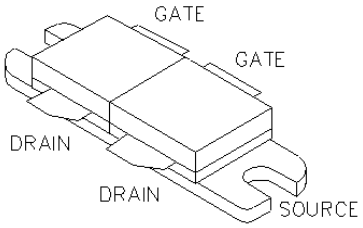
polyfet rf devices

F3002

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

300 Watts Gemini

Package Style AR

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
500 Watts	0.35 °C/W	200 °C	-65 °C to 150 °C	36 A	70 V	70 V	30V

RF CHARACTERISTICS (300 WATTS OUTPUT)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Gps	Common Source Power Gain	12			dB	Idq = 4 A, Vds = 28.0 V, F = 100 MHz
η	Drain Efficiency		60		%	Idq = 4 A, Vds = 28.0 V, F = 100 MHz
VSWR	Load Mismatch Tolerance			20:1	Relative	Idq = 4 A, Vds = 28.0 V, F = 100 MHz

ELECTRICAL CHARACTERISTICS (EACH SIDE)

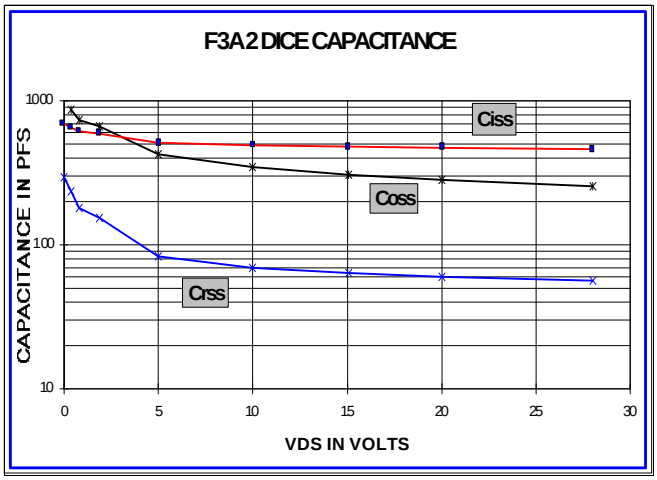
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Bvdss	Drain Breakdown Voltage	65			V	Ids = 0.2 A, Vgs = 0V
Idss	Zero Bias Drain Current			12	mA	Vds = 28.0 V, Vgs = 0V
Igss	Gate Leakage Current			1	uA	Vds = 0 V, Vgs = 30V
Vgs	Gate Bias for Drain Current	1		7	V	Ids = 0.6 A, Vgs = Vds
gM	Forward Transconductance		7		Mho	Vds = 10V, Vgs = 5V
Rdson	Saturation Resistance		0.1		Ohm	Vgs = 20V, Ids = 20A
Idsat	Saturation Current		50		Amp	Vgs = 20V, Vds = 10V
Ciss	Common Source Input Capacitance		400		pF	Vds = 28.0 V, Vgs = 0V, F = 1 MHz
Crss	Common Source Feedback Capacitance		40		pF	Vds = 28.0 V, Vgs = 0V, F = 1 MHz
Coss	Common Source Output Capacitance		240		pF	Vds = 28.0 V, Vgs = 0V, F = 1 MHz

1110 Avenida Acaso, Camarillo, CA 93012 TEL:(805) 484-4210 FAX:(805) 484-3393 EMAIL:Sales@polyfet.com URL:www.polyfet.com

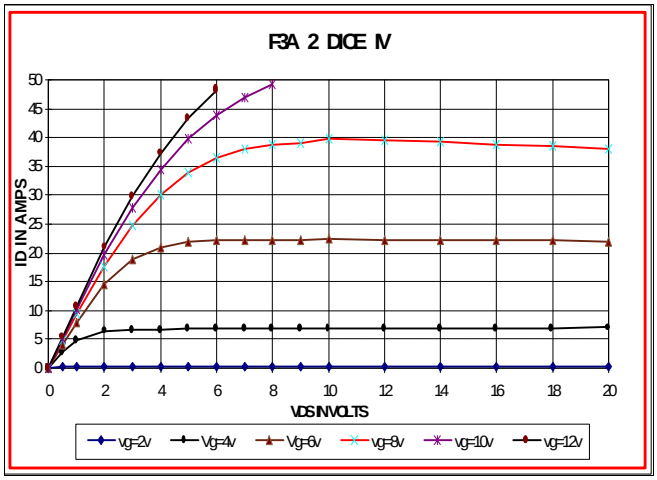
F3002

POUT VS PIN GRAPH

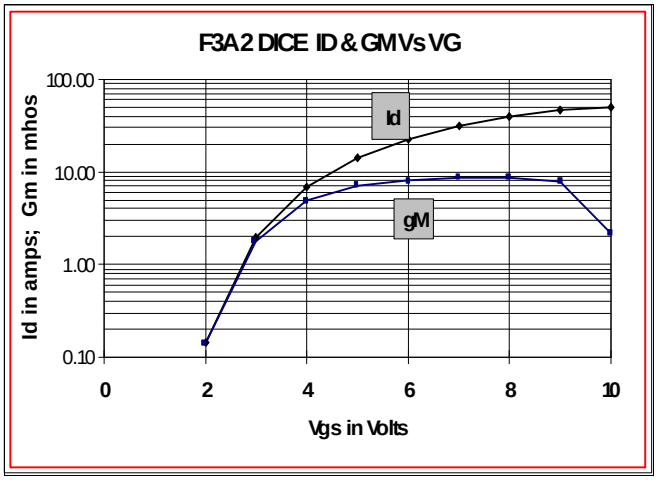
CAPACITANCE VS VOLTAGE



IV CURVE

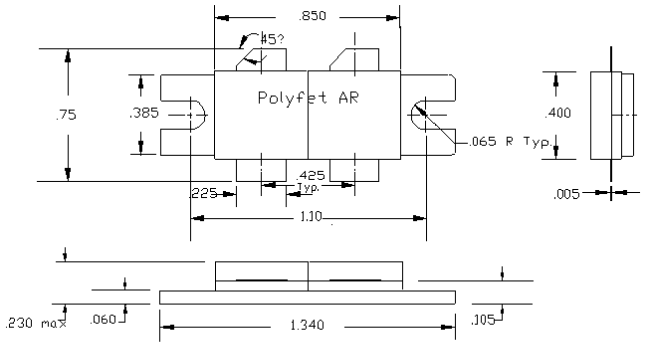


ID AND GM VS VGS



S11 AND S22 SMITH CHART

PACKAGE DIMENSIONS IN INCHES



Polyfet AR Package

Tolerance 0.XX +/- 0.01 0.XXX +/- 0.005 inches

POLYFET RF DEVICES

REVISION 1/12/98

1110 Avenida Acaso, Camarillo, CA 93012 TEL:(805) 484-4210 FAX:(805) 484-3393 EMAIL:Sales@polyfet.com URL:w w w .polyfet.com