Abstracts

An ultra broad band 300 W GaAs power FET for W-CDMA base stations

K. Ebihara, K. Inoue, H. Haematsu, F. Yamaki, H. Takahashi and J. Fukaya. "An ultra broad band 300 W GaAs power FET for W-CDMA base stations." 2001 MTT-S International Microwave Symposium Digest 01.2 (2001 Vol. II [MWSYM]): 649-652 vol.2.

An ultra broad band 300 W power FET for W-CDMA base stations systems has been developed. This FET consists of four newly developed 260 mm total gate width (Wgt) chips fabricated with quasi enhancement-mode (E-mode) structure. The broadband performance is obtained by means of multi-stage quarter wave length transformers, which are formed on high dielectric constant thin substrates. The developed FET demonstrated the performance of 300 W (54.8 dBm) saturated power and 11 dB linear gain at 2.15 GHz. In addition 0.2 dB power gain flatness was achieved across 180 MHz bandwidth (at output power 47 dBm). The group delay of this device was 2.14 nanosecond and the phase flatness was less than 0.35 degree between 2.11 and 2.17 GHz. This is the highest output power and widest bandwidth device ever reported.

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