

FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

For the month of July 2009 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 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 July 13, 2009, the registrant announces that Tower Semiconductor Power Management Process Selected by 3PEAKIC Microelectronics to Manufacture Energy Saving LED Driver ICs.

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: July 13, 2009

By: /s/ Nati Somekh Gilboa

Nati Somekh Gilboa
Corporate Secretary

**Tower Semiconductor's Power Management Process Selected by 3PEAKIC
Microelectronics to Manufacture Energy Saving LED Driver ICs**

*Tower targets green energy sector; LED market expected to exceed \$5 billion in 2012, an annual
growth rate of 28% from 2008 – 2012*

SUZHOU, China and MIGDAL HA'EMEK, Israel, July 13, 2009 – 3PEAKIC Microelectronics Inc., a provider of high-end analog and mixed-signal electronic products, and Tower Semiconductor, Ltd. (Nasdaq: TSEM, TASE: TSEM), a leading global specialty foundry, today announced Tower will manufacture 3PEAKIC's energy saving light emitting diode (LED) driver ICs used for backlight LED panels in handheld devices such as cell phones, PDAs and personal navigation devices (PNDs). LEDs present many advantages over traditional light sources including lower energy consumption, longer lifetime, and smaller size as well as faster switching, useful in communications technology.

According to Strategies Unlimited, the LED lighting market is forecast to exceed \$5 billion in 2012, corresponding to a compound annual growth rate (CAGR) of 28% from 2008 to 2012. In addition, during 2009, iSuppli reports that the LED market revenue growth is expected to outshine the overall semiconductor market.

LED driver ICs need the current to be tightly controlled between channels which requires superior mixed-signal modeling and analog device characterization available from Tower's power management process (TS18PM). Due to the large well-modeled passive device offerings in TS18PM, 3PEAKIC's LED Driver IC (3P3208) requires lower power and fewer components on the PCB (printed circuit board).

Tower's TS18PM process includes 20v-60v scalable Rdson NLD MOS/PLD MOS devices as well as advanced 0.18-micron CMOS and bipolar NPN devices needed in today's complex power management chips. It also includes industry leading RF and Thermal modeling, predictive parasitic extraction switch, high voltage ESD solutions, and extremely dense 5v and 1.8v digital cell libraries for "digital intensive" designs. The nearly released additional options of Deep Trench isolation, NBL and Ultra Low Rdson will push the offering over 100v while providing superior lateral and vertical isolation required for high power applications.

3PEAKIC's LED driver IC is ideal for backlighting control in mobile devices. The 3P3208 features 16 programmable current levels with single wire pulse control, dual-mode 1X, 1.5X, charge pump for maximum efficiency and VF coverage, small application circuit, and no need for extra resistors for current settings. In addition, it provides automatic LED detection to shut down open channels, built-in thermal protection, proprietary current regulation topology, no inductors, low noise operation, 1MHz constant switching frequency, and the smallest package size (2.85x3mm) available.

“We found Tower's power management process to be ideal for LED driver ICs as it includes an industry first scalable Rdson versus breakdown voltage design kit technology to reduce on-resistance and size of power cells,” said Dr. Zhixu Zhou, President of 3PEAKIC Microelectronics Inc. “Tower has been instrumental in offering excellent process technology and customer support in manufacturing our wafers and also working with us to develop and win the market.”

“3PEAKIC's choice to manufacture its devices at Tower's fab in Israel instead of a facility in closer proximity to China is a testament to our unparalleled design enablement capabilities and superior process technologies,” said Dr. Avi Strum, Vice President and General Manager of Tower's Specialty Business Unit at Tower Semiconductor. “We seek to align our capabilities with customers that target the green energy sector and are pleased with the opportunity to produce energy saving devices such as 3PEAKIC's LED driver ICs.”

About 3Peak Microelectronics Inc.

3PEAKIC Microelectronics Inc. designs and manufactures high-end analog and mixed-signal electronic products. Located in the Suzhou Industrial Park in China, its operations also include an R&D center in Shanghai. By combining its advanced design technology with market demand, 3PEAKIC Microelectronics provides both IC products and solutions with extremely high performance/price ratio to its customers. Major products are in the area of power management, such as LED drivers and audio drivers, among others. These products can be widely used in consumer electronics, industrial, medical and automobile applications. For more information, visit www.3peakic.com.cn.

About Tower Semiconductor, Ltd. and Jazz Semiconductor, Inc.

Tower Semiconductor Ltd. (NASDAQ: TSEM, TASE: TSEM) is a global specialty foundry leader and its fully owned subsidiary Jazz Semiconductor, a Tower Group Company is a leader in Analog-Intensive Mixed-Signal (AIMS) foundry solutions. Tower and Jazz manufacture integrated circuits with geometries ranging from 1.0 to 0.13-micron and provide industry leading design enablement tools to allow complex designs to be achieved quickly and more accurately. Tower and Jazz offer a broad range of process technologies including Digital, Mixed-Signal and RFCMOS, HV CMOS, BCD, Non-Volatile Memory (NVM), Embedded NVM, MEMS, and CMOS Image Sensors. To provide world-class customer service, Tower and Jazz maintain two manufacturing facilities in Israel and one in the U.S. with additional manufacturing capacity available in China through partnerships with ASMC and HHNEC. For more information, please visit www.towersemi.com 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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