# polyfet rf devices

# G22001

## General Description

Polyfet's GAN (on SiC) HEMT power transistors contain no internal matching; making them suitable for both broadband and narrow band applications.
The use of a thermally enhanced package enables this device to have superior heat dissipation properties. The high drain break down voltage permits this device to operate over a wide voltage range.


RF POWER GAN TRANSISTOR

20.0 Watts Single Ended

Package Style G2

HIGH EFFICIENCY, LINEAR

HIGH GAIN, LOW NOISE

ROHS COMPLIANT

Suitable for use across 1-3000Mhz

## ABSOLUTE MAXIMUM RATINGS ( T = 25 °C )

| Total Device Dissipation | Junction to Case Thermal Resistance | Maximum Junction Temperature | Storage Temperature | Drain to Source Voltage | Gate to Source Voltage |
|---|---|---|---|---|---|
| 40 Watts | 4.20 °C/W | 200 °C | -65 °C to 150 °C | 125 V | -10 V to + 2 V |

## RF CHARACTERISTICS ( 20.0 WATTS OUTPUT )

| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|---|---|---|---|---|---|---|
| Gps | Common Source Power Gain | 11 | | | dB | Idq = 0.13 A, Vds = 28.0 V, F = 2,000 MHz |
| η | Drain Efficiency | | 65 | | % | Idq = 0.13 A, Vds = 28.0 V, F = 2,000 MHz |
| VSWR | Load Mismatch Tolerance | | | 10:1 | Relative | Idq = 0.13 A, Vds = 28.0 V, F = 2,000 MHz |

## ELECTRICAL CHARACTERISTICS ( EACH SIDE )

| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|---|---|---|---|---|---|---|
| Bvdss | Drain Breakdown Voltage | 125 | | | V | Ids = 7.50 mA, Vgs = -8V |
| Idsat | Saturation Current | | 7.20 | | Amp | Vgs = +2V, Vds = 10V |
| Idss | Zero Bias Drain Current | | | 2.0 | mA | Vds = 28.0 V, Vgs = -8V |
| Vgs | Gate Bias for Drain Current | | -2.3 | | V | Vds = 28.0 V Ids = 0.13 A |
| Ciss | Common Source Input Capacitance | | 7.2 | | pF | Vds = 28.0 Vgs = -8V, F = 1 MHz |
| Crss | Common Source Feedback Capacitance | | 0.56 | | pF | Vds = 28.0 Vgs = -8V, F = 1 MHz |
| Coss | Common Source Output Capacitance | | 4.0 | | pF | Vds = 28.0 Vgs = -8V, F = 1 MHz |



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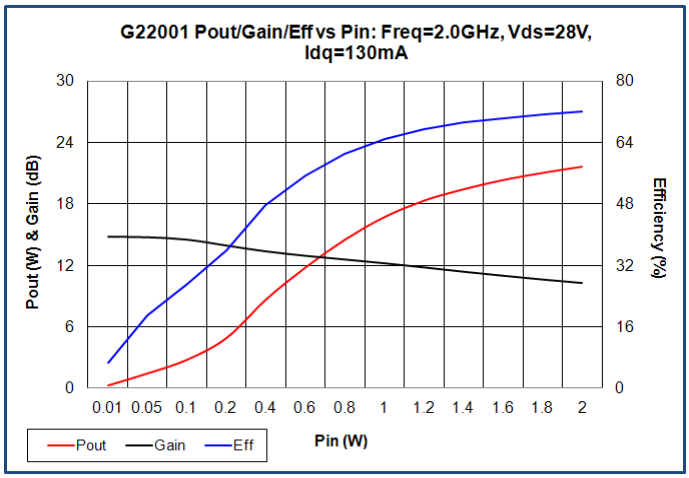
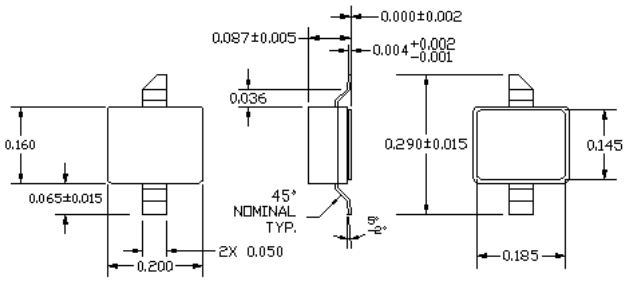
POUT VS PIN GRAPH




PACKAGE DIMENSIONS IN INCHES




POLYFET SO2 PACKAGE

Tolerance .XX +/-0.01 .XXX +/-.005 inches

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REVISION 08/03/2016

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