May 24, 2016

MACOM Achieves Up To 79% Efficiency for Wireless Basestations with New High-power, Plastic-packaged GaN Power Transistors

High performance, 320 W and 160 W GaN power transistors in rugged, low-cost plastic packaging widen the price/performance advantage versus legacy LDMOS offerings

LOWELL, Mass.--(BUSINESS WIRE)-- MACOM Technology Solutions Inc. ("MACOM"), a leading supplier of high-performance analog RF, microwave, millimeterwave and photonic semiconductor products, today announced the newest entries in its ***MAG**b* series of GaN on Silicon power transistors for use in macro wireless basestations. Based on MACOM's Gen4 GaN technology, the new MAGb-101822-240B0P and MAGb-101822-120B0P power transistors harness the clear performance benefits of GaN in rugged, low-cost plastic packaging, enabling improved cost efficiencies that further distinguish MACOM's GaN power transistors as the natural successors to legacy LDMOS offerings for basestation applications.

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Plastic-packaged MAGb power transistors deliver power efficiency up to 79% - an improvement of up to 10% compared to LDMOS offerings - with only fundamental tuning across the 400 MHz RF bandwidth, and with linear gain of up to 20 dB. These transistors provide a compelling alternative to ceramic-packaged devices without compromising RF performance or reliability - thermal behavior is improved by 10% compared to ceramic-packaged MAGb offerings. (Photo: Business Wire)

The new plastic TO-272-packaged MAGb-101822-240B0P and MAGb-101822-120B0P power transistors provide 320 W and 160 W output peak power, respectively, in the load-pull system with fundamental tuning only, and cover all cellular bands and power levels within the 1.8 - 2.2 GHz frequency range. These transistors' ability to operate over 400 MHz of bandwidth precludes the need to use multiple LDMOS-based products, further optimizing cost and design efficiencies.

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These power transistors enable the implementation of a simple symmetric Doherty amplifier design while maintaining excellent RF performance compared to lesser performing and complex asymmetric Doherty topologies imposed by LDMOS-based transistors. With MACOM's ***MAG**b* series transistors, Doherty amplifier implementations show the same level of DPD friendliness as LDMOS-based solutions. MACOM will host joint demonstrations with Xilinix's DPD solution at IMS 2016.

"DPD is critical to increase the efficiency of power amplifiers for 4G and 5G basestation applications and has a significant impact on network operators' operating expenses and capital expenditures," said Dr. Chris Dick, Chief DSP Architect at Xilinx. "Our joint demonstration with MACOM at IMS 2016 will showcase the combined DPD capabilities of MACOM's Gen4

GaN-based ***MAG**b* power transistors and Xilinx's complementary DPD technologies on our 28 nm Zynq® SoC and 16 nm UltraScale+™ MPSoCs. This joint solution highlights the time-to-market advantages that can be achieved with a proven, interoperable DPD solution."

"Our collaboration with Xilinx demonstrates the linearity and ease of correction of our ***MAG**b*, especially with signals that are known to be challenging to correct using GaN-based solutions like multi-carrier GSM and TDD-LTE signals," said Preet Virk, Senior Vice President and General Manager, Carrier Networks, at MACOM. "We believe that with the introduction of our new plastic-packaged ***MAG**b* power transistors, we're further extending this price/performance advantage over competiting LDMOS and other GaN technologies, and accelerating the evolution to GaN-based PAs for wireless basestations."

MACOM's Gen4 GaN-based ***MAG**b* series of power transistors enable wireless carriers to deploy the latest LTE releases and significantly reduce system operating expenses at highly competitive price points, with a scalable supply chain combined with MACOM's highly experienced applications and design support team. To schedule a private demonstration of MACOM's ***MAG**b* products at IMS 2016, May 22 - 27, San Francisco, contact your local Sales Representative.

Select products in MACOM's ***MAG**b* series of GaN power transistors are sampling to qualified customers today. For more information about MACOM's GaN solutions for wireless infrastructure, visit www.macom.com/wirelessinfra.

ABOUT MACOM:
MACOM Technology Solutions, Inc. (www.macom.com) is a leading supplier of high-performance analog RF, microwave, millimeterwave and photonic semiconductor products that enable next-generation internet and modern battlefield applications. Recognized for its broad catalog portfolio of technologies and products, MACOM serves diverse markets, including high speed optical, satellite, radar, wired & wireless networks, automotive, industrial, medical, and mobile devices. A pillar of the semiconductor industry, we thrive on more than 60 years of solving our customers' most complex problems, serving as a true partner for applications ranging from RF to Light.

Headquartered in Lowell, Massachusetts, MACOM is certified to the ISO9001 international quality standard and ISO14001 environmental management standard. MACOM has design centers and sales offices throughout North America, Europe, Asia and Australia.

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Source: MACOM Technology Solutions Inc.