



TowerJazz Presents Novel Empirical Simulation Flow of ESD Protection Circuits at EOS/ESD Symposium 2016

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Supports customers with an optimized solution for reliable chip design, enables reduction in cost and first time success

MIGDAL HAEMEK, Israel, Sept. 14, 2016 (GLOBE NEWSWIRE) -- [TowerJazz](#), the global specialty foundry leader, today announced its participation at the [EOS/ESD Symposium](#), the main ESD (electrostatic discharge) technology forum worldwide, to demonstrate its novel Empirical ESD Simulation Flow of ESD protection circuits for reliable chip design. ESD protection is part of every IC developed in the world and is part of all of TowerJazz customers' products. Empirical ESD Simulation Flow is a unique foundry offering which supports TowerJazz customers by enabling an optimized solution both in terms of cost and first time success.

This new simulation concept from TowerJazz is designed to protect electronic devices in the case of an ESD event, the sudden flow of electricity between two electronically charged objects (caused by contact, an electrical short, or dielectric breakdown), which can cause permanent damage or failure of solid state electronics components such as integrated circuits (ICs). Tailored ESD protection design is especially crucial in applications where I/O customization is required such as in power management and CMOS image sensors.

ESD is a major challenge in IC design as it involves multiple electrical device phenomena which cannot be simulated properly by conventional tools. Due to this complexity, often times there are field-failures or over-design of ESD structures, making them too large in size and thus increasing die cost. TowerJazz addresses the challenges in ESD protection design, which today lacks simple simulation capability. The absence of reliable simulation tools may lead to ESD designs where the IC's core circuits are exposed to excessive voltages developed during ESD current flow. The methods available so far to enable simulation of ESD protection circuits are limited and involve complex development of compact models.

TowerJazz's new concept of Empirical ESD Modeling enables dynamic simulation of ESD protection circuits. It is demonstrated on snapback type protection devices which lack simulation models for most manufacturing technologies offered by foundries. The new concept is based on real device measurements as opposed to theoretical calculations, therefore providing more accurate and reliable simulation data for a given technology. Implemented on a variety of circuits, it is demonstrated directly on the IC layout using a fully automated flow. All steps included in the preparation of the simulation are done in the background without involvement of the designer.

"We are pleased to present this novel concept of Empirical ESD Modeling at the EOS/ESD 2016 Symposium," said Raz Reshef, Director of IC Design, TowerJazz. "Based on close relationships with our customers and evaluation of designers' needs, TowerJazz has developed a wide range of devices and protection schemes covering various IC pin types and specifications."

Dr. Efraim Aharoni, TowerJazz Leader of ESD Development and Customer Support, will present "Empirical ESD Simulation Flow for ESD Protection Circuits Based on Snapback Devices" at EOS/ESD on September 14, 2016 in the session on EDA tools for ESD validation. In addition to the presentation, a 10-page paper will be published in the conference proceedings.

Empirical ESD Modeling is an additional important development in TowerJazz's state-of-the-art ESD offering. In particular, TowerJazz offers a full ESD solution including scalable voltage ESD devices, scalable rating ESD devices, ESD pcells, and programmable electronic rules check (PERC).

For more information, please contact Dr. Efraim Aharoni, TowerJazz Leader of ESD Development and Customer Support at efraim.aharoni@towerjazz.com.

About TowerJazz

Tower Semiconductor Ltd. (NASDAQ:TSEM) (TASE:TSEM) and its fully owned U.S. subsidiaries Jazz Semiconductor, Inc. and TowerJazz Texas Inc., operate collectively under the brand name TowerJazz, the global specialty foundry leader. TowerJazz manufactures integrated circuits, offering a broad range of customizable process technologies including: SiGe, BiCMOS, mixed-signal/CMOS, RF CMOS, CMOS image sensor, integrated power management (BCD and 700V), and MEMS. TowerJazz also provides a world-class design enablement platform for a quick and accurate design cycle as well as Transfer Optimization and development Process Services (TOPS) to IDMs and fabless companies that need to expand capacity.

To provide multi-fab sourcing and extended capacity for its customers, TowerJazz operates two manufacturing facilities in Israel (150mm and 200mm), two in the U.S. (200mm) and three additional facilities in Japan (two 200mm and one 300mm) through **TowerJazz Panasonic Semiconductor Co. (TPSCo)**, established with Panasonic Corporation of which TowerJazz has the majority holding. Through TPSCo, TowerJazz provides leading edge 45nm CMOS, 65nm RF CMOS and 65nm 1.12um pixel technologies, including the most advanced image sensor technologies. For more information, please visit www.towerjazz.com or www.tpsemico.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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