

SiGe Platform Overview

0.35 μ m, 0.18 μ m, 0.13 μ m Nodes

TowerJazz offers a high performance SiGe process optimized to enable the world's lowest power devices for today's high-frequency wireless communications and high-speed networking products. Our industry-leading manufacturing process reaches switching speeds of greater than 200GHz. Our SiGe technology also enables Front End Modules (FEMs) reducing die cost up to 50% over existing III-V solutions in many cellular application protocols. SiGe is an ideal solution for RF transceivers, tuners, millimeter wave (including optical networking and radar applications), and high precision analog building blocks.

- High performance, low power, cost effective solution for both networking and wireless applications
- Ultra low noise and high linearity
- 0.35u, 0.18u, 0.13u nodes
- Single and dual gate CMOS FETs provide high levels of mixed signal and logic integration
- SiGe bipolar (NPN) transistors available to optimize power and speed (Ft up to 200GHz)
- High speed vertical PNP transistors available
- High density MIM Caps up to 5.6fF μ m²
- Varactors, poly and metal resistors, High-Q inductors, deep trench and triple-well isolation
- Up to 6 Levels of Metal
- Large Standard Cell Libraries
- I/O Libraries
- Memory Generators
- Synopsys and Cadence ASIC Flows

Features	0.35	0.18	0.13
Location	Newport Beach	Newport Beach	Newport Beach
CMOS FET	Single Gate 3.3V/5.0V	Single/Dual Gate 1.8V/3.3V	Dual Gate 1.2V/3.3V
Ft Range	23GHz - 61GHz	38GHz - 200GHz	37GHz - 200GHz
MIM Cap	1fF, 2fF, & 4fF	1fF, 2fF, 2.8fF, 4fF, & 5.6fF	2.8fF & 5.6fF
Poly Resistor	95 & 1.1K	235 & 1K	310 & 1K
Metal Resistor		24	
Metal Levels	3 & 4	3 to 6	6

Customer Service and Support

- **eBizz website:** <https://online.jazzsemi.com>
- **eTower website:** <https://etower.towersemi.com>
- File Exchange for design kits and online documentation
- Online Tape-Out System
- Online Help Ticket System
- Manufacturing status, logistics and inventory management
- Dedicated Sales and Engineering Support

Analog Mixed-Signal Design Kit Features

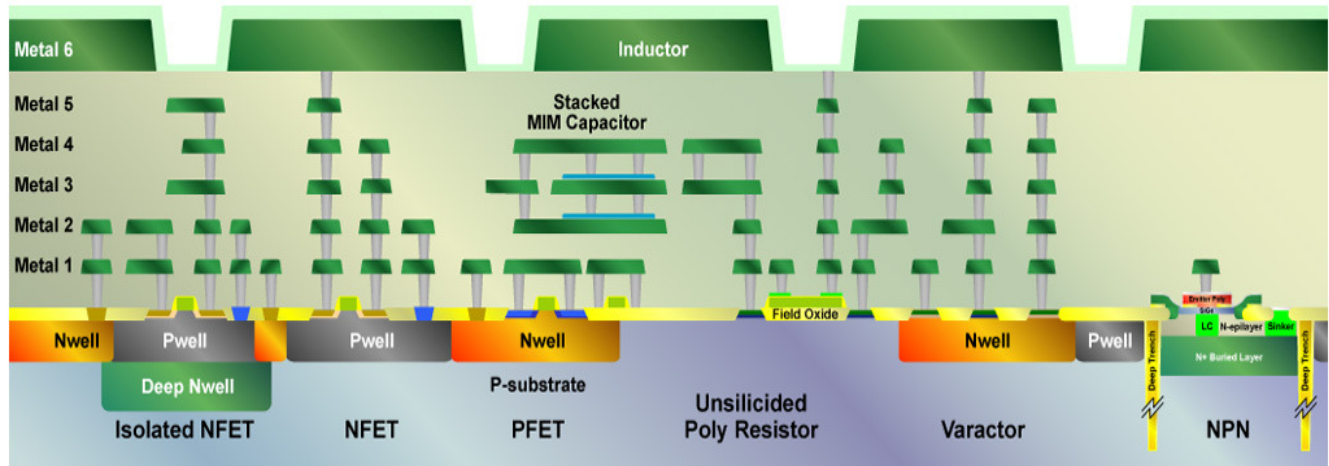
- Cadence® Assura™-based Design Kit
- Inductor toolbox for scalable simulation and layout
- Support for Mentor® Calibre interactive/XRC
- RF-centric layout Pcell options and models
- Support for Spectre, ADS (& RFDE), HSPICE simulators
- Includes basic ESD structures

ASIC Library Views and Features

- Standard Cell Libraries
- I/O Libraries
- Synopsys and Cadence ASIC Flows
- Memory Generators

Supported Models

- **MOSFETs:** Scalable BSIM/PSP models, RF extension models, mismatch, statistical and noise models
- **NPNs:** HiCUM and extended GP RF models, mismatch, statistical and noise models
- **Inductors:** Scalable RF models which allow physical (turns, width, spacing) or electrical (L, Q, f_{peak}) inputs, and statistical models
- **MOS Varactor:** Scalable RF models and statistical models
- **MIM Caps:** RF models, mismatch and statistical models
- **Resistors:** Mismatch, statistical and noise models



About TowerJazz

Tower Semiconductor Ltd. (NASDAQ: TSEM, TASE: TSEM), the global specialty foundry leader and its fully owned U.S. subsidiary Jazz Semiconductor, operate collectively under the brand name TowerJazz, manufacturing integrated circuits with geometries ranging from 1.0 to 0.13-micron. TowerJazz provides industry leading design enablement tools to allow complex designs to be achieved quickly and more accurately and offers 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 MEMS capabilities. To provide world-class customer service, TowerJazz maintains two manufacturing facilities in Israel and one in the U.S. with additional capacity available in China through manufacturing partnerships. For more information, please visit www.towerjazz.com.