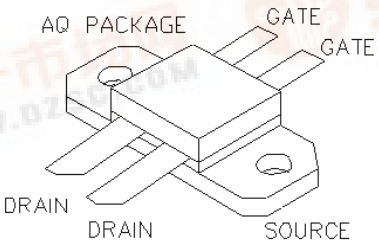
polyfet rf devices

F2003

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 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

5 Watts Push - Pull

Package Style AQ

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
30 Watts	6 °C/W	200 °C	-65 °C to 150 °C	1.6 A	70 V	70 V	30V

RF CHARACTERISTICS (5WATTS OUTPUT)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Gps	Common Source Power Gai	10			dB	Idq = 0.4 A, Vds = 28.0 V, F = 1000 MHz
η	Drain Efficiency		45		%	Idq = 0.4 A, Vds = 28.0 V, F = 1000 MHz
VSWR	Load Mismatch Toleranc			20:1	Relative	Idq = 0.4 A, Vds = 28.0 V, F = 1000 MHz

ELECTRICAL CHARACTERISTICS (EACH SIDE)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Bvdss	Drain Breakdown Voltag	65			V	Ids = 0.01 A, Vgs = 0V
Idss	Zero Bias Drain Curren			0.2	mA	Vds = 28.0 V, Vgs = 0V
Igss	Gate Leakage Curren			1	uA	Vds = 0 V, Vgs = 30V
Vgs	Gate Bias for Drain Curren	1		7	V	Ids = 0.02 A, Vgs = Vds
gM	Forward Transconductanc		0.2		Mho	Vds = 10V, Vgs = 5V
Rdson	Saturation Resistanc		3.5		Ohm	Vgs = 20V, Ids = 1A
Idsat	Saturation Curren		1.2		Amp	Vgs = 20V, Vds = 10V
Ciss	Common Source Input Capacitanc		9		pF	Vds = 28.0 V, Vgs = 0V, F = 1 MHz
Crss	Common Source Feedback Capacitanc		1		pF	Vds = 28.0 V, Vgs = 0V, F = 1 MHz
Coss	Common Source Output Capacitanc		6		pF	Vds = 28.0 V, Vgs = 0V, F = 1 MHz

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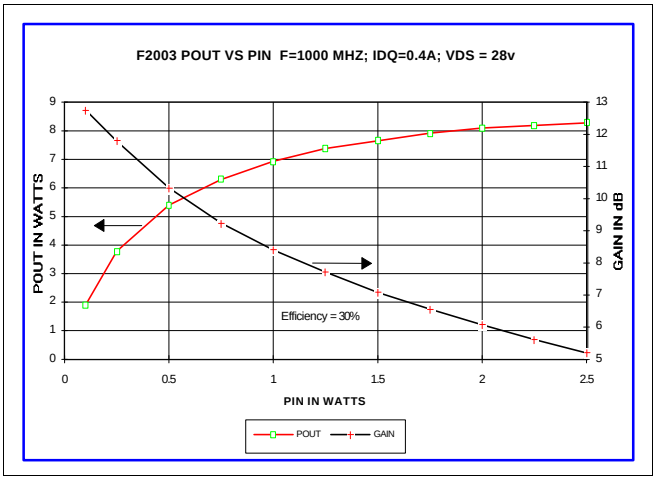
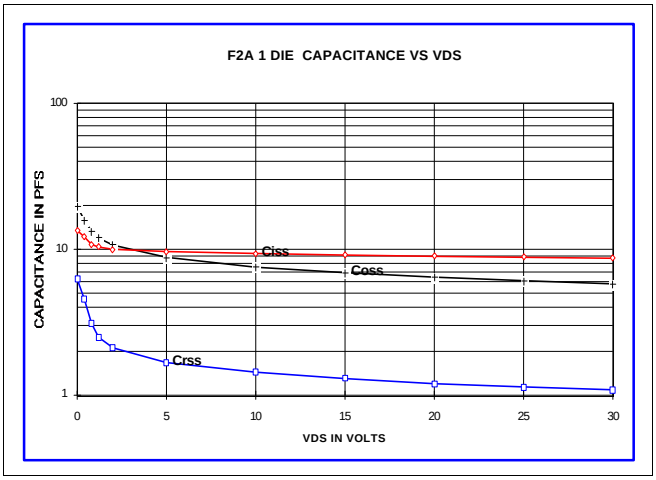
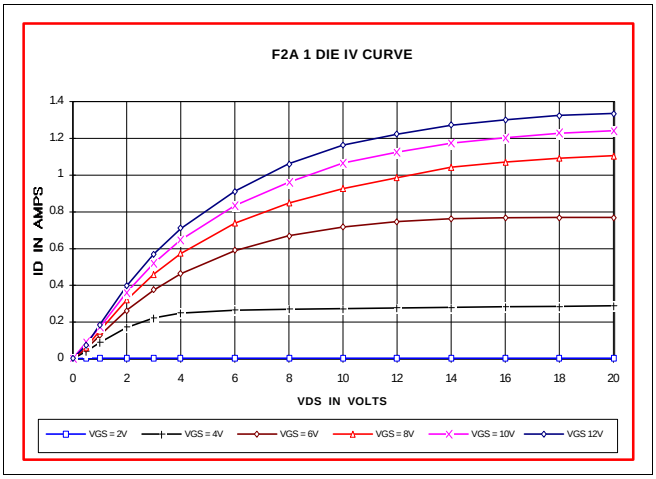
POUT VS PIN GRAPH



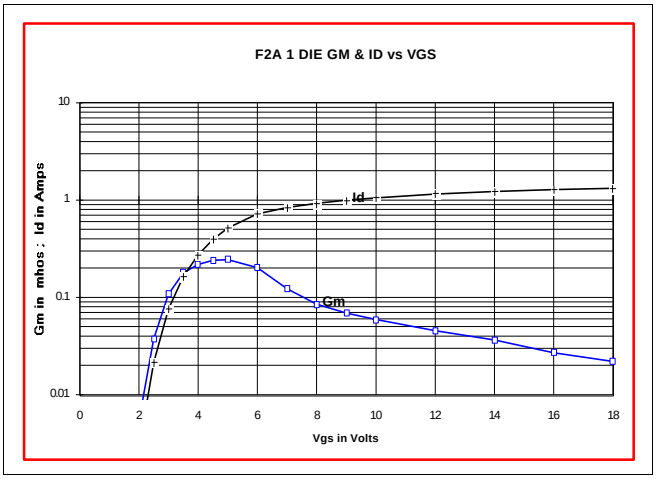
CAPACITANCE VS VOLTAGE



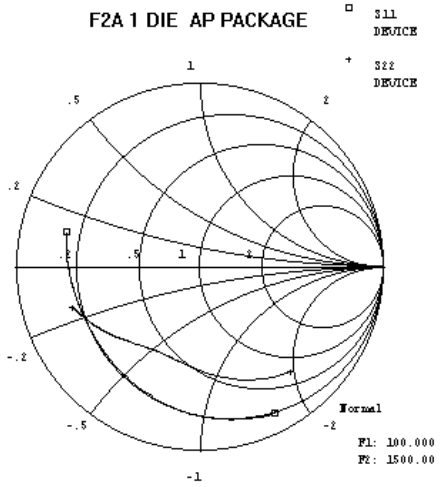
IV CURVE



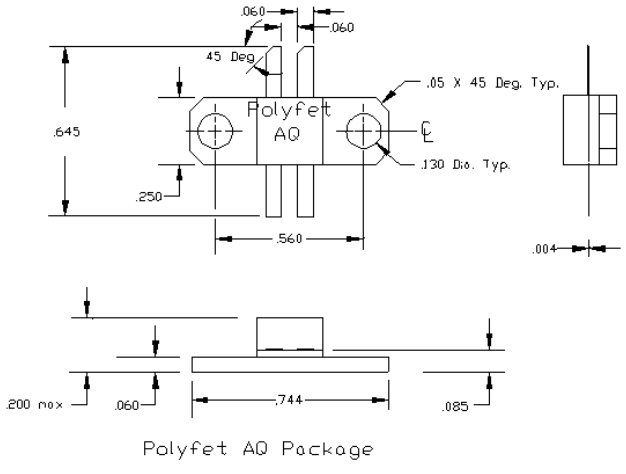
ID AND GM VS VGS



S11 AND S22 SMITH CHART



PACKAGE DIMENSIONS IN INCHES



Polyfet AQ Package

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