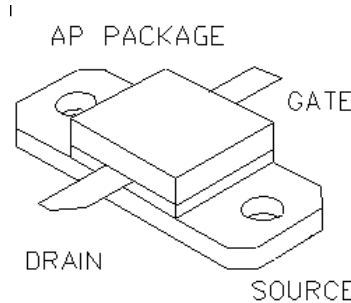




**General Description**

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 low feedback and output capacitances resulting in high  $F_t$  transistors with high input impedance and high efficiency.



**SILICON GATE ENHANCEMENT MODE**

**RF POWER VDMOS TRANSISTOR**

**25.0 Watts Single Ended**

**Package Style AP**

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

**ABSOLUTE MAXIMUM RATINGS ( T = 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 |
|--------------------------|-------------------------------------|------------------------------|---------------------|------------------|-----------------------|-------------------------|------------------------|
| 60 Watts                 | 2.80 °C/W                           | 200 °C                       | -65 °C to 150 °C    | 2.5 A            | 125V                  | 125V                    | 20 V                   |

**RF CHARACTERISTICS ( 25.0 WATTS OUTPUT )**

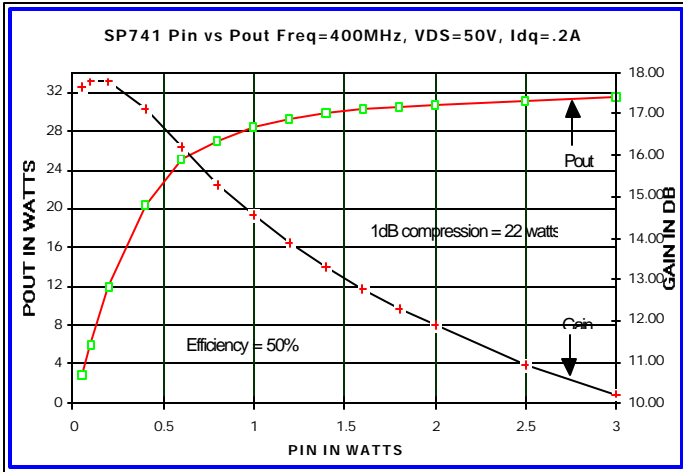
| SYMBOL | PARAMETER                | MIN | TYP | MAX  | UNITS    | TEST CONDITIONS                        |
|--------|--------------------------|-----|-----|------|----------|--|
| Gps    | Common Source Power Gain | 12  |     |      | dB       | Idq = 0.20 A, Vds = 50.0 V, F = 400MHz |
| $\eta$ | Drain Efficiency         |     | 50  |      | %        | Idq = 0.20 A, Vds = 50.0 V, F = 400MHz |
| VSWR   | Load Mismatch Tolerance  |     |     | 20:1 | Relative | Idq = 0.20 A, Vds = 50.0 V, F = 400MHz |

**ELECTRICAL CHARACTERISTICS ( EACH SIDE )**

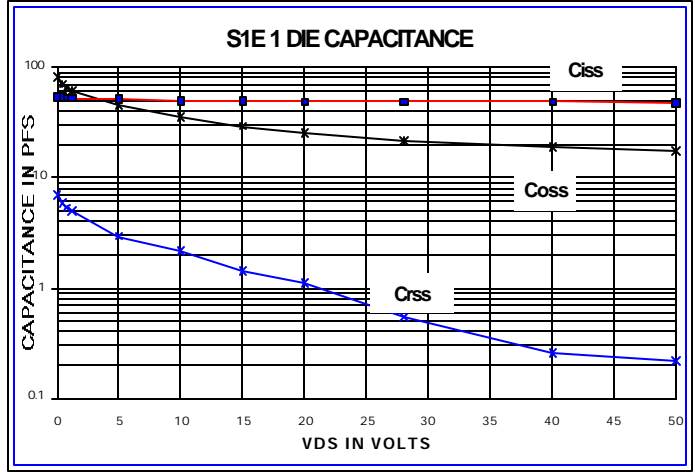
| SYMBOL | PARAMETER                          | MIN | TYP  | MAX | UNITS | TEST CONDITIONS                |
|--------|------------------------------------|-----|------|-----|-------|--------------------------------|
| Bvdss  | Drain Breakdown Voltage            | 125 |      |     | V     | Ids = 10.00 mA, Vgs = 0V       |
| Idss   | Zero Bias Drain Current            |     |      | 1.0 | mA    | Vds = 50.0 V, Vgs = 0V         |
| Igss   | Gate Leakage Current               |     |      | 1   | uA    | Vds = 0V Vgs = 30V             |
| Vgs    | Gate Bias for Drain Current        | 1   |      | 7   | V     | Ids = 0.05 A, Vgs = Vds        |
| gM     | Forward Transconductance           |     | 0.8  |     | Mho   | Vds = 10V, Vgs = 5V            |
| Rdson  | Saturation Resistance              |     | 2.50 |     | Ohm   | Vgs = 20V, Ids = 1.00 A        |
| Idsat  | Saturation Current                 |     | 3.50 |     | Amp   | Vgs = 20V, Vds = 10V           |
| Ciss   | Common Source Input Capacitance    |     | 48.0 |     | pF    | Vds = 50.0 Vgs = 0V, F = 1 MHz |
| Crss   | Common Source Feedback Capacitance |     | 0.2  |     | pF    | Vds = 50.0 Vgs = 0V, F = 1 MHz |
| Coss   | Common Source Output Capacitance   |     | 17.0 |     | pF    | Vds = 50.0 Vgs = 0V, F = 1 MHz |

# SP741

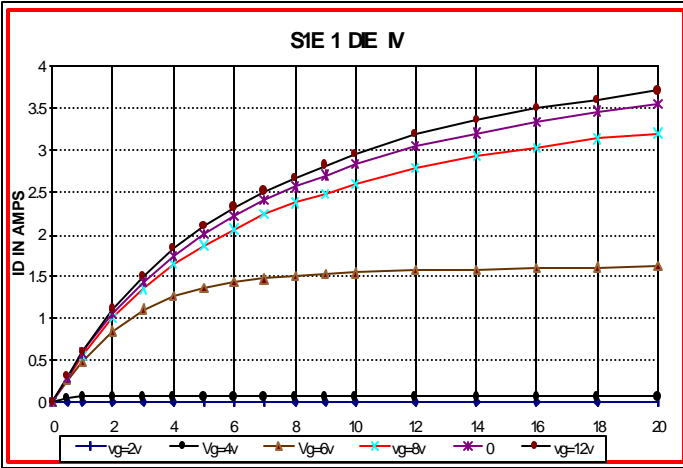
POUT VS PIN GRAPH



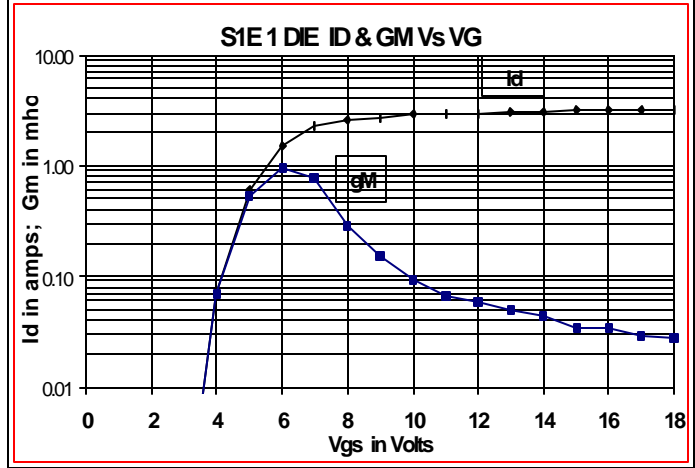
CAPACITANCE VS VOLTAGE



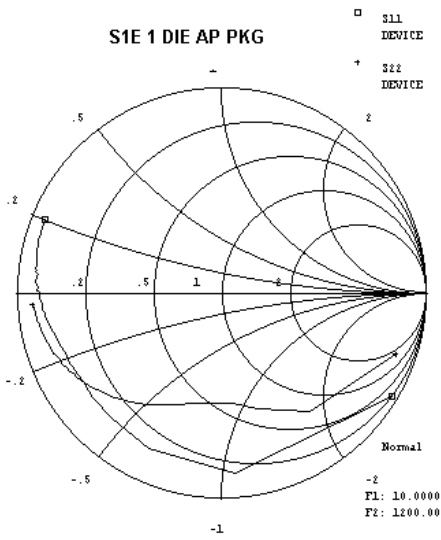
IV CURVE



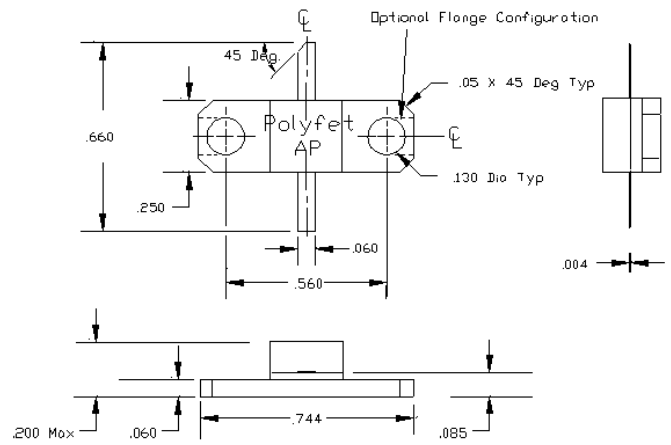
ID & GM VS VGS



S11 & S22 SMITH CHART



PACKAGE DIMENSIONS IN INCHES



Polyfet AP Package

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