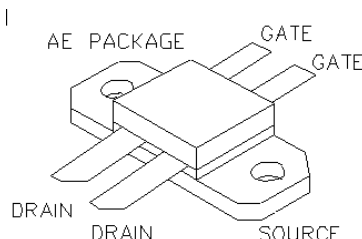




General Description

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 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

45.0 Watts Push - Pull

Package Style AE

HIGH EFFICIENCY, LINEAR
HIGH GAIN, LOW NOISE

ABSOLUTE MAXIMUM RATINGS ($T = 25^{\circ}\text{C}$)

| 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 |
|--------------------------|-------------------------------------|------------------------------|--|------------------|-----------------------|-------------------------|------------------------|
| 110 Watts | 1.40 $^{\circ}\text{C/W}$ | 200 $^{\circ}\text{C}$ | -65 $^{\circ}\text{C}$ to 150 $^{\circ}\text{C}$ | 6.5 A | 70V | 70V | 20 V |

RF CHARACTERISTICS (45.0 WATTS OUTPUT)

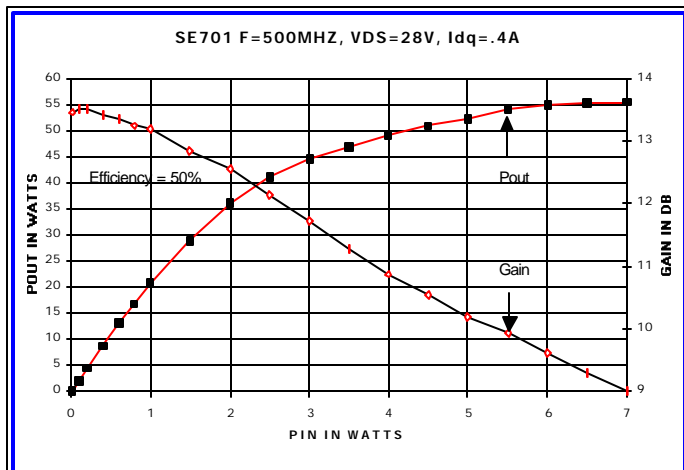
| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|--------|--------------------------|-----|-----|------|----------|---|
| Gps | Common Source Power Gain | 10 | | | dB | $I_{dq} = 0.40 \text{ A}$, $V_{ds} = 28.0 \text{ V}$, $F = 500 \text{ MHz}$ |
| η | Drain Efficiency | | 55 | | % | $I_{dq} = 0.40 \text{ A}$, $V_{ds} = 28.0 \text{ V}$, $F = 500 \text{ MHz}$ |
| VSWR | Load Mismatch Tolerance | | | 20:1 | Relative | $I_{dq} = 0.40 \text{ A}$, $V_{ds} = 28.0 \text{ V}$, $F = 500 \text{ MHz}$ |

ELECTRICAL CHARACTERISTICS (EACH SIDE)

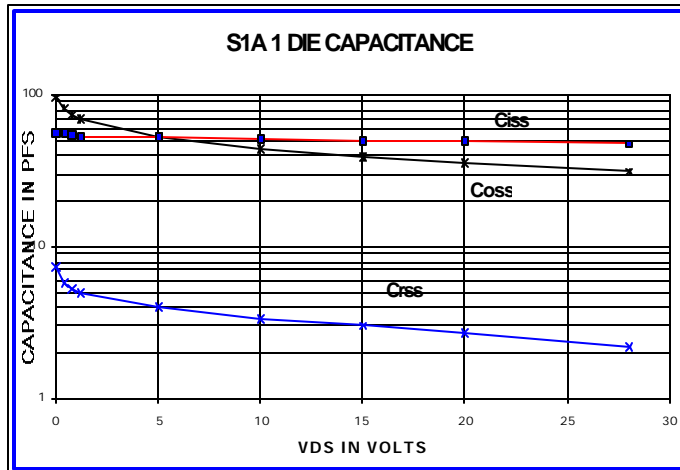
| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|--------|------------------------------------|-----|------|-----|---------------|--|
| Bvdss | Drain Breakdown Voltage | 65 | | | V | $I_{ds} = 20.00 \text{ mA}$, $V_{gs} = 0 \text{ V}$ |
| Idss | Zero Bias Drain Current | | | 1.0 | mA | $V_{ds} = 28.0 \text{ V}$, $V_{gs} = 0 \text{ V}$ |
| Igss | Gate Leakage Current | | | 1 | μA | $V_{ds} = 0 \text{ V}$, $V_{gs} = 30 \text{ V}$ |
| Vgs | Gate Bias for Drain Current | 1 | | 7 | V | $I_{ds} = 0.10 \text{ A}$, $V_{gs} = V_{ds}$ |
| gM | Forward Transconductance | | 1.2 | | Mho | $V_{ds} = 10 \text{ V}$, $V_{gs} = 5 \text{ V}$ |
| Rdson | Saturation Resistance | | 0.85 | | Ohm | $V_{gs} = 20 \text{ V}$, $I_{ds} = 2.50 \text{ A}$ |
| Idsat | Saturation Current | | 7.00 | | Amp | $V_{gs} = 20 \text{ V}$, $V_{ds} = 10 \text{ V}$ |
| Ciss | Common Source Input Capacitance | | 50.0 | | pF | $V_{ds} = 28.0 \text{ V}$, $V_{gs} = 0 \text{ V}$, $F = 1 \text{ MHz}$ |
| Crss | Common Source Feedback Capacitance | | 3.0 | | pF | $V_{ds} = 28.0 \text{ V}$, $V_{gs} = 0 \text{ V}$, $F = 1 \text{ MHz}$ |
| Coss | Common Source Output Capacitance | | 32.0 | | pF | $V_{ds} = 28.0 \text{ V}$, $V_{gs} = 0 \text{ V}$, $F = 1 \text{ MHz}$ |

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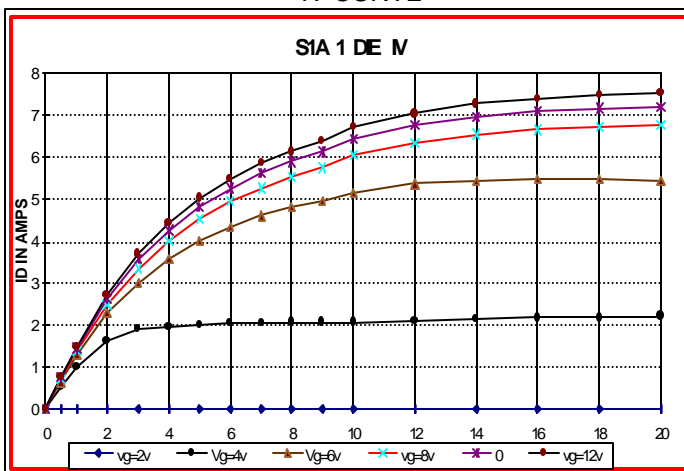
POUT VS PIN GRAPH



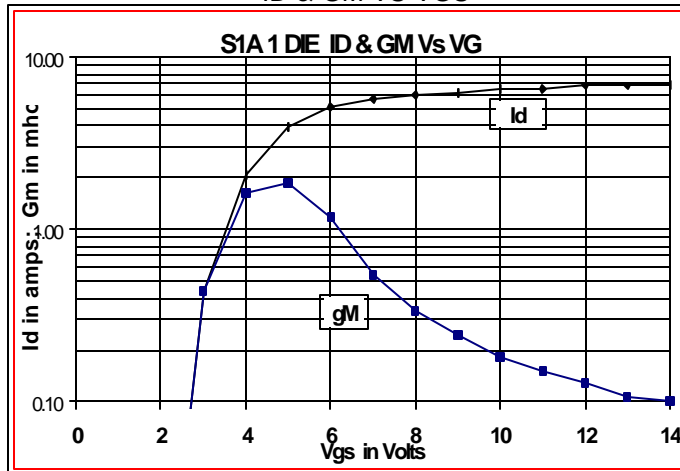
CAPACITANCE VS VOLTAGE



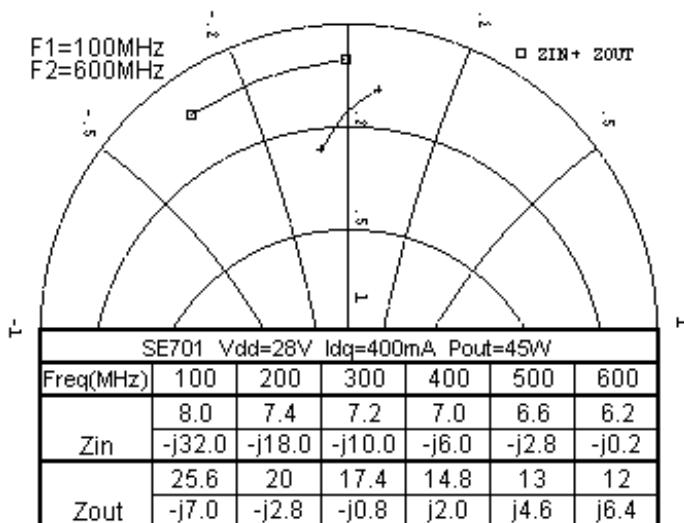
IV CURVE



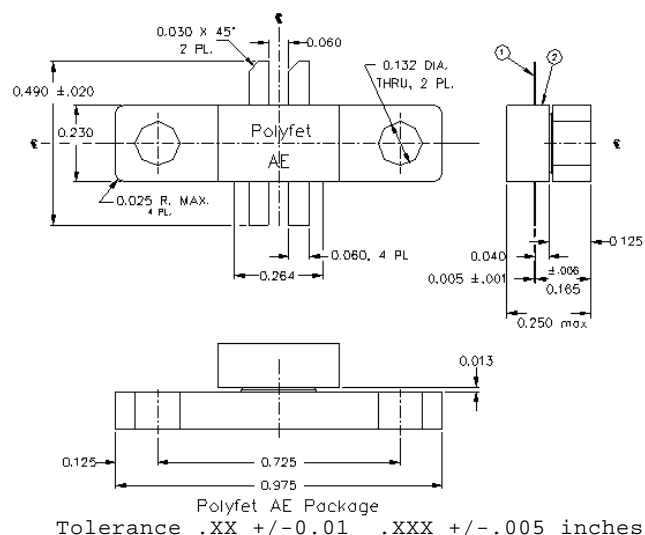
ID & GM VS VGS



Zin Zout



PACKAGE DIMENSIONS IN INCHES



POLYFET RF DEVICES

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