FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month of March 2011 No. 1

TOWER SEMICONDUCTOR LTD.

(Translation of registrant's name into English)

Ramat Gavriel Industrial Park
P.O. Box 619, Migdal Haemek, Israel 23105
(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 x Form 40-F o

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 o No x

On March 03, 2011, the registrant announces TowerJazz availability of 0.18um Power management EPI Platform Design Kit at APEC 2011

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 03, 2011 By: /s/ Nati Somekh Gilboa

Name: Nati Somekh Gilboa Title: Corporate Secretary

NEWS ANNOUNCEMENT

FOR IMMEDIATE RELEASE

TowerJazz Announces Availability of 0.18um Power Management EPI Platform Design Kit at APEC 2011

Meets strong noise isolation required by today's leading power management ICs

MIGDAL HAEMEK, Israel and NEWPORT BEACH, Calif., March 3, 2011 – TowerJazz, the global specialty foundry leader, today announced the release of its 0.18um power management EPI Platform Design Kit at the 2011 Applied Power Electronics Conference (APEC). The kit is an extension of its successful TS18PM platform which includes the industry's only scalable Rdson versus breakdown voltage LDMOS which enables 10-40% smaller die sizes and faster design cycle times. It also adds up to 40V EPI/NBL isolated devices providing even greater design flexibility and IP reuse.

The TowerJazz TS18PM EPI design kit meets the strong noise isolation required by today's leading power products and addresses 80% of the multi-billion dollar power management IC market. The TS18PM platform targets applications such as leading-edge Buck and Boost/Buck convertors, motor controllers, Class-D amplifiers and PMICs. According to semiconductor industry analyst firm, iSuppli, power management ICs are forecasted to be \$25 billion in 2014.

The TS18PM EPI platform design kit includes all the previous released elements; high voltage LDMOS FETs, Y-FLASH, and a complete ESD library while adding isolation structures capable of reducing noise injection of sensitive analog blocks by five orders of magnitude over standard EPI-less BCD technologies with no NBL. The design kit includes EPI/NBL devices (5V, 12V and 20-40V scalable Rdson NLDMOS/PLDMOS), 20-60V scalable Rdson NLDMOS/PLDMOS devices as well as advanced 0.18-micron CMOS and bipolar NPN devices needed in today's complex power management chips. It also includes industry leading RF and thermal modeling, predictive parasitic extraction switch, full featured high voltage ESD solutions, and extremely dense 5V and 1.8v digital cell libraries for "digital intensive" designs.

TowerJazz will be exhibiting at APEC on March 7-9, 2011 at the Ft. Worth Conference Center in Ft. Worth, TX (booth #640) and will present a session on Tuesday, March 8th at 2:15 on its "Cost Effective 700V Integrated Circuit Platform for Lighting and Offline Power Applications."

"The TowerJazz power platform exceeded our expectations and allowed us to deliver a more robust solution at smaller die size over our previous generation product," said Dr. Dong-Youl Jeong, Chief Technology Officer of DMB Tech. "The strong customer service provided by both the fab and the local sales office along with their superior design kit and models was critical to our success."

"Our new EPI design kit was developed to enhance our leading TS18PM platform and is yet another step in our strategy to provide the most complete power management offering in the industry," said Dr. Avi Strum, VP and GM, Specialty Business Unit, TowerJazz. "Combined with our already released TS100PM 700V offering, we can provide our customer base with technology for a vast majority of the forecasted \$25 billion power management IC market in 2014."

About TowerJazz

Tower Semiconductor Ltd. (NASDAQ: TSEM, TASE: TSEM), the global specialty foundry leader and its fully owned U.S. subsidiary Jazz Semiconductor, operate collectively under the brand name TowerJazz, manufacturing integrated circuits with geometries ranging from 1.0 to 0.13-micron. TowerJazz provides industry leading design enablement tools to allow complex designs to be achieved quickly and more accurately and offers a broad range of customizable process technologies including SiGe, BiCMOS, Mixed-Signal and RFCMOS, CMOS Image Sensor, Power Management (BCD), and Non-Volatile Memory (NVM) as well as MEMS capabilities. To provide world-class customer service, TowerJazz maintains two manufacturing facilities in Israel and one in the U.S. with additional capacity available in China through manufacturing partnerships. For more information, please visit www.towerjazz.com.

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 and/or Jazz'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 and Jazz's most recent filings on Forms 10-K and 10-Q, as were filed with the SEC, respectively. Tower and Jazz do not intend to update, and expressly disclaim any obligation to update, the information contained in this release.

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