
FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month March 2020 No. 3

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 Form 20-F or Form 40-F.

Form 20-F

Form 40-F

Indicate by check mark whether the registrant by furnishing the information contained in this Form is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934.

Yes

No

**On March 23, 2020, the Registrant Announced the Release of Design Kits
for a Novel Technology that Dramatically Reduces Power Consumption and
Die Size of Power Management ICs**

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: March 23, 2020

By: /s/ Nati Somekh

Name: Nati Somekh

Title: Corporate Secretary



NEWS ANNOUNCEMENT

FOR IMMEDIATE RELEASE

Tower Semiconductor Releases Design Kits for a Novel Technology that Dramatically Reduces Power Consumption and Die Size of Power Management ICs

Offers more than 35% efficiency improvement with record-low RDSon of 6mΩmm² and 24V operation addressing consumer, industrial, automotive and computing markets

MIGDAL HAEMEK, Israel, March 23, 2020 – Tower Semiconductor (NASDAQ/TASE: TSEM), the leader in high-value analog semiconductor foundry solutions, today announced the release of design kits for a novel 0.18um high-performance power management technology, which offers over 35% power efficiency improvement and/or equivalent amount of die-area directly contributing to the die's price competitiveness. This new offering enables scalable IC operation of up to 24 volts making it ideal for the world's growing consumer, industrial, automotive, and computing markets. This complements the Company's previously announced low-voltage, 65nm Power BCD process, as well as its high-voltage 140V Resurf bulk and 200V SOI technologies, providing customers with best-in-class performance across the entire range of 1.2V to 200V from a single foundry with the same design tools and design experience. The technology builds on six generations of the Company's very successful existing high-performance 0.18um power management platforms and is largely backward compatible making it easy to port existing parts and designs to the more efficient novel process.

“We are very excited to announce the release of design kits for this novel technology that provides our customers with breakthrough performance not available elsewhere,” said Shimon Greenberg, Vice President and General Manager of Power Management Business Unit, Tower Semiconductor. “We are committed to continue our investment in developing and providing best in class Power Management technology enabling our customers to bring to market advanced products and gain share in this large and growing segment of the semiconductor market”.

Specifically, this process offers a profoundly lower RdsOn with record-breaking 6mΩmm², 24V operation, smaller footprint, scalable power transistors, and low production mask count, enabling significant performance and cost advantages. In addition, its robust design with high breakdown voltage at all operating conditions provides enhanced IC reliability making it ideal for high-power monolithic ICs in applications such as: DC/DC converters, load switches, PMIC and motor drivers used in laptop processors and fans, drones and robotic motor drivers used in the consumer, computing, automotive and industrial markets.

For additional information about Tower Semiconductor's technology, please click [here](#).

About Tower Semiconductor

Tower Semiconductor Ltd. (NASDAQ: TSEM, TASE: TSEM), the leader in high-value analog semiconductor foundry solutions, provides technology and manufacturing platforms for integrated circuits (ICs) in growing markets such as consumer, industrial, automotive, mobile, infrastructure, medical and aerospace and defense. Tower Semiconductor's focuses on creating 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 SiGe, BiCMOS, mixed-signal/CMOS, RF CMOS, CMOS image sensor, non-imaging sensors, integrated power management (BCD and 700V), and MEMS. Tower Semiconductor also provides world-class design enablement for a quick and accurate design cycle as well as Transfer Optimization and development Process Services (TOPS) to IDMs and fabless companies. To provide multi-fab sourcing and extended capacity for its customers, Tower Semiconductor operates two manufacturing facilities in Israel (150mm and 200mm), two in the U.S. (200mm) and three facilities in Japan (two 200mm and one 300mm) through TPSCo. For more information, please visit www.towersemi.com.

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