### FORM 6-K

### SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month of October 2012 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 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 October 09, 2012, the registrant announces its 7th Annual US Technical Global Symposium to be held on October 31 and November 1, 2012.

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: October 9, 2012 By: /s/ Nati Somekh

Name: Nati Somekh Title: Corporate Secretary

TowerJazz Announces 7th Annual US Technical Global Symposium to be held on October 31 and November 1, 2012

TowerJazz presents commercial and aerospace & defense solutions; hosts US Air Force Research Lab's Radiation
Hard Electronics
Technology (RHET) meeting October 30-31

NEWPORT BEACH, Calif., October 9, 2012 –TowerJazz, the global specialty foundry leader, announced today its seventh annual technology conference, the TowerJazz Technical Global Symposium (TGS) to be held at the Hyatt Regency, Irvine, California on October 31 - November 1, 2012. TGS is offered at no cost to attendees and will be comprised of an Aerospace and Defense focused day on October 31 and a Commercial Day on November 1. Guest speakers include executives from American Semiconductor, Alcatel-Lucent/Bell Laboratories, Boeing, Forza Silicon Corporation, Lockheed-Martin, Think Strategically, Triune Systems, UC Irvine, and the US Air Force Space and Missile Center, among others. For more information and to register, please visit: http://towerjazz.com/tgs/index.jsp.

This year, TowerJazz will host the US Air Force Research Laboratory's annual Radiation Hard Electronics Technology (RHET) meeting on October 30-31, 2012 in conjunction with TGS, also being held at the Hyatt Regency, Irvine. RHET is a meeting for the entire space avionics community, with presentations oriented towards requirements, plans, and programs for the space and missile electronic systems technology base. For more information, please visit: http://towerjazz.com/rhet.html.

The TGS commercial day will highlight TowerJazz's strategy and achievements as well as capacity expansion. The keynote will be presented by Russell Ellwanger, TowerJazz Chief Executive Officer. In addition, company executives will provide overviews and updates on TowerJazz's broad range of technology solutions including SiGe/RF/High Performance Analog, Power Management, CMOS Image Sensors, MS/CMOS, TOPS (transfer optimization process services) and its world-class Design Enablement capabilities.

TowerJazz's Aerospace and Defense day will focus on how the business has expanded its on-shore capabilities and has grown substantially since the Tower and Jazz Semiconductor merger, approximately doubling to several tens of millions of dollars in revenue while maintaining strong bottom line performance. TowerJazz targets continued substantial gain within this \$200M - \$300M US ITAR market. At TGS, Towerjazz will discuss how it has added to its Newport Beach facility more capacity, introduced its CMOS image sensor (CIS) process, and added even higher performance SiGe to its specialty offerings. In addition, TowerJazz will provide a panel discussion on "Innovation in SiGe vs. Digital CMOS" to further present the benefits and advantages of its SiGe process platform.

"I am looking forward to our annual customer focused event where we have the opportunity to present our latest specialty process technologies as well as showcase our customers' advanced applications," said Russell Ellwanger, TowerJazz CEO. "I am excited to share our business objectives moving forward in our pursuit of excellence in all the areas of the organization. Along with providing technology updates for commercial applications, we are pleased to again this year offer a designated Aerospace and Defense day. The efforts by our TowerJazz team have been extraordinary in developing long-lasting relationships with the military and space communities as will be evidenced by the participation of many of these customers at the event."

Attendees will have an opportunity to meet with top executives from TowerJazz and many leading semiconductor industry companies. Major EDA vendors and IP providers will be available to discuss the most comprehensive and updated design solutions. TGS gold sponsors include: Agilent, Cadence, Mentor Graphics, Mobile Semiconductor, Novocell, Quik-Pak, Silvaco, and Synopsys. TGS Silver sponsors include: AWR, Flip Chip, GDSI, Kilopass, Photronics, Presto-Engineering, Tanner EDA, Toppan and Silicon Creations. Sponsor exhibit tables will be provided on both days of the event and a reception will be hosted by TowerJazz on the evening of October 31st.

### 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.

### 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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