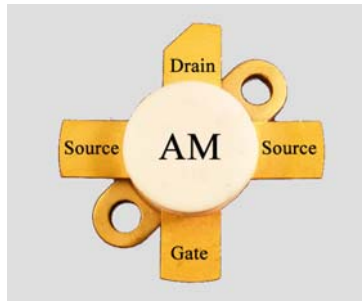




**General Description**

Silicon VDMOS transistor designed specifically for Broadband RF applications. Suitable for Military Radios, Cellular Base Stations, Broadcast FM/AM, MRI, Laser Drivers and others.

"Polyfet" process features low feedback and output capacitances, resulting in high Ft transistors with high input impedance and high efficiency.



**SILICON GATE ENHANCEMENT MODE**

**RF POWER VDMOS TRANSISTOR**

125.0 Watts Single Ended

Package Style AM

HIGH EFFICIENCY, LINEAR

HIGH GAIN, LOW NOISE

ROHS COMPLIANT

**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 |
|--------------------------|-------------------------------------|------------------------------|---------------------|------------------|-----------------------|-------------------------|------------------------|
| 190 Watts                | 0.85 °C/W                           | 200 °C                       | -65 °C to 150 °C    | 11.5 A           | 70 V                  | 70 V                    | + 20 V<br>- 0 V        |

**RF CHARACTERISTICS ( 125.0 WATTS OUTPUT )**

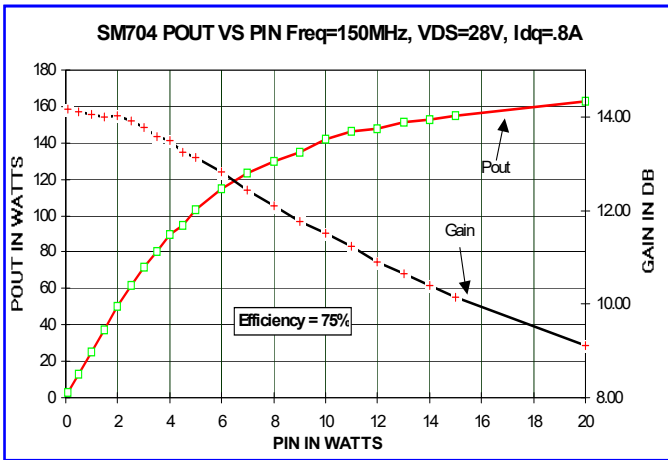
| SYMBOL | PARAMETER                | MIN | TYP | MAX  | UNITS    | TEST CONDITIONS                         |
|--------|--------------------------|-----|-----|------|----------|---|
| Gps    | Common Source Power Gain | 13  |     |      | dB       | Idq = 0.80 A, Vds = 28.0 V, F = 150 MHz |
| η      | Drain Efficiency         |     | 75  |      | %        | Idq = 0.80 A, Vds = 28.0 V, F = 150 MHz |
| VSWR   | Load Mismatch Tolerance  |     |     | 20:1 | Relative | Idq = 0.80 A, Vds = 28.0 V, F = 150 MHz |

**ELECTRICAL CHARACTERISTICS ( EACH SIDE )**

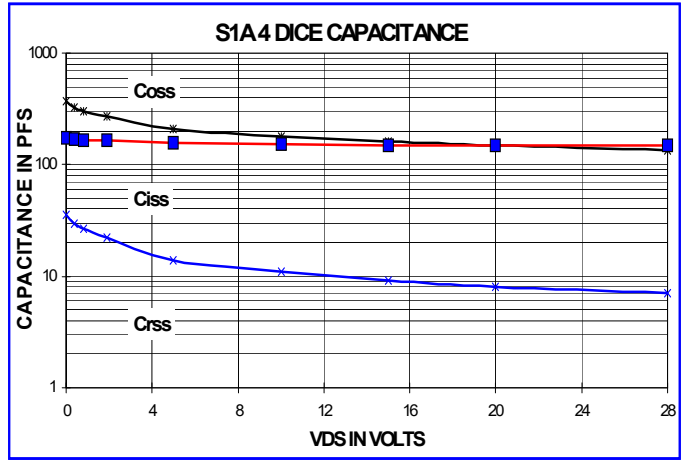
| SYMBOL | PARAMETER                          | MIN | TYP   | MAX | UNITS | TEST CONDITIONS                |
|--------|------------------------------------|-----|-------|-----|-------|--------------------------------|
| Bvdss  | Drain Breakdown Voltage            | 65  |       |     | V     | Ids = 80.00 mA, Vgs = 0V       |
| Idss   | Zero Bias Drain Current            |     |       | 4.0 | mA    | Vds = 28.0 V, Vgs = 0V         |
| Igss   | Gate Leakage Current               |     |       | 1   | uA    | Vds = 0V Vgs = 10V             |
| Vgs    | Gate Bias for Drain Current        | 2   |       | 5   | V     | Ids = 0.40 A, Vgs = Vds        |
| gM     | Forward Transconductance           |     | 4.8   |     | Mho   | Vds = 10V, Vgs = 5V            |
| Rdson  | Saturation Resistance              |     | 0.25  |     | Ohm   | Vgs = 20 V, Ids = 10.00 A      |
| Idsat  | Saturation Current                 |     | 28.00 |     | Amp   | Vgs = 20 V, Vds = 10V          |
| Ciss   | Common Source Input Capacitance    |     | 200.0 |     | pF    | Vds = 28.0 Vgs = 0V, F = 1 MHz |
| Crss   | Common Source Feedback Capacitance |     | 12.0  |     | pF    | Vds = 28.0 Vgs = 0V, F = 1 MHz |
| Coss   | Common Source Output Capacitance   |     | 128.0 |     | pF    | Vds = 28.0 Vgs = 0V, F = 1 MHz |

# SM704

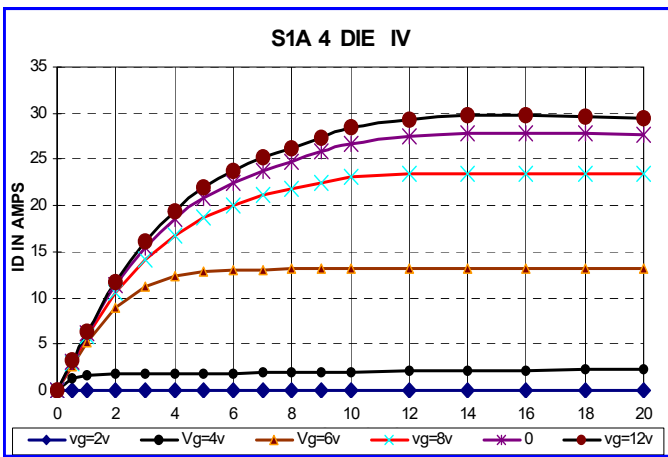
POUT VS PIN GRAPH



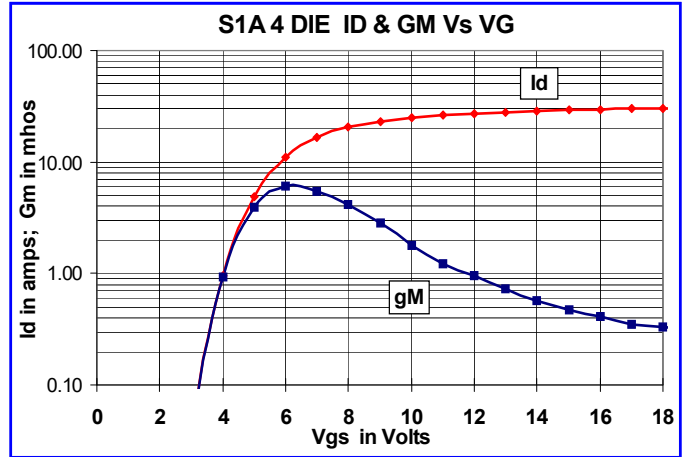
CAPACITANCE VS VOLTAGE



IV CURVE



ID & GM VS VGS



PACKAGE DIMENSIONS IN INCHES

