

10 Watt SiC MESFET Designed for WiMax PA Applications

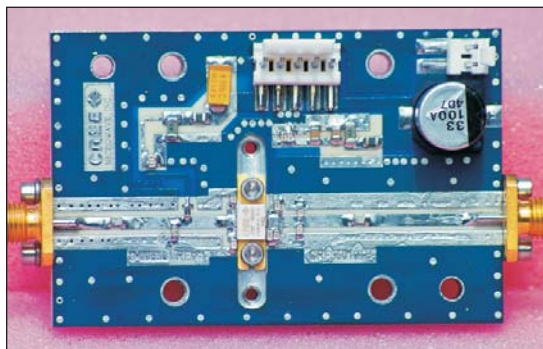
Silicon carbide (SiC) technology reaches a milestone with this 3.4 to 3.8 GHz power transistor

Cree, Inc. is now shipping sample quantities of its new 10-watt packaged silicon carbide MESFET, the CRF35010, optimized

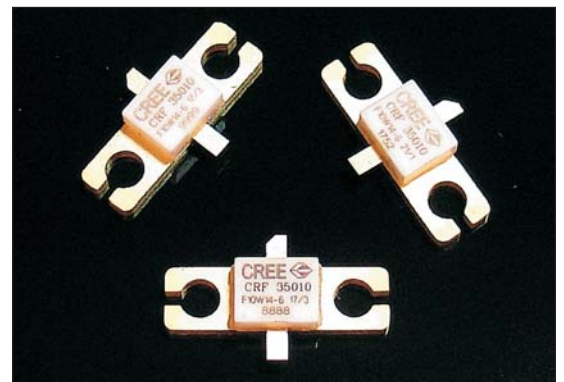
for broadband wireless access and WiMax applications. SiC MESFETs can provide an improvement of nearly twice the operating voltage and at least 4 times the achievable bandwidth compared to traditional technologies such as silicon LDMOS or GaAs.

The CRF35010 typically produces 1.5 watts of average output power and 17 percent drain efficiency with 10 dB of small signal gain under OFDM modulation when operated at 48 volts. Key specifications include:

- V_{DSS} of 48 VDC (65 V max.)
- $R_{\theta JC}$ of 3.6°C/W (junction to case)
- T_J of 250°C max.
- 10 dB typical gain
- 12 watts typical P_{1dB}



A demonstration board is available for evaluation of the CRF35010, providing input and output RF connection, matching and bias circuitry.



Cree's new CRF35010 is an internally matched 10 watt SiC MESFET for broadband wireless access and WiMax applications in the 3.4 to 3.8 GHz band.

- 45% efficiency at P_{1dB}
- -31 dBc IMD_3 at 10 W PEP
- -40 dBc OFDM at 1.5 W
- 17% drain efficiency at 1.5 W
- 10:1 output VSWR at all phase angles

SiC technology gives the CRF35010 the ability to run at higher temperatures and efficiencies than current solutions without sacrificing device reliability, making this device a superior solution for emerging WiMax applications, where power and cooling are often limited.

The CRF35010 is targeted to become available in production quantities in late 2005. Additional information about the CRF35010 can be obtained by contacting the company.

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