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

FORM 6-K

**REPORT OF FOREIGN PRIVATE ISSUER PURSUANT TO RULE 13a-16 OR 15d-16
OF THE SECURITIES EXCHANGE ACT OF 1934**

For the month of October 2026 No.2

Commission File Number 0-24790

TOWER SEMICONDUCTOR LTD.

(Translation of registrant's name into English)

Ramat Gavriel Industrial Park
P.O. Box 619, Migdal Haemek, Israel 2310502
(Address of principal executive offices)

Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F.

Form 20-F ☒ Form 40-F ☐

**On October 13, 2026, the Registrant and Semtech Announce SiGe Partnership Expansion
to Scale Power-Efficient Analog Connectivity for Data Centers**

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.

TOWER SEMICONDUCTOR LTD.

Date: October 13, 2026

By: /s/ Nati Somekh

Name: Nati Somekh

Title: Corporate Secretary

Tower Semiconductor and Semtech Expand SiGe Partnership to Scale Power-Efficient Analog Connectivity for Data Centers

Multi-year agreement expands dedicated capacity across Tower's global fab network to support the companies' growth in optical and copper interconnects for next-generation AI infrastructure

MIGDAL HAEMEKE, Israel, and Camarillo, California, Oct. 13, 2026 -- Tower Semiconductor (Nasdaq/TASE: TSEM), the leading foundry for high-value analog semiconductor solutions, and Semtech Corporation (Nasdaq: SMTC), a leading provider of high-performance semiconductors powering AI data center networking and intelligent, connected Internet of Things ("IoT") devices worldwide, today announced an expanded multi-year agreement that builds on the companies' 20-year partnership. Under the agreement, Semtech will invest in securing dedicated silicon germanium (SiGe) capacity at Tower in support of its strong design wins and demand for AI Data Center optical interconnect components.

AI's next constraint is power, and a growing share of that power is spent moving data rather than computing it. As AI clusters scale across racks, rows and campuses, the energy cost of moving each bit is becoming central to how much useful work each accelerator can deliver. Each step in the speed roadmap, from 800G to 1.6T and on to 3.2T, raises the requirements for bandwidth, reach and power per bit, and increases the importance of the high-speed analog front end that drives and receives the signal.

Semtech's signal integrity portfolio, including transimpedance amplifiers (TIAs), modulator and laser drivers and linear equalizers, is built on Tower's SiGe process technology and serves fully retimed optics (FRO), linear pluggable optics (LPO), linear receive optics (LRO), near-packaged optics (NPO), eXtra-dense pluggable optics (XPO), linear equalizers on PCB and active copper cables (ACC). Semtech believes that, together, these products position it to address copper links within the rack and optical links across the data center as the industry moves to its next generation of architectures.

A testament to the results of the partnership is Semtech's recent Optical Component Innovation (Chip/Wafer) award at the European Conference on Optical Communication (ECOC) 2026. The award recognizes Semtech's 224 Gbps per Lane TIA Family for Linear Pluggable Optics built on Tower's leading-edge SiGe technology. Tower and Semtech continue to work closely not only on capacity but also on joint technology roadmap designed to secure product leadership in multi-generational AI data center interconnects.

The secured capacity spans Tower's fabs in the United States, Israel and Japan, adding supply resilience and geographic diversification to Semtech's manufacturing strategy. Building on current production, the agreement gives Semtech additional supply assurance as demand for its SiGe-based products is expected to grow across a broadening base of customer programs and end markets.

"Connectivity is now a primary factor in how far AI systems can scale," said Hong Hou, Semtech President and Chief Executive Officer. "Our customers are scaling interconnect bandwidth quickly and at massive scale. Meeting that demand requires long-term capacity planning and commitment with our manufacturing partners. Tower has been a trusted partner to Semtech for 20 years, and we are very pleased with our partnership agreement that secures dedicated SiGe capacity across three regions to grow across copper and optical interconnects, from 800G and 1.6T today through 3.2T and beyond."

"It is a source of profound satisfaction that our partnership with Semtech has grown so strong," said Russell Ellwanger, Chief Executive Officer, Tower Semiconductor. "Together, we are driving truly accretive, platform-level solutions that help advance their designs delivering best-in-class figures of merit across present-generation, next-generation and N+2 technologies. By qualifying these solutions well ahead of market need, we both stand fully prepared for immediate implementation as the market moves into these generations. In doing so, we are the key drivers of the technologies carrying the market forward, ensuring a continual expansion of our already leading market share in optical transceiver connectivity within this high-growth market."

For additional information about Tower's SiGe and SiPho technology platforms, visit [here](#).

About Tower Semiconductor

Tower Semiconductor Ltd. (NASDAQ/TASE: TSEM), the leading foundry of high-value analog semiconductor solutions, provides technology, development, and process platforms for its customers in growing markets such as consumer, industrial, automotive, mobile, infrastructure, medical and aerospace and defense. Tower Semiconductor focuses on creating a positive and sustainable impact on the world through long-term partnerships and its advanced and innovative analog technology offering, comprised of a broad range of customizable process platforms such as SiPho, SiGe, BiCMOS, mixed-signal/CMOS, RF CMOS, CMOS image sensor, non-imaging sensors, displays, and integrated power management (BCD and 700V). Tower Semiconductor also provides world-class design enablement for a quick and accurate design cycle as well as process transfer services including development, transfer, and optimization, to IDMs and fabless companies. To provide multi-fab sourcing and extended capacity for its customers, Tower Semiconductor currently owns one operating facility in Israel (200mm), two in the U.S. (200mm), and two in Japan (200mm and 300mm) which it owns through its 51% holdings in TPSCo and shares a 300mm facility in Agrate, Italy with STMicroelectronics. For more information, please visit: www.towersemi.com.

Tower Semiconductor's Safe Harbor Regarding Forward-Looking Statements

This press release includes forward-looking statements, which are subject to risks and uncertainties. Actual results may vary from those projected or implied by such forward-looking statements. A complete discussion of risks and uncertainties that may affect the accuracy of forward-looking statements included in this press release or which may otherwise affect Tower's business is included under the heading "Risk Factors" in Tower's most recent filings on Forms 20-F, F-3, F-4 and 6-K, as were filed with the Securities and Exchange Commission (the "SEC") and the Israel Securities Authority. Tower does not intend to update, and expressly disclaim any obligation to update, the information contained in this release.

About Semtech

Semtech Corporation (Nasdaq: SMTC) is a leading provider of high-performance semiconductors powering AI data center networking and intelligent, connected IoT devices worldwide. Our global teams are committed to empowering solution architects and application developers to develop breakthrough

products for the infrastructure, industrial and consumer markets. To learn more about Semtech technology, visit us at [Semtech.com](https://www.semtech.com) or follow us on [LinkedIn](#) or [X](#).

Semtech's Forward-Looking and Cautionary Statements

This press release contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. These statements relate to future events or to Semtech's future financial performance, including statements regarding the anticipated benefits of the expanded agreement with Tower, the expected expansion, timing and availability of dedicated SiGe manufacturing capacity, anticipated demand for Semtech's products and growth in AI data center interconnect markets, Semtech's design win pipeline, and the companies' technology roadmaps, which reflect the current analysis of existing information. Statements containing words such as "believe," "will," "expect," "anticipate," "intend," "see," "designed," or "positioned," or other similar expressions constitute forward-looking statements, but the absence of these words does not mean that a statement is not forward-looking.

Forward-looking statements involve known and unknown risks, uncertainties, and other factors that could cause Semtech's actual results, performance, and achievements to differ materially from those expressed or implied by such forward-looking statements, including, but not limited to: Tower's ability to install equipment and expand SiGe manufacturing capacity at its fabs on the anticipated timeline, or at all, including as a result of circumstances outside of Tower's control; the risk that demand for Semtech's SiGe-based products does not develop as anticipated or that Semtech does not fully utilize the capacity reserved for it under the agreement; the risk that Semtech's design wins do not result in production orders or revenue at the levels or on the timing anticipated; the pace of AI data center investment and the rate of adoption of next-generation interconnect speeds; Semtech's reliance on Tower for the manufacture of its SiGe-based products and the concentration of that manufacturing in a limited number of facilities, including in Israel; competitive pressures and pricing; supply chain constraints; the impact of adverse changes to general economic conditions, including economic slowdowns, inflation, interest rate changes, recessions, and the impact of tariffs or retaliatory tariffs; and the other factors and risks set forth in Semtech's filings with the U.S. Securities and Exchange Commission, including (i) the "Risk Factors" section of Semtech's Annual Report on Form 10-K for the fiscal year ended January 25, 2026 and (ii) subsequent Quarterly Reports on Form 10-Q. The forward-looking statements and information contained herein speak only as of the date of this release. Semtech undertakes no obligation to update any forward-looking statements or information to reflect events or circumstances after the date of this press release, except as required by applicable law.

Semtech and the Semtech logo are registered trademarks or service marks of Semtech Corporation or its subsidiaries. All other trademarks, service marks and trade names mentioned in this press release are the property of their respective owners. SMTC-P

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