

FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month of November 2007 No.3

TOWER SEMICONDUCTOR LTD.  
(Translation of registrant's name into English)

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  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 November 13, 2007, Tower Semiconductor Releases a New Offering of Advanced Image Sensor Pixels. Attached hereto is a copy of the press release.

This Form 6-K is being incorporated by reference into all effective registration statements filed by us under the Securities Act of 1933.

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: November 13, 2007

By: /s/ Nati Somekh Gilboa

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Nati Somekh Gilboa  
Corporate Secretary

TOWER SEMICONDUCTOR RELEASES A NEW OFFERING OF  
ADVANCED IMAGE SENSOR PIXELS

VOLUME USING NEW OFFERING EXPECTED TO TOP 50,000 WAFERS THROUGH THE  
COMING 2 YEARS

MIGDAL HAEMEK, Israel, November 13, 2007 - Tower Semiconductor Ltd. (NASDAQ: TSEM; TASE: TSEM), an independent specialty foundry, today announced the availability of its new Image Sensors Platform. The new offering adds advanced imaging capabilities onto the base of its 0.18-micron technology platform and is produced in Tower's advanced Fab2 facility.

The latest release in this family, the 2.2-micron pixel, exhibits excellent noise and dark current performance even at elevated temperatures. The most important parameters for low light conditions, dark current and dark signal non-uniformity (DSNU), achieve world class performance results of less than 1.5e/sec and 9e/sec respectively, at room temperature. This new 2.2-micron pixel joins Tower's broad family of advanced pixel IPs which includes the 2.8-, 3.2- and 3.6-micron pixels, already manufactured in mass production with very high yields.

The race to reduce pixel size just hit another mark. Using smaller pixels, designers can increase the camera's resolution without increasing its size, thereby attaining a very cost-effective solution for high-volume applications.

Several Tower customers are already developing new sensors using this new 2.2-micron pixel at various resolutions, ranging from very small VGA sensors through 3Mp (Mega Pixel) sensors for cellular-phone applications up to 5Mp sensors for DSCs (Digital Still Cameras).

The world market for image sensor ICs for cell-phones and DSCs is estimated to grow by an annual growth rate of 14% to reach \$5 Billion dollars in 2010. Tower's new offering addresses the requirements of more than 80% of this market. Tower expects potential accumulated shipments of this technology from its fab2 to reach more than 50,000 wafers through the coming 2 years.

Tower's pixel IP methodology, where Tower provides its customer with a fully developed and fully characterized pixel has proven to shorten time to market while providing first time success, thereby enabling them to compete successfully in the fast-paced cellular-phone and DSC markets.

"We are very excited to provide existing and emerging customers with this world class CIS (CMOS Image Sensors) platform," said Dr. Avi Strum, general manager of the CIS product line at Tower Semiconductor. "The outstanding performance and resulting picture quality makes the Tower platform a very attractive option for customers seeking high resolution, low noise and small form factor."

The new CIS platform is also available on Tower's shuttle program for fast and low cost design verification and engineering samples.

ABOUT TOWER SEMICONDUCTOR LTD.:

Tower Semiconductor Ltd. (Nasdaq: TSEM, TASE: TSEM) is an independent specialty foundry that delivers customized solutions in a variety of advanced CMOS technologies, including digital CMOS, mixed-signal and RF (radio frequency) CMOS, CMOS image sensors, power management devices, and embedded non-volatile memory solutions. Tower's customer orientation is complemented by its uncompromising attention to quality and service. Its specialized processes and engineering expertise provides highly flexible, customized manufacturing solutions to fulfill the increasing variety of customer needs worldwide. Offering two world-class manufacturing facilities with standard and specialized process technologies ranging from 1.0- to 0.13-micron, Tower Semiconductor provides exceptional design support and technical services to help customers sustain long-term, reliable product performance, while delivering on-time and on-budget results. More information can be found at <http://www.towersemi.com>.

SAFE HARBOR:

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 our business is included under the heading "Risk Factors" in our most recent Annual Report on Forms 20-F, F-1, F-3 and 6-K, as were filed with the Securities and Exchange Commission and the Israel Securities Authority. We do not intend to update, and expressly disclaim any obligation to update, the information contained in this release.

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CONTACTS:

Tower Semiconductor USA  
Michael Axelrod, +1 408 330 6871  
[pr@towersemi.com](mailto:pr@towersemi.com)

or

Shelton Group  
Melissa Conger, (972) 239 5119 ext. 137  
[mconger@sheltongroup.com](mailto:mconger@sheltongroup.com)