GaN MMIC Power Amplifier Delivers 10W from 10 MHz to 10 GHz

Hittite Microwave Corporation, the world class supplier of complete MMIC based solutions for communication & military markets, has introduced a new GaN HEMT MMIC Wideband Power Amplifier which is ideal for test & measurement equipment and military EW and ECM applications up to 10 GHz.

The HMC999 [1] is a GaN HEMT MMIC Distributed Power Amplifier Chip which operates between 0.01 and 10 GHz. This wideband power amplifier provides 11 dB of gain, +38 dBm of output power at 1 dB gain compression and +47 dBm output IP3 at midband. For less demanding applications, the HMC999 [1] can be operated from a drain voltage as low as +28V while still producing 5 Watts of saturated output power.

When biased for maximum output power, the HMC999 [1] consumes 1100 mA of quiescent current from a +48V supply, and achieves approximately 18% power added efficiency at saturation. This compact MMIC power amplifier delivers 10 Watts of saturated output power in a chip area of only 7 mm^2, equating to a power density of 1.5 W/mm^2 across 3 decades of bandwidth. The HMC999 [1] is extremely robust and is designed to reliably operate into partially reflective loads and to tolerate very high incident power levels.

The HMC999 [1] is matched to 50 Ohms on-chip, and requires several external bias decoupling capacitors and an external bias tee for drain bias injection. Samples are available from stock and can be ordered via the company's e-commerce site or via direct purchase order. Released data sheets are available on-line at www.hittite.com [2].

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