TOWER SEMICONDUCTOR LTD
Form 6-K
May 31, 2011

FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month of May 2011
No. 3

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 S 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 S

On May 31, 2011, the registrant announces TowerJazz Announces Availability of Wireless Antenna Switch Silicon-on-Insulator (SOI) Process Technology.

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: May 31, 2011

By: /s/ Nati Somekh Gilboa
Name: Nati Somekh Gilboa
Title: Corporate Secretary

TowerJazz Announces Availability of Wireless Antenna Switch Silicon-on-Insulator (SOI) Process Technology

SOI technology and IP available to speed market introduction of silicon-based handset antenna switch at 40% the cost of today's GaAs-based solutions

MIGDAL HA'EMEK, Israel, and NEWPORT BEACH, Calif., May 31, 2011 —TowerJazz, the global specialty foundry leader, today announced availability of its wireless antenna switch SOI process technology applicable to multiple wireless standards. SOI based solutions cost substantially less than legacy solutions based on GaAs pHEMPT or silicon-on-sapphire (SOS) technologies. The TowerJazz SOI technology is unique relative to other SOI processes in that it maintains full compatibility with its bulk CMOS process enabling integration of control functions, low-noise amplifiers and power amplifiers on a single chip. High-end smart-phones can benefit most from integration while lower-end phones can benefit simply from the lower cost of SOI making the technology relevant for most of the 1.4 billion handset units sold each year.

In addition to the process, design IP is available to kick-start the design effort. An example is a switch IP block optimized to achieve excellent channel isolation of better than -40 dBm, insertion loss of 0.47 dB in low-band and 0.58 dB in high-band, low harmonics of better than 75 dBc at cellular power levels, and intermodulation distortion measured as low as -117 dBm.

The TowerJazz SOI process combines a 6 or 4 metal layer CMOS process with high resistivity SOI substrates. It is a 0.18μm technology with dual gate 1.8V and 3.3V or 5V MOSFETs and a 5V RFLDMOS with Ft of 19 GHz and breakdown of 20V. The 3.3V and 5V FETs facilitate the integration of HVCMOS blocks while the 1.8V FETs are the integration of logic functions. The LDMOS device provides for reliable, high performance RF power. The passive components include silicided and unsilicided poly resistors, 2 fF/μm² and stacked 4 fF/μm² metal-insulator-metal capacitors, scalable inductors and discrete size baluns and transformers.

While using an SOI starting material, this unique technology offers "bulk-like" behavior of the active MOSFETs, free of floating body effects for ease of IP integration. Isolation between device wells and of field areas below sensitive passive components and metal routing is provided by an oxide filled trench to the buried oxide.

"TowerJazz's SOI technology is providing our customers a unique set of features targeting the cellular switch market at a lower cost than the incumbent technologies of GaAs pHEMT and silicon-on-sapphire. Unlike other SOI technologies, our process allows the seamless integration of existing bulk IP such as power control, low-noise amplifiers and even power amplifiers," said Dr. Marco Racanelli, Senior Vice President and General Manager, RF and High Performance Analog Business Group.

TowerJazz will be exhibiting (booth #715 on Agilent Avenue) at the IEEE Microwave Theory and Techniques Society (MTT-S) Conference on June 7-9, 2011 at the Baltimore Convention Center in Baltimore, Maryland where detailed information on its wireless antenna SOI switch process technology will be available.

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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