stock of Transphorm, Inc. ("us," "our," "we" or the "Company") is based upon the Company's amended and restated certificate of incorporation, the Company's amended and restated bylaws, and applicable provisions of law. The following description summarizes the most important terms of the Company's capital stock. For a complete description of the matters set forth in this exhibit, please refer to the amended and restated certificate of incorporation and the amended and restated bylaws, each previously filed with the Securities and Exchange Commission and incorporated by reference as an exhibit to the Annual Report on Form 10-K of which this exhibit is a part, and to the applicable provisions of Delaware law.

Authorized Capital Stock

Our authorized capital stock consists of 755,000,000 shares, with a par value of $0.0001 per share, of which:

- 750,000,000 shares are designated as common stock; and
- 5,000,000 shares are designated as preferred stock.

Our common stock is registered pursuant to Section 12 of the Securities Exchange Act of 1934, as amended (the "Exchange Act").

Common Stock

Voting Rights

Each holder of common stock is entitled to one vote for each share on all matters submitted to a vote of the stockholders, including the election of directors. Our certificate of incorporation and bylaws do not provide for cumulative voting rights. Because of this, the holders of a plurality of the shares of common stock entitled to vote in any election of directors can elect all of the directors standing for election, if they should so choose. With respect to matters other than the election of directors, at any meeting of the stockholders at which a quorum is present or represented, the affirmative vote of a majority of the voting power of the shares present in person or represented by proxy at such meeting and entitled to vote on the subject matter shall be the act of the stockholders, except as otherwise required by law. The holders of a majority of the stock issued and outstanding and entitled to vote, present in person or represented by proxy, shall constitute a quorum for the transaction of business at all meetings of the stockholders.

Dividends

Subject to preferences that may be applicable to any then-outstanding convertible preferred stock, holders of our common stock are entitled to receive dividends, if any, as may be declared from time to time by our board of directors out of legally available funds.

Liquidation

In the event of our liquidation, dissolution, or winding up, holders of our common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities and the satisfaction of any liquidation preference granted to the holders of any then-outstanding shares of convertible preferred stock.

No Preemptive or Similar Rights

Our common stock is not entitled to preemptive rights, and is not subject to conversion, redemption or sinking fund provisions.

Fully Paid and Non-Assessable

All issued and outstanding shares of our common stock are fully paid and nonassessable.

Preferred Stock

Our board of directors has the authority, without further action by the stockholders, to issue up to 5,000,000 shares of preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof. These rights, preferences, and privileges could include dividend rights, conversion rights, voting rights, redemption rights, liquidation preferences, sinking fund terms, and the number of shares constituting any series or the designation of such series, any or all of which may be greater than the rights of common stock. The issuance of preferred stock could adversely affect the voting power of holders of common stock and the likelihood that such holders will receive dividend payments and payments upon liquidation. In addition, the issuance of preferred stock could have the effect of delaying, deferring or preventing change in our control or other corporate action.

Anti-Takeover Effects of Certain Provisions of Delaware Law, Our Amended and Restated Certificate of Incorporation and Our Amended and Restated Bylaws

Certain provisions of Delaware law and certain provisions included in our certificate of incorporation and bylaws summarized below may be deemed to have an anti-takeover effect and may delay, deter, or prevent a tender offer or takeover attempt that a stockholder might consider to be in its best interests, including attempts that might result in a premium being paid over the market price for the shares held by stockholders.

Preferred Stock

Our certificate of incorporation contains provisions that permit our board of directors to issue, without any further vote or action by the stockholders, shares of preferred stock in one or more series and, with respect to each such series, to fix the number of shares constituting the series and the designation of the series, the voting rights (if any) of the shares of the series and the powers, preferences, or relative, participation, optional, and other special rights, if any, and any qualifications, limitations, or restrictions, of the shares of such series.

Classified Board

Our certificate of incorporation provides that our board of directors shall be divided into three classes of directors, with the classes as nearly equal in number as practicable, and with the directors serving three-year terms. As a result, approximately one-third of our board of directors will be elected each year. The classification of directors has the effect of making it more difficult for shareholders to change the composition of our board of directors. Our certificate of incorporation also provides that, subject to any rights of holders of preferred stock to elect additional directors under specified circumstances, the number of directors is, and will continue to be, fixed exclusively pursuant to a resolution adopted by our board of directors.

Removal of Directors

Our certificate of incorporation provides that stockholders may only remove a director for cause by a vote of no less than a majority of the shares present in person or by proxy at the meeting and entitled to vote.

Director Vacancies

Our certificate of incorporation authorizes only our board of directors to fill vacant directorships.

No Cumulative Voting

Our certificate of incorporation provides that stockholders do not have the right to cumulate votes in the election of directors.

Special Meetings of Stockholders

Our certificate of incorporation and bylaws provide that, except as otherwise required by law, special meetings of the stockholders may be called only by the chairperson of our board of directors, the chief executive officer, the president (in the absence of a chief executive officer), or our board of directors acting pursuant to a resolution adopted by board members constituting a majority of the total number of authorized directorships.

Advance Notice Procedures for Director Nominations

Our bylaws provide that stockholders seeking to nominate candidates for election as directors at an annual or special meeting of stockholders must provide timely notice thereof in writing. To be timely, a stockholder's notice generally will have to be delivered to and received at our principal executive offices before notice of the meeting is issued by the secretary of the Company, with such notice being served not less than 90 nor more than 120 days before the meeting. Although the bylaws do not give the board of directors the power to approve or disapprove stockholder nominations of candidates to be elected at an annual meeting, the bylaws may have the effect of precluding the conduct of certain business at a meeting if the proper procedures are not followed or may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect its own slate of directors or otherwise attempting to obtain control of the Company.

Action by Written Consent

Our certificate of incorporation and bylaws provide that from and after the date that KKR Phorm Investors L.P. ("Phorm") beneficially owns less than a majority of our outstanding shares of common stock, any action to be taken by the stockholders must be effected at a duly called annual or special meeting of stockholders and may not be effected by written consent. Until such time, any action to be taken by the shareholders may be effected by written consent.

***Amending our Certificate of Incorporation and Bylaw*s**

Our certificate of incorporation provides that, from and after the date that Phorm beneficially owns less than a majority of our outstanding shares of common stock, the affirmative vote of at least 66 2/3% of the votes entitled to be cast by holders of all outstanding shares then entitled to vote, voting together as a single class, is required to amend certain provisions of our certificate of incorporation.

From and after the date that Phorm beneficially owns less than a majority of our outstanding shares of common stock, our bylaws may be adopted, amended, altered or repealed by stockholders only upon approval of at least 66 2/3% of the votes entitled to be cast by holders of all outstanding shares then entitled to vote, voting together as a single class. Additionally, our certificate of incorporation provides that our bylaws may be amended, altered or repealed by the board of directors.

Authorized but Unissued Shares

Our authorized but unissued shares of common stock and preferred stock will be available for future issuances without stockholder approval, except as required by the listing standards of any exchange upon which our common stock may become listed, and could be utilized for a variety of corporate purposes, including future offerings to raise additional capital, acquisitions and employee benefit plans. The existence of authorized but unissued and unreserved common stock and preferred stock could render more difficult or discourage an attempt to obtain control of the Company by means of a proxy contest, tender offer, merger, or otherwise.

Exclusive Jurisdiction

Our bylaws provide that, unless we consent to the selection of an alternative forum, the Court of Chancery of the State of Delaware, or if the Court of Chancery does not have jurisdiction, the federal district court for the District of Delaware, is the exclusive forum for (i) any derivative action or proceeding brought on behalf of us, (ii) any action asserting a claim of breach of a fiduciary duty owed by any director, stockholder, officer, or other employee to us or our stockholders, (iii) any action arising pursuant to any provision of the Delaware General Corporation Law (the "DGCL") or our certificate of incorporation or bylaws (as either may be amended from time to time), or (iv) any action asserting a claim governed by the internal affairs doctrine, except, in each case, (A) any claim as to which such court determines that there is an indispensable party not subject to the jurisdiction of such court (and the indispensable party does not consent to the personal jurisdiction of such court within 10 days following such determination), (B) which is vested in the exclusive jurisdiction of a court or forum other than such court, or (C) for which such court does not have subject matter jurisdiction. Our bylaws also provide that unless we consent in writing to the selection of an alternative forum, that the federal district courts of the United States of America shall be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act. Section 27 of the Exchange Act creates exclusive federal jurisdiction over all suits brought to enforce any duty or liability created by the Exchange Act or the rules and regulations thereunder. As a result, the exclusive forum provision will not apply to actions arising under the Exchange Act or the rules and regulations thereunder. Although our bylaws contain the exclusive forum provisions described above, it is possible that a court could find that such provisions are inapplicable for a particular claim or action or that either such provision is unenforceable, and our stockholders will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder.

Business Combinations with Interested Stockholders

We have opted out of Section 203 of the DGCL. However, our certificate of incorporation contains similar provisions providing that we may not engage in certain “business combinations” with any “interested stockholder” for a three-year period following the time that the stockholder became an interested stockholder, unless:

- prior to this time, our board of directors approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;

- upon consummation of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of our voting stock outstanding at the time the transaction commenced, excluding certain shares; or

- at or subsequent to such time, the business combination is approved by our board of directors and authorized at an annual or special meeting of stockholders, and by the affirmative vote of holders of at least 66 and 2/3% of the outstanding voting stock that is not owned by the interested stockholder.

Generally, a “business combination” includes a merger, asset, or stock sale or other transaction resulting in a financial benefit to the interested stockholder. Subject to certain exceptions (including a provision that provides that Phorm and certain of its affiliates and any of their direct or indirect transferees and any group as to which such persons are a party shall not be deemed to be “interested stockholders”), an “interested stockholder” is a person who, together with that person’s affiliates and associates, owns, or within the previous three years owned, 15% or more of our outstanding voting stock. For purposes of this section only, “voting stock” has the meaning given to it in Section 203 of the DGCL.

The provisions of our certificate of incorporation and bylaws could have the effect of discouraging others from attempting hostile takeovers and, as a consequence, they may also inhibit temporary fluctuations in the market price of our common stock that often result from actual or rumored hostile takeover attempts. For example, under certain circumstances, our charter provisions regarding certain “business combinations” will make it more difficult for a person who would be an “interested stockholder” to effect various business combinations with the Company for a three-year period. This provision may encourage companies interested in acquiring us to negotiate in advance with our board of directors because the stockholder approval requirement would be avoided if our board of directors approves either the business combination or the transaction which results in the stockholder becoming an interested stockholder. These provisions may also have the effect of preventing changes in management or in our board of directors. It is possible that these provisions may make it more difficult to accomplish transactions that stockholders may otherwise deem to be in their best interests.

Exhibit 23.1

Independent Registered Public Accounting Firm's Consent

We consent to the incorporation by reference in the Registration Statement of Transphorm, Inc. on Form S-8 (333-238866) of our report dated March 11, 2021, which includes an explanatory paragraph as to the Company's ability to continue as a going concern, with respect to our audits of the consolidated financial statements of Transphorm, Inc. as of and for the years ended December 31, 2020 and 2019 included in this Annual Report on Form 10-K filed with the U.S. Securities and Exchange Commission on March 11, 2021.

/s/ Marcum LLP

Marcum LLP
Chicago, IL
March 11, 2021

Exhibit 31.1

Certification of Chief Executive Officer
Pursuant to
Exchange Act Rules 13a-14(a) and 15d-14(a),
As Adopted Pursuant to
Section 302 of the Sarbanes-Oxley Act of 2002

I, Mario Rivas, certify that:

1. I have reviewed this annual report on Form 10-K of Transphorm, Inc. (the “registrant”);

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant’s other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c. Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d. Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant’s other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

   a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

   a. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date:	March 11, 2021	By:	*/s/ Mario Rivas*
			Mario Rivas
			Chief Executive Officer
			(Principal Executive Officer)

Certification of Chief Financial Officer
Pursuant to
Exchange Act Rules 13a-14(a) and 15d-14(a),
As Adopted Pursuant to
Section 302 of the Sarbanes-Oxley Act of 2002

I, Cameron McAulay, certify that:

1. I have reviewed this annual report on Form 10-K of Transphorm, Inc. (the “registrant”);

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant’s other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c. Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d. Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant’s other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

   a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

   b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date:	March 11, 2021	By:	*/s/ Cameron McAulay*
			Cameron McAulay
			Chief Financial Officer
			(Principal Financial and Accounting Officer)

Exhibit 32.1

Certifications of Chief Executive Officer and Chief Financial Officer
Pursuant to
18 U.S.C. Section 1350,
As Adopted Pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002

In accordance with 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, Mario Rivas, Chief Executive Officer of Transphorm, Inc. (the "registrant"), and Cameron McAulay, Chief Financial Officer of the registrant, each hereby certifies that, to the best of their knowledge:

1. The registrant's Annual Report on Form 10-K for the year ended December 31, 2020 to which this Certification is attached as Exhibit 32.1 (the "Report"), fully complies with the requirements of Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934, as amended; and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the registrant.

Date: March 11, 2021

By: */s/ Mario Rivas*
Mario Rivas
Chief Executive Officer
(Principal Executive Officer)

/s/ Cameron McAulay
Cameron McAulay
Chief Financial Officer
(Principal Financial and Accounting Officer)