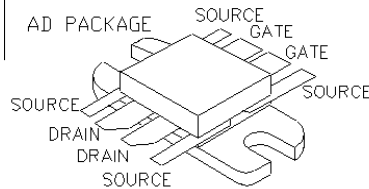




General Description

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"™ 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

40 Watts Push - Pull

Package Style AD

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 |
|--------------------------|-------------------------------------|------------------------------|---------------------|------------------|-----------------------|-------------------------|------------------------|
| 170 Watts | 1.05 °C/W | 200 °C | -65 °C to 150 °C | 8 A | 70 V | 70V | 30V |

RF CHARACTERISTICS (40WATTS OUTPUT)

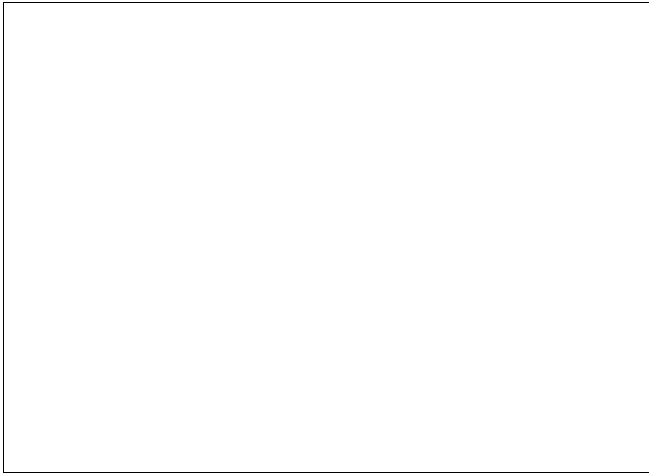
| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|--------|--------------------------|-----|-----|------|----------|--|
| Gps | Common Source Power Gain | 13 | | | dB | $I_{dq} = 0.8 \text{ A}$, $V_{ds} = 28.0 \text{ V}$, $F = 400 \text{ MHz}$ |
| η | Drain Efficiency | | 60 | | % | $I_{dq} = 0.8 \text{ A}$, $V_{ds} = 28.0 \text{ V}$, $F = 400 \text{ MHz}$ |
| VSWR | Load Mismatch Tolerance | | | 20:1 | Relative | $I_{dq} = 0.8 \text{ A}$, $V_{ds} = 28.0 \text{ V}$, $F = 400 \text{ MHz}$ |

ELECTRICAL CHARACTERISTICS (EACH SIDE)

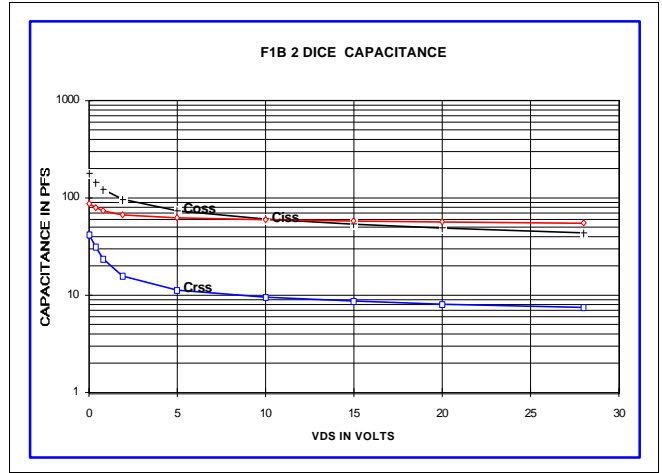
| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|--------|------------------------------------|-----|-----|-----|-------|--|
| Bvdss | Drain Breakdown Voltage | 65 | | | V | $I_{ds} = 0.1 \text{ A}$, $V_{gs} = 0 \text{ V}$ |
| Idss | Zero Bias Drain Current | | | 2 | mA | $V_{ds} = 28.0 \text{ V}$, $V_{gs} = 0 \text{ V}$ |
| Igss | Gate Leakage Current | | | 1 | uA | $V_{ds} = 0 \text{ V}$, $V_{gs} = 30 \text{ V}$ |
| Vgs | Gate Bias for Drain Current | 1 | | 7 | V | $I_{ds} = 0.2 \text{ A}$, $V_{gs} = V_{ds}$ |
| gM | Forward Transconductance | | 1.6 | | Mho | $V_{ds} = 10 \text{ V}$, $V_{gs} = 5 \text{ V}$ |
| Rdson | Saturation Resistance | | 0.7 | | Ohm | $V_{gs} = 20 \text{ V}$, $I_{ds} = 8 \text{ A}$ |
| Idsat | Saturation Current | | 11 | | Amp | $V_{gs} = 20 \text{ V}$, $V_{ds} = 10 \text{ V}$ |
| Ciss | Common Source Input Capacitance | | 66 | | pF | $V_{ds} = 28.0 \text{ V}$, $V_{gs} = 0 \text{ V}$, $F = 1 \text{ MHz}$ |
| Crss | Common Source Feedback Capacitance | | 8 | | pF | $V_{ds} = 28.0 \text{ V}$, $V_{gs} = 0 \text{ V}$, $F = 1 \text{ MHz}$ |
| Coss | Common Source Output Capacitance | | 40 | | pF | $V_{ds} = 28.0 \text{ V}$, $V_{gs} = 0 \text{ V}$, $F = 1 \text{ MHz}$ |

F1040

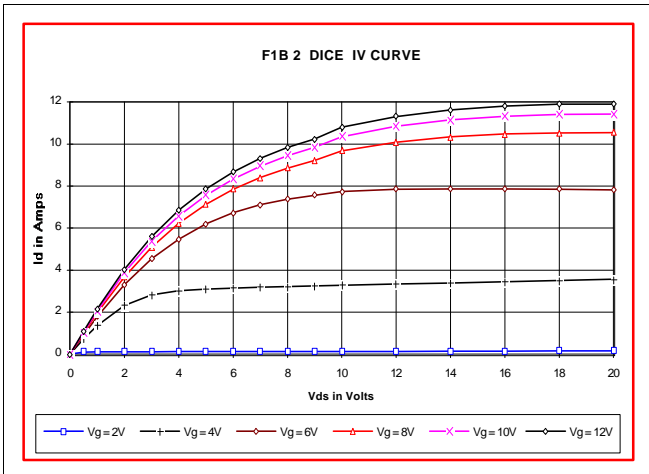
POUT VS PIN GRAPH



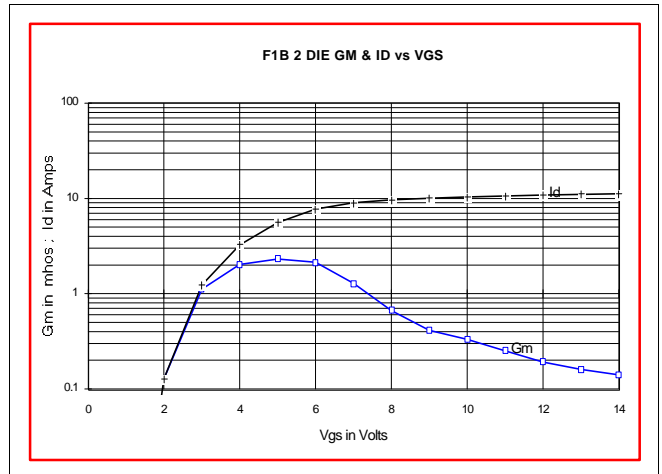
CAPACITANCE VS VOLTAGE



IV CURVE



ID AND GM VS VGS



S11 AND S22 SMITH CHART

PACKAGE DIMENSIONS IN INCHES

