

FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month of May 2009 No. 6

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 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 May 27, 2009, the registrant announces Jazz Semiconductor's DIRECT Multiproject Wafer (MPW) Shuttle Program Enables Rapid Design Verification and Faster Time-to-Market.

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: May 27, 2009

By: /s/ Nati Somekh Gilboa

Nati Somekh Gilboa
Corporate Secretary

Jazz Semiconductor's DIRECT Multiproject Wafer (MPW) Shuttle Program Enables Rapid Design Verification and Faster Time-to-Market

Direct Interface with Jazz Headquarters Ideal for Aerospace and Defense Customers

NEWPORT BEACH, Calif. May 27, 2009 – Jazz Semiconductor[®], a Tower Group Company (NASDAQ: TSEM, TASE: TSEM), and the leader in Analog-Intensive Mixed-Signal (AIMS) foundry solutions, today announced its DIRECT Multiproject Wafer (MPW) shuttle program offering customers quick and low-cost prototyping with access to high performance processes. The program provides a vehicle to develop new designs in CMOS, SiGe and SOI and bring these to market quickly, without incurring the full cost of a complete mask set.

The DIRECT MPW program offered by Jazz is especially advantageous for Aerospace and Defense (A&D) customers requiring ITAR protection by handling projects directly at its U.S. headquarters without access by a third party. The company's A&D support, operations and logistics team is specifically designed to support low volume production for critical Military Programs at its ISO 9001 US-based manufacturing facility.

Direct engagement with in-house R&D and process experts at Jazz headquarters provides faster and more effective design interfaces and support. Through the DIRECT MPW program, Jazz offers customers rapid question resolution for design related issues to streamline the tape-in/mask generation process as well as direct process integration feedback and recommendations to further speed time-to-revenue. Monthly MPW runs include both CMOS and SiGe with speeds of up to 200GHz as well as SOI on selected processes.

"Jazz's DIRECT MPW program, in addition to supporting the greater commercial community, is an extremely valuable service for the complex Aerospace and Defense industry providing faster and more effective design interfaces and support to specifically meet their crucial needs," said Mike Scott, Director of Sales and Marketing Jazz Aerospace and Defense Business Sector. "We look forward to continuing to respond to our customers' needs as well as expanding the DIRECT MPW Program to provide improved value-added services to the A&D sector."

For more information or questions regarding this program please visit www.jazzsemi.com or contact mpw@jazzsemi.com.

About Jazz Semiconductor, Inc.

Jazz Semiconductor, Inc., a Tower Group Company (NASDAQ: TSEM, TASE: TSEM), is a leading wafer foundry focused on Analog-Intensive Mixed-Signal (AIMS) process technologies. Jazz offers world-class design enablement tools to allow complex designs to be achieved quickly and more accurately. The company's broad process portfolio of modular AIMS technologies includes RFCMOS, Analog CMOS, Silicon and SiGe BiCMOS, SiGe C-BiCMOS, MEMS, Power CMOS and High Voltage CMOS. Through access to Tower's process technologies, Jazz offers Embedded NVM, CMOS Image Sensors, and Flash MTP and OTP solutions. Jazz Semiconductor's executive offices and its U.S. wafer fabrication facility are located in Newport Beach, CA. For more information, please visit and www.jazzsemi.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's and 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. 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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