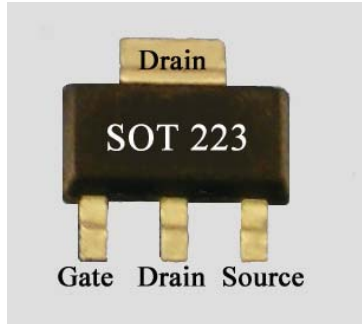




General Description

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

1.0 Watts Single Ended

Package Style SOT 223

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 |
|--------------------------|-------------------------------------|------------------------------|---------------------|------------------|-----------------------|-------------------------|------------------------|
| 2 Watts | 26.00 °C/W | 200 °C | -65 °C to 150 °C | 0.8 A | 50 V | 50 V | + 20 V - 0 V |

RF CHARACTERISTICS (1.0 WATTS OUTPUT)

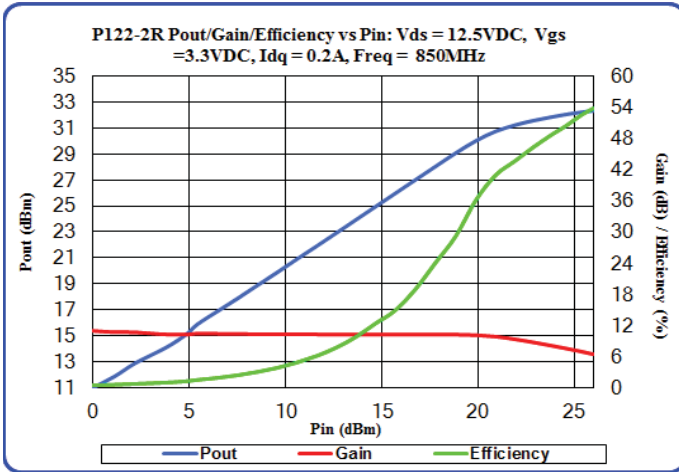
| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|--------|--------------------------|-----|-----|------|----------|-----------------------------------------|
| Gps | Common Source Power Gain | 9 | | | dB | Idq = 0.20 A, Vds = 12.5 V, F = 850 MHz |
| η | Drain Efficiency | | 40 | | % | Idq = 0.20 A, Vds = 12.5 V, F = 850 MHz |
| VSWR | Load Mismatch Tolerance | | | 20:1 | Relative | Idq = 0.20 A, Vds = 12.5 V, F = 850 MHz |

ELECTRICAL CHARACTERISTICS (EACH SIDE)

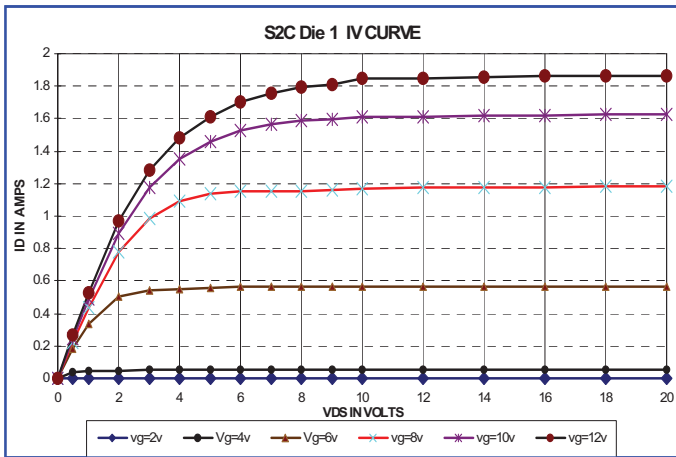
| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|--------|------------------------------------|-----|------|-----|-------|--------------------------------|
| Bvdss | Drain Breakdown Voltage | 40 | | | V | Ids = 10.00 mA, Vgs = 0V |
| Idss | Zero Bias Drain Current | | | 0.2 | mA | Vds = 12.5 V, Vgs = 0V |
| Igss | Gate Leakage Current | | | 1 | uA | Vds = 0V Vgs = 10V |
| Vgs | Gate Bias for Drain Current | 2 | | 5 | V | Ids = 0.02 A, Vgs = Vds |
| gM | Forward Transconductance | | 0.3 | | Mho | Vds = 10V, Vgs = 5V |
| Rdson | Saturation Resistance | | 2.00 | | Ohm | Vgs = 20 V, Ids = 1.60 A |
| Idsat | Saturation Current | | 2.30 | | Amp | Vgs = 20 V, Vds = 10V |
| Ciss | Common Source Input Capacitance | | 8.0 | | pF | Vds = 12.5 Vgs = 0V, F = 1 MHz |
| Crss | Common Source Feedback Capacitance | | 0.5 | | pF | Vds = 12.5 Vgs = 0V, F = 1 MHz |
| Coss | Common Source Output Capacitance | | 10.0 | | pF | Vds = 12.5 Vgs = 0V, F = 1 MHz |

P122-2R

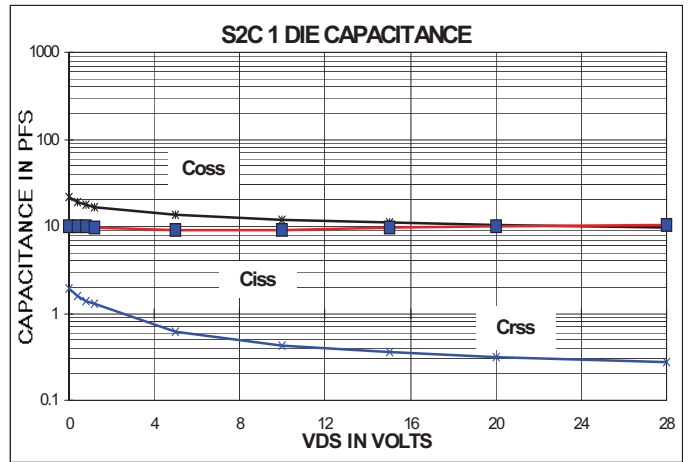
POUT VS PIN GRAPH



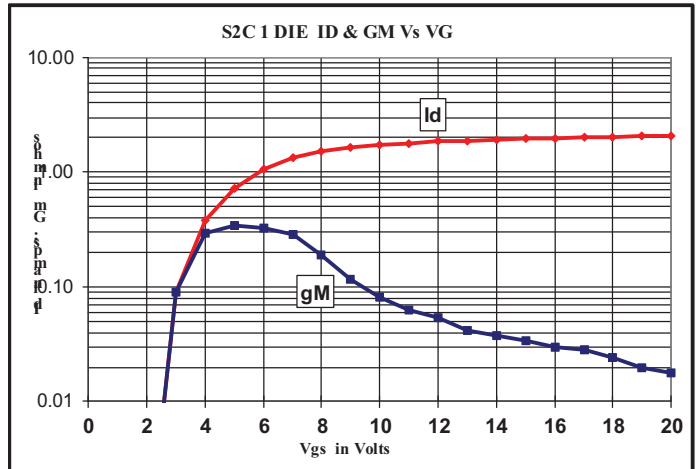
IV CURVE



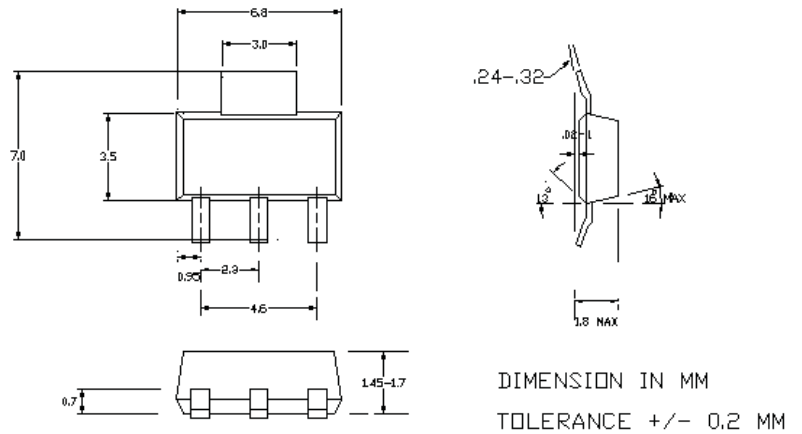
CAPACITANCE VS VOLTAGE



ID & GM VS VGS



PACKAGE DIMENSIONS IN INCHES



SOT-223

POLYFET RF DEVICES

REVISION 03/02/2023

1110 Avenida Acaso, Camarillo, Ca 93012 Tel:(805) 484-4210 FAX: (805) 484-3393 EMAIL:contact@polyfet.com URL:www.polyfet.com