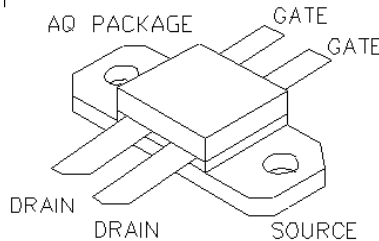




General Description

Silicon VDMOS and LDMOS transistors designed specifically for broadband RF applications. Suitable for Military Radios, Cellular and Paging Amplifier Base Stations, Broadcast FM/AM, MRI, Laser Driver and others.

"Polyfet"TM process features gold metal for greatly extended lifetime. Low output capacitance and high F_t enhance broadband performance



PATENTED GOLD METALIZED SILICON GATE ENHANCEMENT MODE RF POWER VDMOS TRANSISTOR

20Watts Push - Pull

Package Style AQ

HIGH EFFICIENCY, LINEAR, HIGH GAIN, LOW NOISE

ABSOLUTE MAXIMUM RATINGS (TC = 25 °C)

| Total Device Dissipation | Junction to Case Thermal Resistance | Maximum Junction Temperature | Storage Temperature | DC Drain Current | Drain to Gate Voltage | Drain to Source Voltage | Gate to Source Voltage |
|--------------------------|-------------------------------------|------------------------------|---------------------|------------------|-----------------------|-------------------------|------------------------|
| 100Watts | 1.75 °C/W | 200 °C | -65°C to 150°C | 4 A | 70 V | 70V | 30V |

RF CHARACTERISTICS (20WATTS OUTPUT)

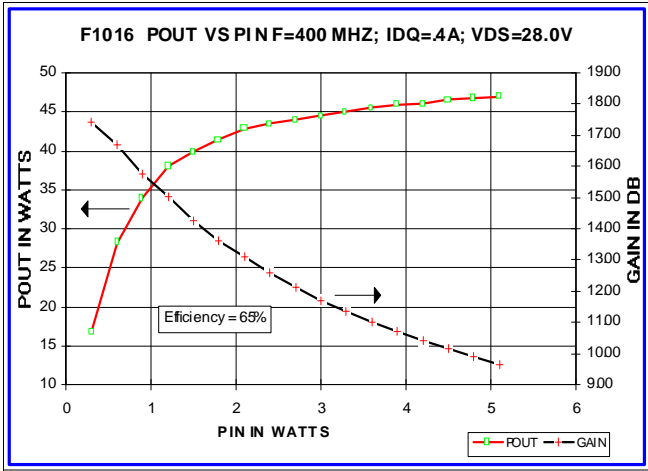
| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|--------|--------------------------|-----|-----|------|----------|---------------------------------------|
| Gps | Common Source Power Gain | 13 | | | dB | Idq = 0.4 A, Vds = 28.0V, F = 400 MHz |
| η | Drain Efficiency | | 60 | | % | Idq = 0.4 A, Vds = 28.0V, F = 400 MHz |
| VSWR | Load Mismatch Tolerance | | | 20:1 | Relative | Idq = 0.4 A, Vds = 28.0V, F = 400 MHz |

ELECTRICAL CHARACTERISTICS (EACH SIDE)

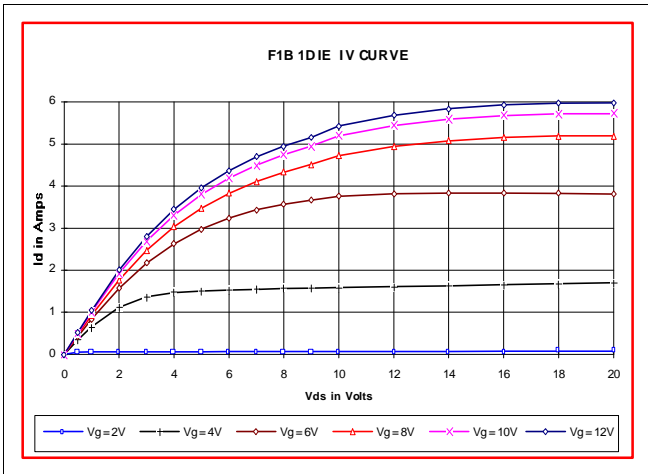
| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|--------|------------------------------------|-----|-----|-----|-------|-----------------------------------|
| Bvdss | Drain Breakdown Voltage | 65 | | | V | Ids = 0.05 A, Vgs = 0V |
| Idss | Zero Bias Drain Current | | | 1 | mA | Vds = 28.0V, Vgs = 0V |
| Igss | Gate Leakage Current | | | 1 | uA | Vds = 0 V, Vgs = 30V |
| Vgs | Gate Bias for Drain Current | 1 | | 7 | V | Ids = 0.1 A, Vgs = Vds |
| gM | Forward Transconductance | | 0.8 | | Mho | Vds = 10V, Vgs = 5V |
| Rdson | Saturation Resistance | | 1 | | Ohm | Vgs = 20V, Ids = 4A |
| Idsat | Saturation Current | | 5.5 | | Amp | Vgs = 20V, Vds = 10V |
| Ciss | Common Source Input Capacitance | | 33 | | pF | Vds = 28.0 V, Vgs = 0V, F = 1 MHz |
| Crss | Common Source Feedback Capacitance | | 4 | | pF | Vds = 28.0 V, Vgs = 0V, F = 1 MHz |
| Coss | Common Source Output Capacitance | | 20 | | pF | Vds = 28.0 V, Vgs = 0V, F = 1 MHz |

F1016

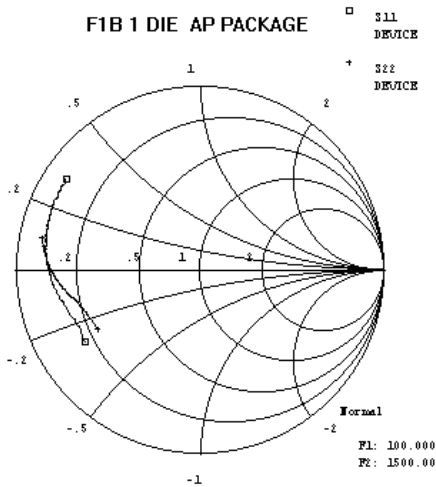
POUT VS PIN GRAPH



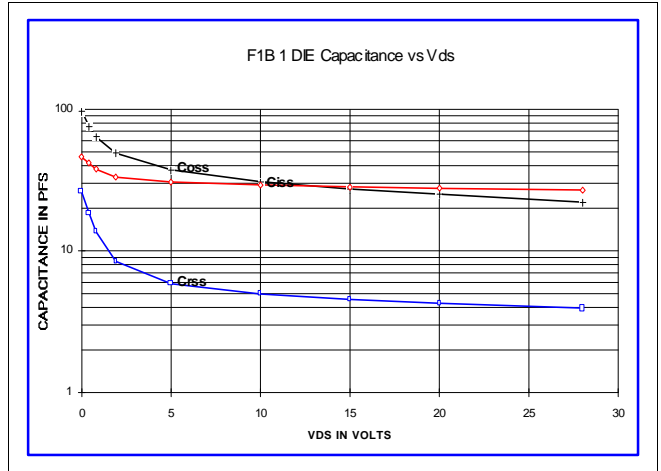
IV CURVE



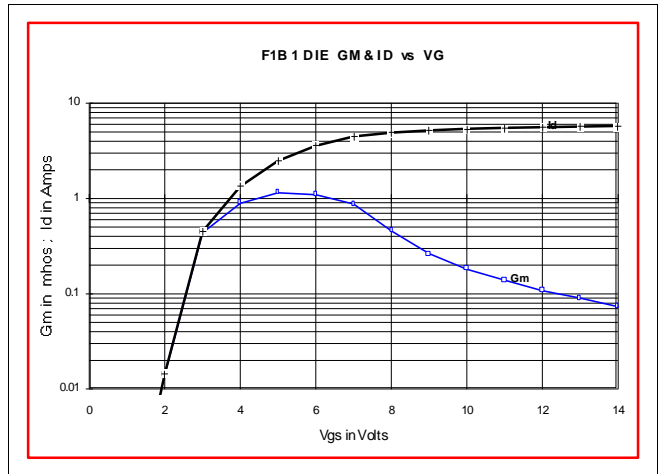
S11 AND S22 SMITH CHART



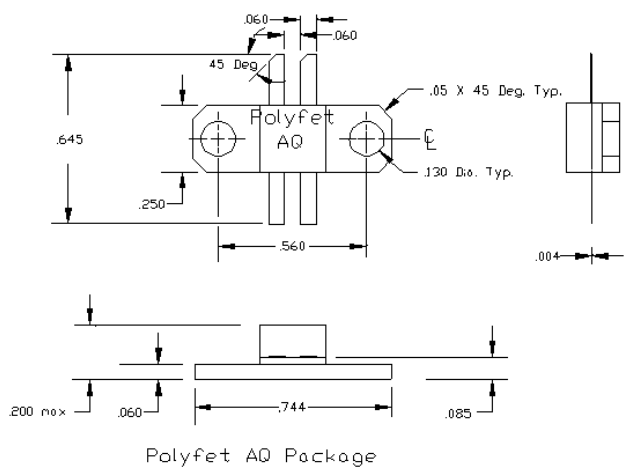
CAPACITANCE VS VOLTAGE



ID AND GM VS VGS



PACKAGE DIMENSIONS IN INCHES



Tolerance 0.XX +/- 0.01 0.XXX +/- 0.005 inches

POLYFET RF DEVICES

REVISION 8/1/97



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