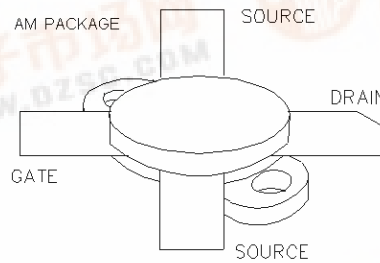


# F1077

## 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"<sup>TM</sup> 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

125Watts Single Ended

Package Style AM

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 |
|--------------------------|-------------------------------------|------------------------------|---------------------|------------------|-----------------------|-------------------------|------------------------|
| 250 Watts                | 0.7 °C/W                            | 200 °C                       | -65 °C to 150 °C    | 12 A             | 70 V                  | 70V                     | 30V                    |

## RF CHARACTERISTICS ( 125WATTS OUTPUT )

| SYMBOL | PARAMETER                | MIN | TYP | MAX  | UNITS    | TEST CONDITIONS                                |
|--------|--------------------------|-----|-----|------|----------|--|
| Gps    | Common Source Power Gain | 11  |     |      | dB       | $I_{dq} = 1.2 A, V_{ds} = 28.0 V, F = 150 MHz$ |
| $\eta$ | Drain Efficiency         |     | 60  |      | %        | $I_{dq} = 1.2 A, V_{ds} = 28.0 V, F = 150 MHz$ |
| VSWR   | Load Mismatch Toleranc   |     |     | 20:1 | Relative | $I_{dq} = 1.2 A, V_{ds} = 28.0 V, F = 150 MHz$ |

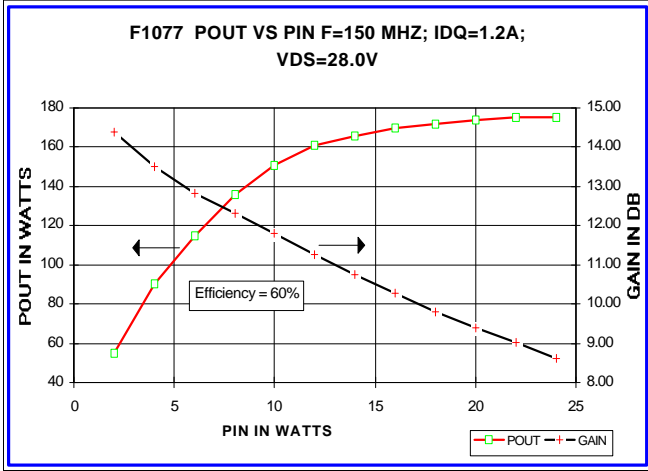
## ELECTRICAL CHARACTERISTICS (EACH SIDE)

| SYMBOL     | PARAMETER                         | MIN | TYP  | MAX | UNITS | TEST CONDITIONS                           |
|------------|-----------------------------------|-----|------|-----|-------|---|
| Bvdss      | Drain Breakdown Voltag            | 65  |      |     | V     | $I_{ds} = 0.3 A, V_{gs} = 0V$             |
| $I_{dss}$  | Zero Bias Drain Curren            |     |      | 6   | mA    | $V_{ds} = 28.0 V, V_{gs} = 0V$            |
| $I_{gss}$  | Gate Leakage Curren               |     |      | 1   | uA    | $V_{ds} = 0 V, V_{gs} = 30V$              |
| Vgs        | Gate Bias for Drain Curren        | 1   |      | 7   | V     | $I_{ds} = 0.6 A, V_{gs} = V_{ds}$         |
| gM         | Forward Transconductanc           |     | 4.8  |     | Mho   | $V_{ds} = 10V, V_{gs} = 5V$               |
| Rdson      | Saturation Resistanc              |     | 0.18 |     | Ohm   | $V_{gs} = 20V, I_{ds} = 24A$              |
| $I_{dsat}$ | Saturation Curren                 |     | 33   |     | Amp   | $V_{gs} = 20V, V_{ds} = 10V$              |
| Ciss       | Common Source Input Capacitanc    |     | 198  |     | pF    | $V_{ds} = 28.0 V, V_{gs} = 0V, F = 1 MHz$ |
| Crss       | Common Source Feedback Capacitanc |     | 24   |     | pF    | $V_{ds} = 28.0 V, V_{gs} = 0V, F = 1 MHz$ |
| Coss       | Common Source Output Capacitanc   |     | 120  |     | pF    | $V_{ds} = 28.0 V, V_{gs} = 0V, F = 1 MHz$ |

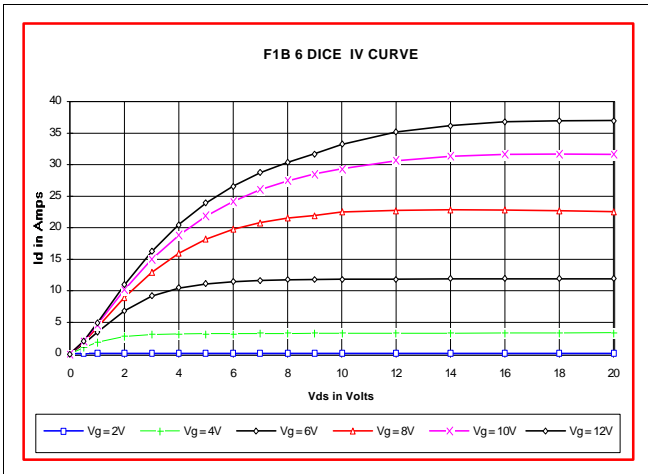


# F1077

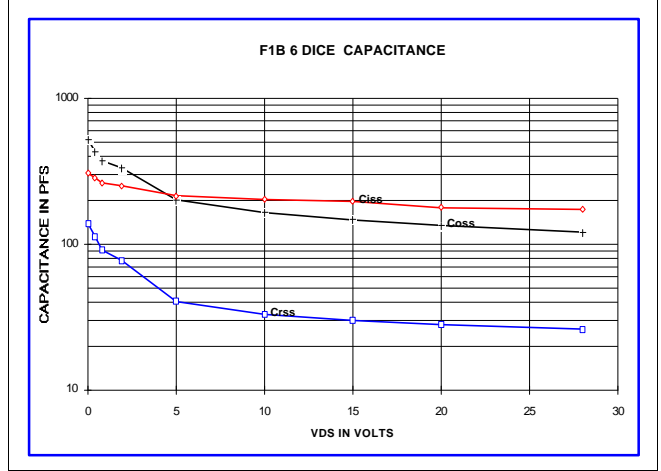
POUT VS PIN GRAPH



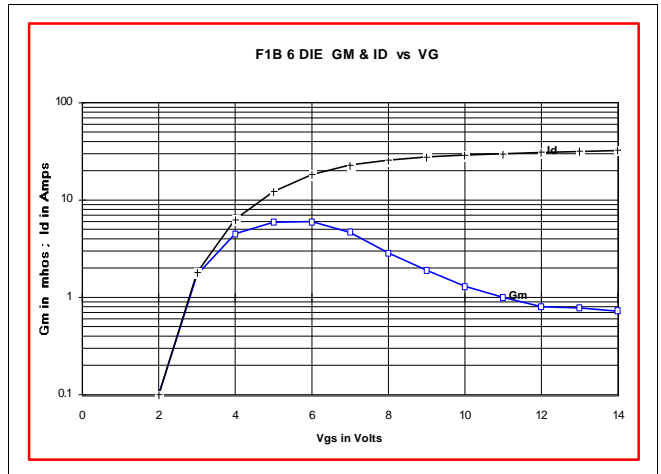
IV CURVE



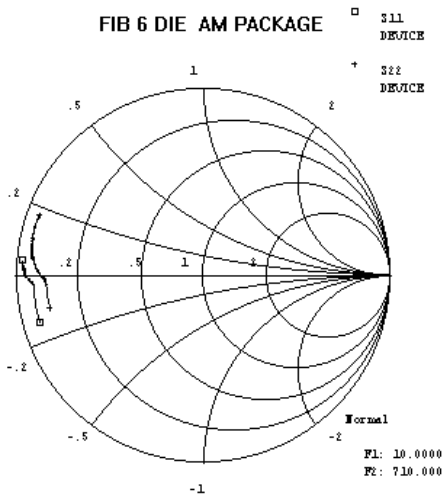
CAPACITANCE VS VOLTAGE



ID AND GM VS VGS



S11 AND S22 SMITH CHART



PACKAGE DIMENSIONS IN INCHES

