GLOBALFOUNDRIES Announces Availability of 45nm RF SOI to Advance 5G Mobile Communications

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Optimized RF features deliver high-performance solutions for mmWave beam forming applications in 5G smartphones and base stations

Santa Clara, Calif., February 21, 2016 – GLOBALFOUNDRIES today announced the availability of its 45nm RF SOI (45RFSOI) technology offering, making GF the first foundry to announce an advanced, 300mm RF silicon solution to support next generation millimeter-wave (mmWave) beam forming applications in future 5G base stations and smartphones.

GF's 45RFSOI offering is the company's most advanced RF SOI technology. The technology is optimized for beam forming front-end modules (FEMs), with back-end-of-line (BEOL) features including thick copper and dielectrics that enable improved RF performance for LNAs, switches and power amplifiers. The intrinsic characteristics of SOI combined with RF-centric features enable next-generation RF and mmWave applications, including internet broadband low earth orbit (LEO) satellites and 5G FEMs.

The fast emerging 5G and mmWave markets will require innovations in radio technologies, including low power, integrated mmWave radio front ends, antenna phased array subsystems, and high performance radio transceivers. As OEMs integrate more RF content into their smartphones and new high-speed network standards are introduced, state-of-the-art equipment will require additional RF circuitry to support newer modes of operation. This includes chips that support low latency, higher EIRP, and high resolution antenna scanning for ubiquitous coverage and continuous connectivity.

For improved power-handling benefits for devices operating in the GHz frequency range, 45RFSOI incorporates a substrate resistivity of greater than 40 ohm-cm that maximizes the quality factor for passive devices, reduces parasitic capacitances and minimizes disparity in phase and voltage swing. The technology supports operation in mmWave spectrum from 24GHz to 100GHz band, 5x more than 4G operating frequencies.

"Skyworks is pleased to be collaborating with GF to drive innovation in millimeter wave solutions," said Peter Gammel, chief technology officer for Skyworks Solutions, Inc. "GF's leadership in advanced foundry technology, as exemplified by the 45RFSOI process, is enabling Skyworks to create RF solutions that will revolutionize emerging 5G markets and further advance the deployment of highly integrated RF front-ends for evolving mmWave applications."

"5G is expected to become the dominant worldwide mobile communications standard of the next decade and will usher in a new paradigm in mobility, multi-GBps data rates, security, low latency, network availability and high quality of service (QoS)," said Bami Bastani, senior vice president of RF Business Unit at GF. "Utilizing our long history of SOI leadership and high-volume manufacturing, we are excited to release our most advanced RF SOI technology that will help play a critical role in bringing 5G devices and networks to reality."

GF's 45RFSOI technology leverages a partially-depleted SOI technology base that has been in high-volume production since 2008. The advanced 45RFSOI technology is manufactured at the GF's 300mm production line in East Fishkill, N.Y. and will provide the industry ample capacity to address this high growth market.

Process design kits are available now. Customers can now start optimizing their chip designs to develop differentiated solutions for customers seeking high performance in the RF front end of 5G and mmWave phased array applications.

For more information on GF's RF SOI solutions, contact your GF sales representative or go to www.globalfoundries.com.

About GF

GF is a leading full-service semiconductor foundry providing a unique combination of design, development, and fabrication services to some of the world's most inspired technology companies. With a global manufacturing footprint spanning three continents, GF makes possible the technologies and systems that transform industries and give customers the power to shape their markets. GF is owned by Mubadala Development Company. For more information, visit http://www.globalfoundries.com.

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