DD

FET POWER AMPLIFIERS

Chairman: Douglas Maki—Tachonics Corporation

Session Abstract: The papers in this session demonstrate the rapid advances made in the area of high power, high efficiency FET devices and microwave amplifiers. The first paper from Mitsubishi describes a carefully optimized MBE grown FET with a novel three metal gate structure. This device developed eleven watts of power at 6 GHz with a power added efficiency of 44%. Papers from COMSAT and TI describe amplifiers which control the FET load impedance at the fundamental and harmonic frequencies to increase efficiency. COMSAT has achieved a power of 1 WATT from 3.4 to 4.2 GHz with a P.A.E. of 65% using a quasi-monolithic approach and TI demonstrated 5 watts at 10 GHz with a P.A.E. of 36%.

A paper from Avantek presents an FET with a High-Low-High doped, MBE grown active layer. The Schottky contact is formed on the low doped material to provide a high breakdown voltage while the buried high doped layer provides high gm near pinch off. This device provided an output power of 37.7 dBm with 6.7 dB gain at 10 GHz with a P.A.E. of 35%. Finally, an internally matched power FET from Toshiba is reported with a power of 13 watts with 5.8 dB gain and a P.A.E of 25% at 11 GHz and a power of 12.6 watts with 5 dB gain and a P.A.E. of 21% at 14 GHz.

8:30 am–10:00 am, May 27, 1988
Jacob Javits Convention Center, Hall 1E
Room 2