Preliminary

3 W Packaged Single-Bias PHEMT GaAs Power FETs

FEATURES

- 3W Typical Output Power
- 12dB Typical Linear Power Gain at 2.45GHz
- High Linearity: IP3 = 45 dBm Typical
- High Power Added Efficiency: Nominal PAE of 35%
- Breakdown Voltage: $BV_{DGO} \geq 18V$
- Wg = 7.5 mm
- 100 % DC Tested
- Suitable for High Reliability Application

PHOTO ENLARGEMENT



DESCRIPTION

The TC3977 is a single-bias Cu-based ceramic packaged device with TC1706N PHEMT GaAs FETs, which is designed to provide the single power supply. The Cu-based ceramic package provides excellent thermal conductivity for the GaAs FET. The device is suitable for oscillator and power amplifiers in a wide range of commercial application. All devices are 100% DC tested to assure consistent quality.

ELECTRICAL SPECIFICATIONS (@ 2.45 GHz)

Symbol	CONDITIONS	MIN	TYP	MAX	UNIT
P_{1dB}	Output Power at 1dB Gain Compression Point V_{DS} = 10 V	34.5	35.5		dBm
G_L	Linear Power Gain V_{DS} = 10 V		12		dB
IP3	Intercept Point of the 3rd-order Intermodulation V_{DS} = 10 V, *P_{SCL} = 24 dBm		45		dBm
PAE	Power Added Efficiency at 1dB Compression Power		35		%
I_{DS}	Drain-Source Current at V_{DS} = 10 V		900		mA
BV_{DGO}	Drain-Gate Breakdown Voltage at I_{DGO} = 3.75mA	18	22		Volts
R_{th}	Thermal Resistance		5.3		°C/W

Note: *P_{SCL}: Output Power of Single Carrier Level.

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