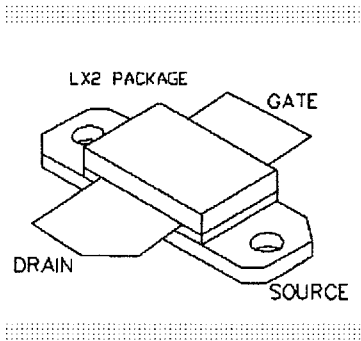




**General Description**

Silicon DMOS designed specifically for RF applications. Immune to forward and reverse bias secondary breakdown "Polyfet"<sup>™</sup> process features gold metal for greatly extended lifetime. Low output capacitance and high  $F_t$  enhance broad band performance.



**PATENTED GOLD METALIZED SILICON RF POWER MOSFET USEFUL FOR NARROW AND BROADBAND APPLICATIONS**

**15.0 Watts Single Ended Package Style LX2**

**HIGH EFFICIENCY, LINEAR HIGH GAIN, LOW NOISE**

**ABSOLUTE MAXIMUM RATINGS (  $T_c = 25^\circ C$  )**

| 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 |
|--------------------------|-------------------------------------|------------------------------|---------------------|------------------|-----------------------|-------------------------|------------------------|
| 50 Watts                 | 3.50 °C/W                           | 200 °C                       | -65 °C to 150 °C    | 2.0 A            | 70V                   | 70V                     | 30V                    |

**RF CHARACTERISTICS ( 15.0 WATTS OUTPUT )**

| SYMBOL | PARAMETER                | MIN | TYP | MAX  | UNITS    | TEST CONDITIONS                                  |
|--------|--------------------------|-----|-----|------|----------|--|
| Gps    | Common Source Power Gain | 13  |     |      | dB       | $I_{dq} = 0.40 A, V_{ds} = 28.0V, F = 1,000MHz$  |
| $\eta$ | Drain Efficiency         |     | 55  |      | %        | $I_{dq} = 0.40 A, V_{ds} = 28.0V, F = 1,000 MHz$ |
| VSWR   | Load Mismatch Tolerance  |     |     | 20:1 | Relative | $I_{dq} = 0.40 A, V_{ds} = 28.0V, F = 1,000MHz$  |

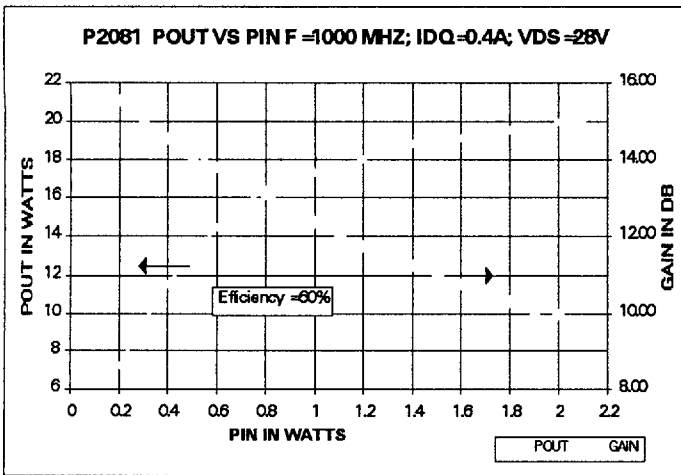
**ELECTRICAL CHARACTERISTICS ( EACH SIDE )**

| SYMBOL            | PARAMETER                          | MIN | TYP  | MAX | UNITS | TEST CONDITIONS                        |
|-------------------|------------------------------------|-----|------|-----|-------|--|
| Bvdss             | Drain Breakdown Voltage            | 65  |      |     | V     | $I_{ds} = 0.05 A, V_{gs} = 0V$         |
| Idss              | Zero Bias Drain Current            |     |      | 1.0 | mA    | $V_{ds} = 28.0V, V_{gs} = 0V$          |
| Igss              | Gate Leakage Current               |     |      | 1   | uA    | $V_{ds} = 0V, V_{gs} = 30V$            |
| Vgs               | Gate Bias for Drain Current        | 1   |      | 7   | V     | $I_{ds} = 0.10 A, V_{gs} = V_{ds}$     |
| gM                | Forward Transconductance           |     | 0.8  |     | Mho   | $V_{ds} = 10V, V_{gs} = 5V$            |
| Rdson             | Saturation Resistance              |     | 1.00 |     | Ohm   | $V_{gs} = 20V, I_{ds} = 4.00 A$        |
| I <sub>dsat</sub> | Saturation Current                 |     | 6.00 |     | Amp   | $V_{gs} = 20V, V_{ds} = 10V$           |
| Ciss              | Common Source Input Capacitance    |     | 30.0 |     | pF    | $V_{ds} = 28V, V_{gs} = 0V, F = 1 MHz$ |
| Crss              | Common Source Feedback Capacitance |     | 1.5  |     | pF    | $V_{ds} = 28V, V_{gs} = 0V, F = 1 MHz$ |
| Coss              | Common Source Output Capacitance   |     | 15.0 |     | pF    | $V_{ds} = 28V, V_{gs} = 0V, F = 1 MHz$ |

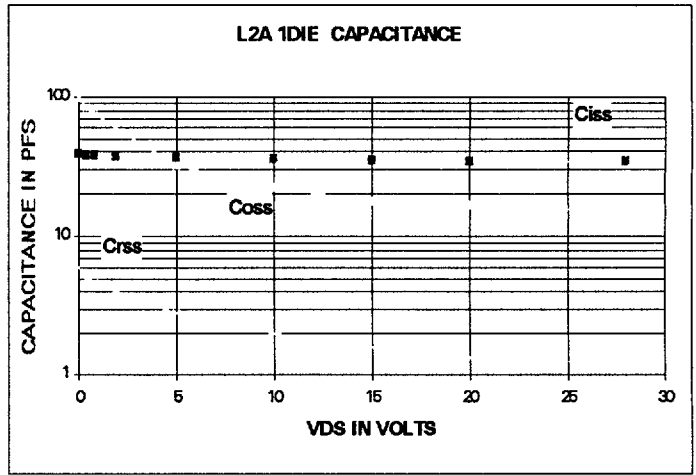
**POLYFET RF DEVICES**

# L2081

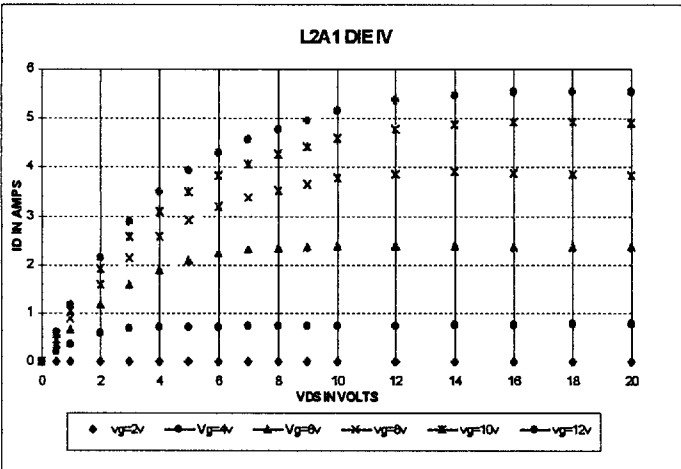
POUT VS PIN GRAPH



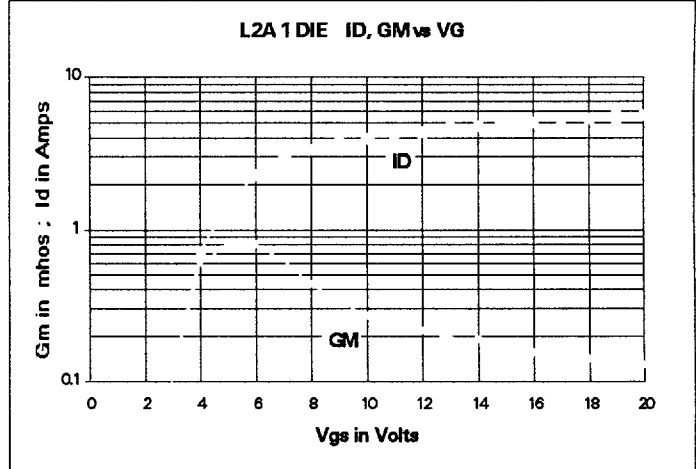
CAPACITANCE VS VOLTAGE



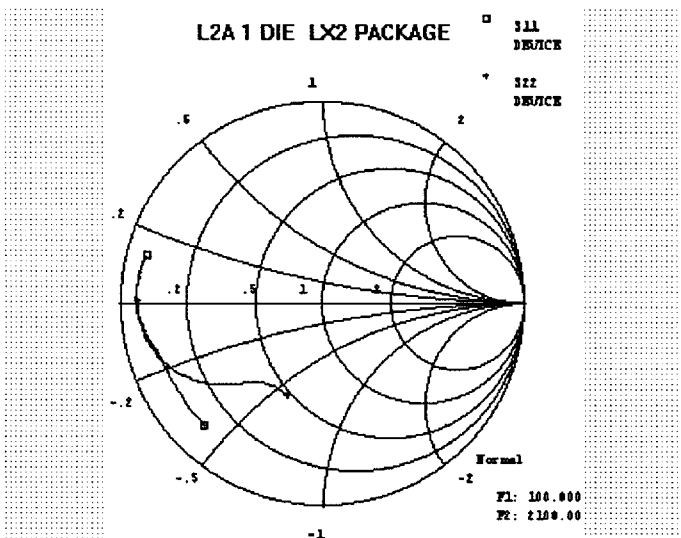
IV CURVE



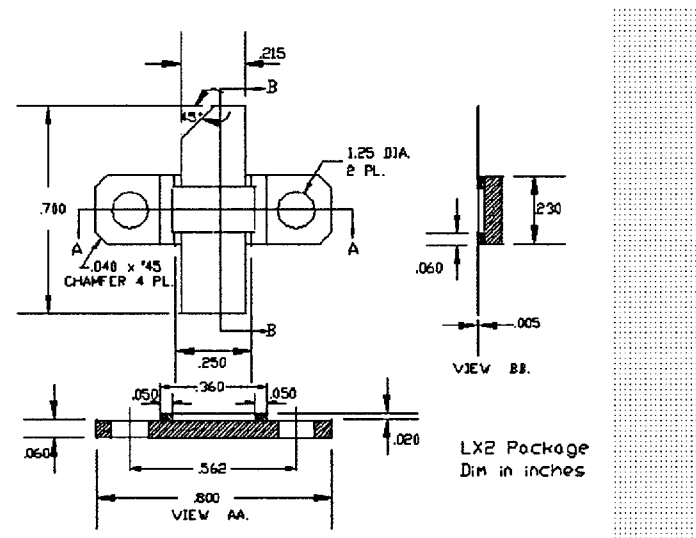
ID & GM VS VGS



S11 & S22 SMITH CHART



PACKAGE DIMENSIONS IN INCHES



## POLYFET RF DEVICES

1110 Avenida Acaso, Camarillo, California, 93012 USA Telephone: (805)-484-4210 FAX: (805)-484-3393 REV H, 3/96

7241009 0000279 326