## 5W Packaged Self-Bias PHEMT GaAs Power FETs

## FEATURES

- 5W Typical Output Power
- 12 dB Typical Linear Power Gain at 2.0 GHz
- High Linearity:

IP3 $=47 \mathrm{dBm}$ Typical

- High Power Added Efficiency:

Nominal PAE of 35\%

- Breakdown Voltage: $\mathrm{BV}_{\mathrm{DGO}} \geq 18 \mathrm{~V}$

- $\mathrm{Wg}=12 \mathrm{~mm}$
- 100 \% DC Tested
- Suitable for High Reliability Application


## DESCRIPTION

The TC3889 is a self-bias flange ceramic packaged device with TC1806N PHEMT GaAs FETs, which is designed to provide the single power supply application. The flange ceramic package provides excellent thermal conductivity for the GaAs FET. The devices only need to provide the positive voltage to drain and ground the source, which is suitable for oscillator, power amplifier application in a wide range of commercial application. All devices are $100 \%$ DC tested to assure consistent quality.

## ELECTRICAL SPECIFICATIONS (@ 2.0 GHz)

| Symbol | CONDITIONS | MIN | TYP | MAX | UNIT |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathrm{P}_{1 \mathrm{~dB}}$ | Output Power at 1dB Gain Compression Point $\mathrm{V}_{\mathrm{DS}}=10 \mathrm{~V}$ | 36 | 37 |  | dBm |
| $\mathrm{G}_{\mathrm{L}}$ | Linear Power Gain $\mathrm{V}_{\mathrm{DS}}=10 \mathrm{~V}$ |  | 12 |  | dB |
| IP3 | Intercept Point of the $3^{\text {rd }}$-order Intermodulation $\mathrm{V}_{\mathrm{DS}}=10 \mathrm{~V}, *_{\mathrm{SCL}}=26 \mathrm{dBm}$ |  | 47 |  | dBm |
| PAE | Power Added Efficiency at 1dB Compression Power |  | 35 |  | \% |
| $\mathrm{I}_{\mathrm{DS}}$ | Drain-Source Current at $\mathrm{V}_{\mathrm{DS}}=10 \mathrm{~V}$ |  | 1300 |  | mA |
| $\mathrm{BV}_{\text {DGO }}$ | Drain-Gate Breakdown Voltage at $\mathrm{I}_{\mathrm{DGO}}=6 \mathrm{~mA}$ | 18 | 22 |  | Volts |
| $\mathrm{R}_{\text {th }}$ | Thermal Resistance |  | 2.7 |  | ${ }^{\circ} \mathrm{C} / \mathrm{W}$ |

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

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