

TOWER SEMICONDUCTOR LTD  
Form 6-K  
March 13, 2012

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FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month of March 2012

No. 01

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  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  F

No  S

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On March 13, 2012, the registrant announces availability of New Small Geometry CMOS Image Sensor Platform.

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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.

TOWER SEMICONDUCTOR LTD.

Date: March 13, 2012

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

TowerJazz Announces New Small Geometry CMOS Image Sensor Platform

Allows customers to design higher resolution high-end sensors with smaller pixels and enhanced performance

This offering and other advances will be showcased at the Image Sensors (IS) conference in London on March 20-22, 2012

MIGDAL HAEMEK, Israel, March 13, 2012 – TowerJazz, the global specialty foundry leader, today announced its TS11IS hybrid CMOS image sensor (CIS) process offering, a combination of 0.11um and 0.16um platform. The process will allow customers to design higher resolution high-end sensors with smaller pixels and enhanced performance. The TS11IS combines TowerJazz’s 0.16um CMOS for periphery circuits and its 0.11um pushed design rules for the pixel array. The process is targeted for applications in high end photography, machine vision, 3D imaging and security sensors. According to Yole Development, the forecast for high-end CMOS image sensors is expected to be ~\$2B in 2015 with a CAGR of 13%.

The new platform, based on Tower’s 0.16um CMOS shrink process, will allow easy re-use of existing customers’ 0.18um circuit IP which will save them from investing in resources to redesign existing blocks, and increase the probability for first time success. The TS11IS offers improved pixel performance, smaller pixel pitch, higher resolution, improved sensitivity, and improved angular response. It allows up to 50% reduction of pixel size, mainly for high-end global shutter pixels. The platform includes a new local interconnect layer to allow denser metallization routing in pixels while maintaining good QE (quantum efficiency). It also includes tighter design rules for all metal layers and implant layers as well as provides a “Bathtub” option for lower stack height, improving the sensors’ angular response.

“By allowing significantly smaller pixels, higher resolution and enhanced pixel performance, our new platform ideally serves our customers’ needs for the professional CIS markets, allowing them to create new business opportunities, expand the span of applications accessible for their designs, and enlarge their market share,” said Jonathan Gendler, Director of CMOS Image Sensors Marketing.

“We have received enthusiastic feedback from all of our customers on the opportunity to keep working with our established process environment and reuse their design block IP, while being able to shrink the pixel array and die size. This new platform not only improves the cost model of their products, but at the same time enhances device performance.”

Availability

The new hybrid CIS process platform will be offered for prototyping for select customers in Q3 2012, and for production towards the end of 2012.

TowerJazz is sponsoring and exhibiting at Image Sensors (IS) 2012 (<http://www.image-sensors.com/>) in London on March 20-22, 2012 and will showcase its CIS process offerings.

#### About TowerJazz

Tower Semiconductor Ltd. (NASDAQ: TSEM, TASE: TSEM), its fully owned U.S. subsidiary Jazz Semiconductor Ltd., and its fully owned Japanese subsidiary TowerJazz Japan, Ltd., operate collectively under the brand name TowerJazz, the global specialty foundry leader. TowerJazz manufactures integrated circuits with geometries ranging from 1.0 to 0.13-micron, offering 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 CMOS and MEMS capabilities. TowerJazz also offers a world-class design enablement platform that complements its sophisticated technology and enables a quick and accurate design cycle. In addition, TowerJazz provides (TOPS) Technology Optimization Process Services to IDMs as well as fabless companies that need to expand capacity, or progress from an R&D line to a production line. To provide multi-fab sourcing, TowerJazz maintains two manufacturing facilities in Israel, one in the U.S., and one in Japan with additional capacity available in China through manufacturing partnerships. For more information, please visit [www.towerjazz.com](http://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 TowerJazz'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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