Cree Demonstrates Industry's First C-Band GaN HEMT MMIC High-Power Amplifier for Satellite Communications

Cree will demonstrate the industry's first GaN HEMT MMIC high power amplifier (HPA) for satellite communication applications during the 2011 IEEE International Microwave Symposium held June 7-9 in Baltimore. The demonstration product offers dramatic performance improvements over existing commercially-available GaAs MESFET transistors or Traveling Wave Tube-based amplifiers.

"This is the first GaN MMIC to be demonstrated that offers game-changing performance for satellite communication applications due to the outstanding linear efficiency and power gains provided by our GaN HEMT technology. We anticipate our GaN products will have a large impact on how thermal management is approached and will enable reductions in both size and weight for commercial and military satellite communication systems," said Jim Milligan, Cree, director of RF.

The CMPA5585025F MMIC is a 50 ohm (?), 25 watt peak power two-stage GaN HEMT HPA in a multi-pin ceramic/metal package (1"x 0.38"). The instantaneous bandwidth of operation of the MMIC is 5.8 GHz to 8.4 GHz. It provides 15 watts of linear power (<-30 dBc adjacent channel power) with 20 dB power gain. Power added efficiency is 25% at this linear operating power.

The device offers superior linear efficiency (up to 60% higher than conventional solutions) in a small footprint package facilitating reductions in transmitter size and weight with lower cost thermal management. In addition, because this device operates at higher voltages than GaAs MESFETs (e.g., 28 volts versus 12 volts), the transistors draw less current, resulting in lower power distribution losses and higher overall system efficiencies.

Samples of the CMPA5585025F are available now, and production release is targeted for the summer of 2011. For additional product information, visit www.cree.com/rf.

About Cree
Cree is a market-leading innovator of semiconductor solutions for wireless and power applications, lighting-class LEDs, and LED lighting solutions.

Cree's product families include power-switching devices and radio-frequency/wireless devices, blue and green LED chips, high-brightness LEDs, lighting-class power LEDs, and LED fixtures and bulbs. Cree solutions are driving improvements in applications such as variable-speed motors, wireless communications, general illumination, backlighting, and electronic signs and signals.

For additional product and company information, please refer to www.cree.com.

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