



Partners in RF & Microwave

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MACOM Extends GaN Power Leadership with Industry's First Surface Mount L-Band 90W GaN Power Module

Fully-matched, 2-stage GaN in Plastic module provides 2X the power of competing products in surface mount 14 x 24 mm package

LOWELL, Mass.--(BUSINESS WIRE)-- M/A-COM Technology Solutions Inc. ("MACOM"), a leading supplier of high performance RF, microwave, and millimeter wave products, today announced the newest entry in its portfolio of GaN in Plastic packaged power products. Optimized for L-Band commercial air traffic control, military radar, and long range perimeter monitoring applications at 1.2 to 1.4 GHz, MACOM's new 2-stage, fully matched GaN in Plastic power module scales to peak pulse power levels of 100W in a 14 x 24 mm package size — delivering twice the power of comparably sized competing products.

MACOM's new high gain GaN in Plastic power modules are the first and only GaN-based modules to support surface mount technology (SMT) assembly, providing significant cost and process advantages compared to ceramic-packaged flange-mount components. Delivering clear benefits in size, weight and power (SWaP) while enabling high volume manufacturing efficiency, MACOM's new GaN power modules extend the performance attributes of its discrete GaN in Plastic power transistors and establish new standards for GaN module integration.

Under pulsed conditions, these modules deliver output power greater than 90W, with 30 dB typical associated power gain and 58% typical power added efficiency. Supporting 50V operation and up to 3 ms pulse width/duration for improved time on target, MACOM's GaN in Plastic power modules reduce overall power consumption and cooling requirements compared to existing options.

The module features a Land Grid Array (LGA) pattern for enhanced thermal flow and "True SMT" assembly. All inputs and outputs are formed on the back of the module and include edge castellations for ease of assembly inspection. The module's flexible design allows for gate and/or drain pulsing, and includes a gate voltage sense port for use in temperature compensation or pulse droop compensation. Leveraging sophisticated thermal management techniques to ensure high reliability, the calculated mean-time-to-failure (MTTF) at 200°C is approximately 600 years.

"Building on a long history of providing similarly sized, very high power LGA module solutions in GaAs, MACOM's GaN in Plastic power modules represent a pivotal evolution in GaN semiconductor technology, providing high overall power performance in a light, ultra-compact 14 x 24 mm package while enabling the greatest possible ease of assembly," said Damian McCann, Engineering Director, MACOM. "This modular, SMT-optimized approach unlocks the full promise of GaN in Plastic for radar applications and introduces unprecedented efficiencies from design to manufacturing."

The table below outlines typical performance:

Test condition for the below table: 1ms pulses, 10% duty cycle P_{IN} = 20dBm

Parameter	Units	MAMG-001214-090PSM
Frequency	GHz	1.2-1.4
Output Power	dBm	50
Power Added Efficiency	%	58
Pulse Droop	dB	0.3
Power Gain	dB	30
2 nd Harmonic	dBc	-40
3 rd Harmonic	dBc	-52
Load Mismatch Stability	-	5:1
Load Mismatch Tolerance	-	6:1
Package Size	mm	14 x 24

MACOM's new GaN in Plastic L-Band 90W power modules are sampling to customers today. For datasheets and additional product information, visit www.macomtech.com/gan

Visit MACOM at Booth #169 at European Microwave Week in Nuremberg, Germany, October 6 - 11, to learn more about MACOM's GaN in Plastic power products.

ABOUT MACOM:

M/A-COM Technology Solutions (www.macomtech.com) is a leading supplier of high performance RF, microwave, and millimeter wave 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 CATV, wireless and optical communications infrastructure, satellite, radar, automotive, industrial, medical, and mobile devices. A pillar of the RF and microwave industry, we thrive on more than 60 years of solving our customers' most complex problems.

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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