

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549**

**FORM 8-K**

**CURRENT REPORT**

**Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

**Date of Report (Date of earliest event reported): February 06, 2024**

**DIODES INCORPORATED**

(Exact name of Registrant as Specified in Its Charter)

**Delaware**  
(State or Other Jurisdiction  
of Incorporation)

**002-25577**  
(Commission File Number)

**95-2039518**  
(IRS Employer  
Identification No.)

**4949 Hedcoxe Road, Suite 200**  
**Plano, Texas**  
(Address of Principal Executive Offices)

**75024**  
(Zip Code)

**Registrant's Telephone Number, Including Area Code: 972 987-3900**

(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, Par Value \$0.66 2/3	DIOD	The Nasdaq Stock Market LLC

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§ 230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§ 240.12b-2 of this chapter).

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.

## Item 2.02 Results of Operations and Financial Condition.

On February 6, 2024, Gary Yu, President of Diodes Incorporated, (the “Company”), as well as Brett R. Whitmire, Chief Financial Officer of the Company, Emily Yang, Senior Vice President, Worldwide Sales and Marketing of the Company and Gurmeet Dhaliwal, Director of Investor Relations for the Company, participated in a conference call to discuss the Company’s fourth quarter and fiscal 2023 financial results. A recording of the conference call has been posted on the Company’s website at [www.diodes.com](http://www.diodes.com), and copy of a transcript of the conference call is furnished as Exhibit 99.1 to this Report. Information contained in or accessible through the Company’s website shall not be deemed to be incorporated by reference into this Report.

In the earnings conference call, the Company utilizes financial measures and terms not calculated in accordance with generally accepted accounting principles in the United States (“GAAP”) in order to provide investors with an alternative method for assessing the Company’s operating results in a manner that enables investors to more thoroughly evaluate its current performance as compared to past performance. The Company also believes these non-GAAP measures provide investors with a more informed baseline for modeling the Company’s future financial performance. Management uses these non-GAAP measures for the same purpose. The Company believes that investors should have access to the same set of tools that management uses in analyzing results. These non-GAAP measures should be considered in addition to results prepared in accordance with GAAP, but should not be considered a substitute for or superior to GAAP results and may differ from similar measures used by other companies. For a description, and reconciliation with GAAP, of these non-GAAP measures see the Company’s press release dated February 6, 2024, announcing the Company’s fourth quarter and fiscal 2023 financial results, a copy of which was furnished as Exhibit 99.1 to the Current Report on Form 8-K filed with the Securities and Exchange Commission on February 6, 2024. The information furnished in this Item 2.02, including the exhibit incorporated by reference, will not be treated as “filed” for the purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), or otherwise subject to the liabilities of that section. This information will not be deemed incorporated by reference into any filing under the Securities Act of 1933, as amended (the “Securities Act”), or into another filing under the Exchange Act, unless that filing expressly refers to specific information in this Report.

## Item 7.01 Regulation FD Disclosure.

The transcript of the earnings conference call furnished as Exhibit 99.1 also provides an update on the Company’s business outlook, that is intended to be within the safe harbor provided by the Private Securities Litigation Reform Act of 1995 (the “Act”) as comprising forward looking statements within the meaning of the Act.

The information furnished in this Item 7.01, including the exhibit incorporated by reference, will not be treated as “filed” for the purposes of Section 18 of the Exchange Act, or otherwise subject to the liabilities of that section. This information will not be deemed incorporated by reference into any filing under the Securities Act, or into another filing under the Exchange Act, unless that filing expressly refers to specific information in this Report.

## Item 9.01 Financial Statements and Exhibits.

(d) Exhibits.

<u>Exhibit Number</u>	<u>Description</u>
99.1	<a href="#">Transcript of earnings conference call held on February 6, 2024.</a>
104	Cover Page Interactive Data File (embedded within the Inline XBRL document).

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**SIGNATURES**

Pursuant to the requirements 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.

DIODES INCORPORATED

Date: February 8, 2024

By: /s/Brett R. Whitmire  
Brett R. Whitmire  
Chief Financial Officer

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# REFINITIV STREET EVENTS

EDITED TRANSCRIPT DIOD.OQ - Q4 2023  
Diodes Inc Earnings Call

EVENT DATE/TIME: FEBRUARY 06, 2024 / 10:00PM GMT

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## CORPORATE PARTICIPANTS

**Brett R. Whitmire** Diodes Incorporated - CFO

**Emily Yang** Diodes Incorporated - SVP of Worldwide Sales & Marketing

**Gary Yu** Diodes Incorporated - President & Director

## CONFERENCE CALL PARTICIPANTS

**David Neil Williams** The Benchmark Company, LLC, Research Division - Senior Equity Analyst

**Gary Wade Mobley** Wells Fargo Securities, LLC, Research Division - Senior Analyst

**Matthew D. Ramsay** TD Cowen, Research Division - MD & Senior Research Analyst

**Tristan Gerra** Robert W. Baird & Co. Incorporated, Research Division - Senior Research Analyst

**William Stein** Truist Securities, Inc., Research Division - MD

**Leanne Sievers**

## PRESENTATION

### Operator

Good afternoon and welcome to Diodes Incorporated Fourth Quarter and Fiscal 2023 Financial Results Conference Call. (Operator Instructions)

At the conclusion of today's conference call, instructions will be given for the question-and-answer session. (Operator Instructions)

As a reminder, this conference call is being recorded today, Tuesday, February 6, 2024.

I would now like to turn the call over to Leanne Sievers of Shelton Group, Investor Relations. Leanne, please go ahead.

### Leanne Sievers

Good afternoon and welcome to Diodes' fourth quarter and fiscal 2023 financial results conference call.

I'm Leanne Sievers, President of Shelton Group, Diodes' Investor Relations firm.

Joining us today are Diodes' President, Gary Yu; Chief Financial Officer, Brett Whitmire; Senior Vice President of Worldwide Sales and Marketing; Emily Yang; and Director of Investor Relations, Gurmeet Dhaliwal.

I'd like to remind our listeners that the results announced today are preliminary as they are subject to the company finalizing its closing procedures and customary quarterly reviews by the company's independent registered public accounting firm. As such, these results are unaudited and subject to revision until the company files its Form 10-K for its fiscal year ending December 31, 2023. In addition, management's prepared remarks contain forward-looking statements, which are subject to risks and uncertainties and management may make additional forward-looking statements in response to your questions. Therefore, the company claims the protection of the Safe Harbor for forward-looking statements that is contained in the Private Securities Litigation Reform Act of 1995. Actual results may differ from those discussed today. And therefore, we refer you to a more detailed discussion of the risks and uncertainties in the company's filings with the Securities and Exchange Commission including Forms 10-K and 10-Q.



In addition, any projections as to the company's future performance represent management's estimates as of today, February 6, 2024. Diodes assumes no obligation to update these projections in the future as market conditions may or may not change except to the extent required by applicable law.

Additionally, the company's press release and management statements during this conference call will include discussions of certain measures and financial information in GAAP and non-GAAP terms. Included in the company's press release are definitions and reconciliations of GAAP to non-GAAP items, which provide additional details. Also throughout the company's press release and management statements during the conference call, we refer to the net income attributable to common stockholders as GAAP net income.

For those of you unable to listen to the entire call at this time, a recording will be available via webcast for 90 days in the Investor Relations section of Diodes' website at [www.diodes.com](http://www.diodes.com).

And now, I'll turn the call over to Diodes' President, Gary Yu. Gary, please go ahead.

**Gary Yu** - Diodes Incorporated - President & Director

Thank you, Leanne.

Welcome, everyone to our result conference call.

I'm pleased to be joining you today as Diodes' recently appointed President effective January 2. As announced at the end of last year, my promotion was part of Diodes' multi-year CEO succession plan. Dr. Lu will continue to serve as Chairman and the CEO until at least May 31, 2027, which is consistent with current employment agreement. As many of you may know, I have previously served as Diodes' Chief Operating Officer, and have been with Diodes since 2008. I'm very excited to be serving in this new role and then leading Diodes into the next stage of growth, which will focus on developing a broad portfolio of innovative products to enable customer success in the markets we serve.

In terms of our 2023 result, this past year proved to be a challenging as the consumer, computing, and the communications market experienced an extended slowdown, coupled with inventory rebalancing in the industrial market late in the year, as well as softness in certain area of automotive market. Despite this global weakness, we made notable progress on improving the quality and mix of our product portfolio. We continue to focus on automotive and industrial markets through expanding design wins and increased investments in new product development, which resulted in over 350 new automotive-compliant products.

The combined revenue from those 2 markets expanded to 46% of product revenue in 2023 compared to 42% last year. Our product mix improvements were especially evident in our ability to maintain full-year gross margin near 40%, meeting our target model despite the lower annual revenue. Throughout the year, we continued to drive manufacturing cost reductions, operating efficiency, while also further developing our process technology for expansion of our internal facility utilization. Overall, we maintained strong cash generation in 2023 that enabled us to reduce total debt by \$124 million to \$62 million, maintain a solid cash position over \$315 million and increase total cash less debt by 67% to approximately \$253 million. Additionally, we renewed and expanded our line of credit to approximately \$315 million to provide added financial flexibility.

As we look to 2024, we remain focused on driving further improvements in the quality and the mix of our portfolio with our analog and our power discrete products, including our newly introduced SiC product family, especially targeted at the automotive and industrial markets. We also continue to make a good progress, ramping our previously acquired fab, SPFAB and our GFAB in terms of our process and our product

qualifications, which will support future utilization and that further complements our hybrid manufacturing model.

We believe our total solution sales approach that has been successful in the past, along with a further emphasis placed on key account development will continue to deliver increasing content opportunity, design wins, and a profitable growth in the future.



With that, let me now turn the call over to Brett to discuss our fourth quarter and the full-year financial results as well as our first quarter guidance in more detail.

**Brett R. Whitmire** - Diodes Incorporated - CFO

Thanks, Gary. And good afternoon, everyone.

Revenue for the fourth quarter of 2023 was \$322.7 million compared to \$404.6 million in the third quarter 2023 and \$496.2 million in the fourth quarter 2022. Full-year 2023 revenue was \$1.7 billion compared to \$2 billion in 2022.

Gross profit for the fourth quarter was \$112.5 million or 34.9% of revenue, which reflects the lower revenue impacted by product mix as well as our wafer service agreements. This compares to \$155.9 million or 38.5% of revenue in the prior quarter and \$206.2 million or 41.6% of revenue in the prior year quarter. For the full-year, GAAP gross profit was \$658.2 million and GAAP gross margin was 39.6% effectively at our target model of 40%.

GAAP operating expenses for the fourth quarter were \$91.8 million, or 28.4% of revenue, and on a non-GAAP basis, were \$89 million or 27.6% of revenue, which excludes \$3.8 million of amortization of acquisition-related intangible asset expenses and \$1 million in a restructuring costs gain. This compares to GAAP operating expenses in the prior quarter of \$102 million or 25.2% of revenue, and in the fourth quarter of 2022 of \$109.7 million or 22.1% of revenue. Non-GAAP operating expenses in the prior quarter were \$95.6 million or 23.7% of revenue.

Total other income amounted to approximately \$7.2 million for the quarter, consisting of \$4.8 million of interest income, \$3.5 million of other income, \$1.8 million unrealized gain on investments, a \$2.5 million foreign currency loss and \$0.5 million in interest expense.

Income before taxes and noncontrolling interest in the fourth quarter 2023 was \$27.9 million compared to \$60.5 million in the previous quarter and \$94.8 million in the prior year quarter.

Turning to income taxes. Our effective income tax rate for the fourth quarter was approximately 9.9%. For the full-year of 2023, the tax rate was approximately 17%, which was within our expected range.

GAAP net income for the fourth quarter was \$25.3 million or \$0.55 per diluted share compared to \$48.7 million or \$1.05 per diluted share last quarter and \$92.1 million or \$2 per diluted share in the prior year quarter. Full-year GAAP net income was \$227.2 million or \$4.91 per diluted share compared to \$331.3 million or \$7.20 per diluted share in 2022. The share count used to compute GAAP diluted EPS was 46.3 million shares for both the fourth quarter 2023 and the full-year.

Non-GAAP adjusted net income in the fourth quarter was \$23.4 million or \$0.51 per diluted share, which excluded net of tax, \$3.1 million of acquisition-related intangible asset costs, \$2.8 million gain on investments, \$1.4 million non-cash mark-to-market investment value adjustment and a \$0.7 million gain on restructuring costs. This compares to \$52.5 million, or \$1.13 per diluted share, in the prior quarter and \$79.6 million, or \$1.73 per diluted share, in the fourth quarter 2022. For the full-year, non-GAAP adjusted net income was \$222.8 million, or \$4.81 per diluted share, as compared to \$339 million, or \$7.36 per diluted share, in 2022.

Excluding non-cash share-based compensation expense of \$5.9 million, net of tax, for the fourth quarter and \$24.4 million for the full-year, both GAAP earnings per share and non-GAAP adjusted EPS would have increased by \$0.13 and \$0.53 per diluted share, respectively.

EBITDA for the fourth quarter was \$58.4 million, or 18.1% of revenue, compared to \$90.6 million, or 22.4% of revenue, in the prior quarter and \$129.6 million or 26.1% of revenue in the fourth quarter of 2022. For the full-year, EBITDA was \$404.2 million, or 24.3% of revenue compared to \$520.4 million, or 26% of revenue for 2022.

We have included in our earnings release a reconciliation of GAAP net income to non-GAAP adjusted net income and GAAP net income to EBITDA, which provides additional details.



Cash flow generated from operations was \$38.4 million for the fourth quarter and \$280.9 million for the full year. Free cash flow was \$11.1 million in the fourth quarter, which included \$27.3 million for capital expenditures, and for the full year, free cash flow was \$130.1 million, including \$150.8 million for CapEx. Net cash flow was a positive \$20.9 million, and for the full year, net cash flow was a negative \$22.6 million, which includes the net paydown of \$124.3 million of total debt.

Turning to the balance sheet. At the end of fourth quarter, cash, cash equivalents, restricted cash plus short-term investments totaled approximately \$329 million. Working capital was \$794 million and total debt, including long-term and short term was \$62 million.

In terms of inventory, at the end of fourth quarter, total inventory days were approximately 160 as compared to 124 last quarter. Finished goods inventory days were 49 compared to 34 last quarter. Total inventory dollars increased \$46.1 million from the prior quarter to \$389.8 million. We increased inventory during the quarter in order to support short lead time orders and also prepare for the lower output expected in the first quarter due to Chinese New Year holiday. Total inventory in the quarter consisted of a \$34.6 million increase in finished goods, an \$8.1 million increase in work in process and a \$3.4 million increase in raw materials.

Capital expenditures on a cash basis were \$27.3 million for the fourth quarter, or 8.5% of revenue, and \$150.8 million, or 9.1% of revenue, for the full-year and within our target range of 5% to 9% as we continue to invest in the future growth and expansion of our business.

Now turning to our outlook. For the first quarter of 2024, we expect revenue to be approximately \$305 million, plus or minus 3%. We expect GAAP gross margin to be 34% plus or minus 1%. Non-GAAP operating expenses, which are GAAP operating expenses adjusted for amortization of acquisition-related intangible assets, are expected to be approximately 28.7% of revenue, plus or minus 1%. We expect net interest income to be approximately \$2 million. Our income tax rate is expected to be 18%, plus or minus 3%, and shares used to calculate EPS for the first quarter are anticipated to be approximately 46.5 million.

Not included in these non-GAAP estimates is amortization of \$3.1 million after tax, for previous acquisitions.

With that said, I will now turn the call over to Emily Yang.

**Emily Yang** - Diodes Incorporated - SVP of Worldwide Sales & Marketing

Thank you, Brett, and good afternoon.

Revenue in the fourth quarter was down 20% sequentially and slightly below the midpoint of our guidance. Our global POS decreased in the quarter and our disti inventory increased slightly, remaining above our defined normal range of 11 to 14 weeks.

Looking at Global Sales in the fourth quarter. Asia represented 78% of revenue; Europe 14%; and North America 8%. For the full-year of 2023, Asia represented 71% of revenue; Europe 17%; and North America 12%.

In terms of our end markets, industrial was 23% of Diodes' fourth quarter product revenue; automotive 18%; computing, 25%; consumer 19%; and communications 15% of product revenue. Our automotive and industrial end markets combined total 41% of the fourth quarter product revenue, representing the seventh consecutive quarter above our target model of 40%. For the full-year, industrial was 27%, auto 19%, computing 23%, consumer 18% and communications 13%. Auto and industrial revenue in 2023 reached a record 46% of product revenue compared to 42% last year.

Now let me review the end markets in greater detail. Starting with the automotive market. In the fourth quarter, automotive was 18% of our total product revenue, which is a slight decrease from the last quarter's 19%. We began seeing some slowdown along with inventory rebalancing in Q4 and believe this will continue into the first quarter. For the full-year, revenue reached a record 19% of product revenue compared to 15% last year, which represented a 28% compounded annual growth rate from our initial launch into the auto market in 2013, which was only about 3% revenue at that time. Over this time period, our content per car increased from \$28 in 2013 to over \$160 in 2024 and Diodes' focus will continue to be on the content expansion going forward.



In 2023, we introduced more than 350 new automotive-compliance products, demonstrating our commitment to this market segment. New products continue to drive the expansion of our design pipeline and total available market, while also improving our product mix. Even though we still see pockets of softness in the automotive market, design momentum has remained very strong for Diodes.

During the fourth quarter, our TVS diodes, and ideal diode controllers continued to gain traction, while our LDOs are designed into applications for ADAS, smart cabins, Telematics and Infotainment. The adoption of our USB Type-C Re-Drivers, DisplayPort active crossbar mux and MIPI switches has increased significantly in the rear seat entertainment, smart carpet, ADAS and active cable designed for automotive applications. We also achieved several design wins for our crystal oscillators and PCI Express clock generator for the development of new ADAS designs.

Our newly updated USB-Power Delivery controller portfolio that supports extended power range is gaining traction from in-vehicle infotainment systems and USB-Type C charging functions. Our SBR products are also seeing momentum in battery management systems, display, lighting and headlight systems.

Also during the quarter, we saw positive design momentum for our newly released N-Channel MOSFETs, specifically targeting the growing demand for silicon carbide solutions in the electric and hybrid-electric vehicle automotive subsystems. These MOSFETs are tailored for applications such as battery chargers, onboard chargers, high-efficiency DC-DC converters, motor drivers and traction inverters. Additionally, our SBR and Schottky product shipments have ramped up significantly for EV applications.

In the industrial market, fourth quarter revenue represented 23% of total product revenue, which was a 3 percentage point decrease sequentially due to the weaker demand and inventory rebalancing we mentioned last quarter. Since our last call, we have seen this market witness broaden.

For the full-year of 2023, industrial represented 27% of product revenue. Even despite the market softness, our design pipeline remained very strong throughout the year, and we continue to see new application opportunities as our content has expanded.

In terms of progress on the product initiatives, our PCI Express 3 packet switch are winning designs across diverse applications, including Artificial Intelligence of Things, automation, inspection, power plant controllers, test instrument applications. These packet switches enable SoCs to connect to various endpoint devices such as wired/wireless networks, SSD storage and specific industrial controllers over the industrial standard PCI Express bus. We secured new design wins for a range of essential components like HDMI, USB Type-C, DisplayPort, MIPI re-drivers and mux switches in commercial displays, drone and robotic applications.

One area of strength in the industrial market has been solar, where our SBR products have gained traction in residential roof solar panels along with our real-time clocks being used in solar systems and our TVS products being designed-in for data line protection in battery management systems for solar energy storage and battery cells. Additionally, our silicon carbide MOSFETs have been gaining traction in industrial motor drivers, solar inverters, data center and telecom power supplies.

Turning to computing markets. Fourth quarter revenue represented 25% of product revenue, which is flat to last quarter. Full-year revenue represented 23% of total product revenue compared to 24% last year. After a few quarters of inventory adjustments, we are seeing customer inventory levels returning back to normal levels. Due to the impact of Chinese New Year holiday on the first quarter revenue, we expect to see some recovery beginning in the second quarter and progressing in the second half of the year.

In terms of design wins, we secured new designs and ramped production for our SBR and Schottky diodes, in notebook adapters and power applications, servers, as well as notebook motherboards. Protection devices for high-speed data lines are being designed into Chromebooks to protect the Type-C port, and our TVS products are being used to protect the power sourcing line of the solid-state drive modules for data center servers. We have also gaining momentum for signal integrity and connectivity products for various protocols in computing applications, including workstations, gaming, notebook/desktop, docking stations and add-in cards. We also secured new design wins for PCI Express clock buffers, crystal oscillators and silicon carbide Schottky diodes in servers, machine learning, and for various Power Factor Correction applications in servers.

In the communication market, fourth quarter revenue was 15% of product revenue, which is an increase from 12% in the third quarter. Revenue for the full-year represented 13% of product revenue compared to 15% last year. After a few quarters of inventory adjustments in the smartphones



specifically, we are seeing customer inventory levels returning back to normalized levels. In the telecom and networking market, inventory rebalancing continues.

In terms of design wins in the quarter, our timing products, including clock buffers and crystal oscillators are seeing new wins for smart NICs and connectivity products like MIPI switches and our TVS protection products are seeing adoption in smartphone applications.

And lastly, in the consumer market, fourth quarter revenue represented 19%, which is a 1 percentage point increase compared to last quarter. Similar to the inventory situation in computing market and also in smartphones, after a few quarters of rebalancing, customer inventory is now mostly clean. Following the Chinese New Year holiday and the typical seasonality for consumer in the first quarter, we expect to see some recovery late in the second quarter and into the second half of the year. For the full-year, revenue in consumer market represented 18% of product revenue compared to 19% last year.

During the quarter, we have seen strong adoption of our USB Type-C Display active crossbar mux, USB Type-C Display ReDrivers and retimers, PCI Express clock generators, real-time clocks, and signal conditioners in various applications like tablets, docking stations, USB Type-C active cables, cable extenders, cameras, televisions and monitors. We also secured design wins for our MOSFETs and MIPI switches and ReDrivers in gaming and VR/AR applications.

In summary, although the 3C markets have been slower to recover and overall global demand remains soft, we are encouraged by the continuous progress we have made over the past year in the automotive and industrial markets. Our team remains focused on driving new product introductions, product mix improvements, design win momentum as well as a focus on key account development. Diodes' strong cash generation has enabled us to maintain investments in support of the future growth and expansion of our business that positions us well as the global market improves throughout the coming year.

With that, we now open the floor to questions.

Operator?

## QUESTIONS AND ANSWERS

### Operator

(Operator Instructions) Today's first question comes from Matt Ramsay with TD Cowen.

**Matthew D. Ramsay** - TD Cowen, Research Division - MD & Senior Research Analyst

It's obviously been an interesting period here as the inventory and the industry have corrected. What I wanted to start the conversation with is maybe to give a little bit more detail on where you think your sell-in for the March quarter guidance is across the different segments relative to the sell-through and how much inventory we might still need to burn down. If you could give any color by segment, that would be helpful and just where you think you are in terms of getting to that sell-in, sell-through balance, so we can start to have revenue reaccelerate out the back end.

**Emily Yang** - Diodes Incorporated - SVP of Worldwide Sales & Marketing

This is Emily. Let me address your question. So, I think from the market segment point of view, right, like I mentioned earlier, to start with automotive, what we're seeing is the inventory rebalancing kind of started in Q4, and it will continue into the first quarter. And then from the industrial market segment, we experienced weaker demand in Q4 plus inventory rebalancing. Unfortunately, we've seen the weakness broaden.



And from the computing point of view, customer inventory is pretty clean. I think the only concern or estimate that we need to keep in mind is the Chinese New Year. So, this is definitely going to impact some of the production as well as the output. We do expect the recovery in the second quarter and progressing into the second half of the year.

From a communication point of view, I talked about smartphones. Customer inventory is pretty much normalized. But for the typical telecom networking or the enterprise point of view, we see the inventory rebalancing will continue. So, I think from the consumer market segment, because it's pretty wide range of applications, but I think in general, what we see in customer inventory is relatively clean. We do expect more ramp up in the late second quarter based on usual consumer seasonality cycles, right?

So that's really what we see overall by each of the market segments and the inventory situation.

**Matthew D. Ramsay** - TD Cowen, Research Division - MD & Senior Research Analyst

I guess as my follow-up question, and this maybe will be across the different business segments. I wanted to ask about the pricing environment. So -- and maybe from 2 angles. First of all, we do hear a lot about some of your larger competitors may be getting more price aggressive in certain end markets. So that's one element to it. And then secondly, I wanted to kind of compare, what you guys guided to a bit above \$300 million for the March quarter. And if you compare that to, say, 3 or 4 years ago when you were at similar revenue level, maybe what the pricing has done over that period of time? Do you see -- pricing obviously increased post the pandemic when the supply was all tight. Is it coming back down rapidly? Are we -- any commentary that you have on the pricing trends would be really helpful.

**Emily Yang** - Diodes Incorporated - SVP of Worldwide Sales & Marketing

Yes. So, I think usually, pricing is always a balance between demand and supply, right? So, when you see a weaker demand market, usually you definitely get more of the price pressure. This also varies by the type of product, right? If it's more differentiated, you usually get a little bit less price pressure versus very deep commodity, which is really that you have a lot of competitors within the same arena, right? So, what we've been saying all along is we focus on product mix improvement, which really means that strategically walking away from some of the key commodity area, right?

So, in general, that will continue to be our focus, and we believe with this execution of the product mix initiatives, continue to improve. That will help overall Diodes, not only from the margin point of view, but also from the revenue point of view. I think the second part of your question is we guided around 300 some range. And if I just look back to the historic numbers, let me see, I would say probably back to 2000 -- year 2000, so that's a pre-COVID time frame, that's also before the LITE-ON Semiconductor acquisition. I just look at, for example, the 3Q 2000 and that is about 310 revenue quarterly, and our margin is around 35.9%.

And keep in mind that that's actually before the LITE-ON Semiconductor acquisition, and that pretty much gave us about 3% margin degradation. So that will be representing about 32% margin. The other difference is actually also from the underloading capacity point of view. It's quite significantly different from what we have right now versus before. So, I think that's pretty much the reference point, right? So, if you look at the overall margin, I think majority of the pressure is actually coming from the underloading. And that's also the area that we are driving very aggressively to backfill some of the capacities, improve the utilization in the near future, right? So, I would say that's really the second part of your question. I hope I answered it.

**Operator**

And our next question today comes from Gary Mobley with Wells Fargo Securities.

**Gary Wade Mobley** - Wells Fargo Securities, LLC, Research Division - Senior Analyst

Emily, thanks for the detailed response to Matt's question, and that's where I want to pick up and start. So, you covered the pricing dynamics, the underutilization. But let me ask a question on gross margin in a different way. Given that Q1 should represent a seasonal low point, at least in the near term, would you expect the first quarter gross margin to be the bottom for the year? And maybe more pointedly, do you expect -- what do you expect for gross margin for the full-year? And within that, how much of a headwind does the wafer service agreements represent?

**Emily Yang** - Diodes Incorporated - SVP of Worldwide Sales & Marketing

Yes, Gary. So, let me answer the first portion of the question, and then I'll let Brett or Gary answer the manufacturing service agreement, right? So, definitely, Q1 with our guidance, our revenue decreased about 5.5%, matching pretty much our seasonality, right? The market is still extremely dynamic. And definitely, we are not ready to guide the second quarter. But based on the usual seasonality, usually second quarter will be a growth quarter and then the third quarter. Because the lack of, I would say, overall visibility, what we truly believe the second half is definitely going to be stronger than the first half, right?

I think we just need to continue to monitor the overall market. As we grow from the revenue point of view, as we also have time to really qualify, importing additional products into our internal fab, the utilization will continue to improve, right? So, it's difficult for us to forecast the whole year. That's also not something we usually provided. But I think with the expectation of the second half will be stronger than the first half, with the product mix initiative, we continue to drive, with the total solution sales approach that we're confident that our gross margin will improve over time.

**Gary Wade Mobley** - Wells Fargo Securities, LLC, Research Division - Senior Analyst

Before I ask my follow-up, I did want to congratulate Gary on his new role. I forgot to mention that.

**Gary Yu** - Diodes Incorporated - President & Director

Well, thank you, Gary. It's my honor.

**Emily Yang** - Diodes Incorporated - SVP of Worldwide Sales & Marketing

Brett, you want to talk a little bit about the manufacturing?

**Brett R. Whitmire** - Diodes Incorporated - CFO

Yes. I would just -- Gary, I would just add to what Emily said regarding what we'd expect transitionally on margin connected to the revenue expectation that we're not guiding, but from a seasonal perspective, that's what we would expect. And then as for wafer service agreement, we believe we've absorbed that transitionally and going forward, hopefully, what we would see is that would kind of be a neutral to tailwind for us as we continue to work on technology qualification and the ability to port our product into these locations as well as ability to ramp revenue and that capacity being available to us.

**Gary Wade Mobley** - Wells Fargo Securities, LLC, Research Division - Senior Analyst

It looks like you're bringing down -- excuse me, your non-GAAP operating expenses by about 12%, 13% from where they were a year ago. How much of that is variable versus structural? And the reason I'm asking the question is just I'm trying to get a sense of by how much operating expenses improved when revenue improves.



**Brett R. Whitmire** - Diodes Incorporated - CFO

Yes. So basically, what you see in that is a combination of things. So, we have taken -- we continue to take action connected to variable things, as you mentioned, but we're also doing actions that provide restructuring inside the company to drive efficiency. We've also impacted with the performance we've had, that's been an impact on variable pay. And we continue to look at where our investments are. I think what you'll see is our continued focus on R&D and that investment being kind of flat or tied with revenue growth. And from an SG&A perspective, continuing to look for opportunities to bring that down to drive structural efficiency and then not bring it up any more than some portion of what the revenue growth would be.

**Operator**

Our next question today -- excuse me, our next question today comes from David Williams with Benchmark.

**David Neil Williams** - The Benchmark Company, LLC, Research Division - Senior Equity Analyst

Let me add my congratulations to Gary.

**Gary Yu** - Diodes Incorporated - President & Director

Thanks, David.

**David Neil Williams** - The Benchmark Company, LLC, Research Division - Senior Equity Analyst

Absolutely. So, a lot of my questions were around the gross margin, but maybe just on the order velocity and if you can provide any color there. It sounds like it's still a mixed bag, but inventories are clearing in better -- in a few places. So just as you think about your order velocity through the quarter and maybe how those have trended so far into this first quarter here?

**Emily Yang** - Diodes Incorporated - SVP of Worldwide Sales & Marketing

Yes. So, I think we definitely see improvement from the book-to-bill ratio point of view. And so, I think there's a lot of positive signals on the inventory side. I talked about within the 3Cs, it's getting cleaner than ever before. So, I think this is all positive. I think the unknown is really the actual demand, especially after the Chinese New Year, right? I think the China recovery is still extremely slower than anybody's expectation. So, I think overall, unfortunately, still weaker from the visibility point of view, we just need to continue to monitor it very closely. But definitely there's some good positive signs as well.

**Gary Yu** - Diodes Incorporated - President & Director

And David, this is Gary. I will put some comment on that, too. So, I know we are going to put a lot of effort to the key account focus. That being said, we're going to put a lot of sales effort to work with key account to create demand. At the same time, when you see the short lead time PO continue to increase during this kind of period, and we kind of work with the distributor to put the right inventory in their warehouse to make sure they can handle this kind of short demand -- short lead time in the PO in time lag basis.

**David Neil Williams** - The Benchmark Company, LLC, Research Division - Senior Equity Analyst

And I guess, do you get a sense that your customers that they are being fairly rational with their inventories and taking them to normal levels or do you get a sense that maybe those are being brought down too low and you might get a bit of a snapback because of replenishment there?

**Emily Yang** - Diodes Incorporated - SVP of Worldwide Sales & Marketing

Yes. I think that's a really challenging question, David. I think it's really down to the actual customer and their experience as well as their view. Sometimes it also involves their financial cash flow situation. So, it is a little bit dynamic, right? So what we see, I think what Gary mentioned is we start to see more urgent orders, which is really driven by probably not enough of the inventory buffer that they build into their formula, right? So, because the customer base varies a lot, that also varies a lot as well, right? So that's really where the challenge.

But I think just like Gary mentioned, we focus more on to the quality of the products on the shelf. So, we can actually pretty much quickly adjust our support to the customers with this kind of very short lead time orders, right? So that's really pretty much what we focused on and will continue to focus for the next few quarters as the market continue to evolve, right?

**Gary Yu** - Diodes Incorporated - President & Director

Any other questions?

**Emily Yang** - Diodes Incorporated - SVP of Worldwide Sales & Marketing

Other questions?

**Gary Yu** - Diodes Incorporated - President & Director

Hello?

**David Neil Williams** - The Benchmark Company, LLC, Research Division - Senior Equity Analyst

That was it for me.

**Emily Yang** - Diodes Incorporated - SVP of Worldwide Sales & Marketing

It just went silent.

**Operator**

Our next question today comes from William Stein with Truist Securities.

**William Stein** - Truist Securities, Inc., Research Division - MD

Also, Gary, I wanted to offer my congrats.



**Gary Yu** - Diodes Incorporated - President & Director

Thank you so much, Bill.

**William Stein** - Truist Securities, Inc., Research Division - MD

I'm hoping you can talk to the split of revenue that went direct versus to the channel in the quarter.

**Emily Yang** - Diodes Incorporated - SVP of Worldwide Sales & Marketing

Yes. So, for the fourth quarter and our split by the channel is actually 65% distribution and 35% direct. This number usually varies a little from quarter-to-quarter. It depends on the customer demand and some of the order situation. I usually say rule of thumb is probably about 2/3 distribution, 1/3 the direct portion.

**William Stein** - Truist Securities, Inc., Research Division - MD

Also, I wonder to what degree the inventory build helped gross margins for the quarter. Usually when -- it relates to a question I'll ask in -- concurrently with this, and that is utilization. Can you tell us what fab utilization was in the quarter, what you expect it to be next quarter? And then also the dynamic that I expect occurred in the Q4, which is when you build inventory like that, normally, it's a boost to gross margin? And if you can quantify that?

**Brett R. Whitmire** - Diodes Incorporated - CFO

Well, I think what you saw, Will, in terms of our -- we've talked about strategically putting availability in place, both from a kind of finished goods availability, but also from the availability as we procure about half of our wafers on the outside so that we can have flexibility in mix to build what we need. And so, as you look at that and you look at utilization and then you also look at typically in fourth quarter, we're building in anticipation and preparing for Chinese New Year. And so, when you look at the combination of that, what we saw from a utilization perspective was something that was pretty consistent.

We continue to run below where we want to be. We're -- and we believe that is something that's going to help us as we go forward as revenue starts to hopefully strengthen and we're in a position to be able to drive more inside the factory. So, we didn't really -- obviously it is all related. But as we look at fourth quarter, it wasn't something that we drove utilization up in order to deliver those results.

**Operator**

And our next question today comes from Tristan Gerra with Baird.

**Tristan Gerra** - Robert W. Baird & Co. Incorporated, Research Division - Senior Research Analyst

So just going back on gross margin, what's the impact on the utilization in terms of bids? And sorry, if I missed, if you quantified what the utilization rates are currently? And then is there a way to break down how much of the underutilization is from the service agreements where I know you're qualifying new products to fill capacity as opposed to just a general weakness in demand?

**Brett R. Whitmire** - Diodes Incorporated - CFO

Well, what we've talked about, Tristan, was we talked about the fact that from an overall utilization perspective, we ran pretty consistent from third to fourth quarter. We continue to run below where we want to be. In doing that, we have, I think, successfully been able to get better availability



in place to support a short-time ordering that we're seeing. We've also been able to address getting -- our hybrid manufacturing model services about half of our wafers outside the company. So, we've put some more availability in place on that. That's not something that really drives up our utilization. And we believe that from a wafer service contract perspective, we've pretty much absorbed the negative impacts in transition, and we believe going forward, that's a kind of neutral to positive thing as we continue to qualify our technologies internal.

We can bring loadings internal, and we can help enable revenue growth. But in total, we're running below where we want to be, and we have been at that place for really all of this year. And we continue to be there in anticipation for things to strengthen as Emily had kind of gone through and what we anticipate kind of going into '24.

**Gary Yu** - Diodes Incorporated - President & Director

Yes. And one comment I would like to put here, Tristan, and this is Gary, and when we're facing several key account customers, they kind of talk about the utilization of our internal wafer fab. I think that really kind of -- think about it is like in the future growth, they really want to make sure Diodes have this kind of capability, can support their growth in the future. So, I would say like we are still in the kind of underutilization level, as Brett mentioned about, but for the future as long as we qualify our product and process into our own internal fab and we should have this kind of capability to support more business to our customer.

**Tristan Gerra** - Robert W. Baird & Co. Incorporated, Research Division - Senior Research Analyst

And then for my follow-up, I believe most of your pricing agreements are in automotive. So outside of automotive in terms of your revenue that's not locked into pricing agreement, I mean what type of feedback are you getting from customers? Are people trying to ask for better pricing or is it relatively stable? And how do you think that evolves through the rest of this year?

**Emily Yang** - Diodes Incorporated - SVP of Worldwide Sales & Marketing

Yes. I think, Tristan, it really varies a lot. It depends on the end market, right? So, you're absolutely right. Usually, in the automotive market segment, we actually have a longer time price matrix type of agreement in place with the customers. And for example, in the computing market segment, it's going to be a lot more function and feature protocol-driven discussion than some of the others. So of course, price competitiveness is a given, right? If we take more extreme in the consumer market, because the overall cost is very sensitive. The demand is weaker, you tend to get more of the pricing discussions, right?

So, I think it varies a lot. It also varies from customer to customer. But in general, right, definitely as the demand is weaker, you definitely get a little bit more price pressure. It's almost going back to my discussion earlier. It depends on the product type. If it's a function feature rich type of product, you get less of the competition. If it's a deep commodity, you get more. And just keep in mind that pre-COVID, Diodes actually had a 1.5% to 2% built in quarterly price reduction. So, we are actually definitely structured to support this kind of overall pricing, I would say, trend. And the way to really focus on is actually improve the manufacturing efficiency and the cost down to really balance this kind of pressure that we're seeing in the market.

**Operator**

Thank you. And this concludes today's question-and-answer session. I'd like to turn the conference back over to the company's President, Gary Yu.

**Gary Yu** - Diodes Incorporated - President & Director

Thank you, everyone, for participating on today's call. We look forward to reporting our progress on next quarter's conference call.

Operator, you may now disconnect it.



## Operator

Thank you, sir. This concludes today's conference call. We thank you all for attending today's presentation. You may now disconnect your lines, and have a wonderful day.

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