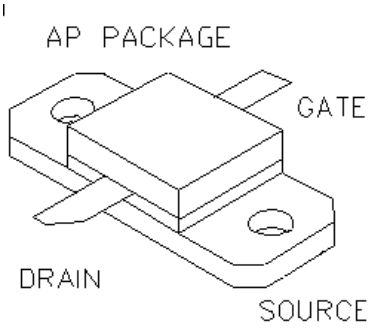
polyfet rf devices

F2202

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

4 Watts Single Ended

Package Style AP

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	50 V	50 V	30V

RF CHARACTERISTICS (4WATTS OUTPUT)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Gps	Common Source Power Gai	10			dB	Idq = 0.4 A, Vds = 12.5 V, F = 850 MHz
η	Drain Efficiency		50		%	Idq = 0.4 A, Vds = 12.5 V, F = 850 MHz
VSWR	Load Mismatch Toleranc			20:1	Relative	Idq = 0.4 A, Vds = 12.5 V, F = 850 MHz

ELECTRICAL CHARACTERISTICS (EACH SIDE)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Bvdss	Drain Breakdown Voltag	40			V	Ids = 0.02 A, Vgs = 0V
Idss	Zero Bias Drain Curren			0.4	mA	Vds = 12.5 V, Vgs = 0V
Igss	Gate Leakage Curren			1	uA	Vds = 0 V, Vgs = 30V
Vgs	Gate Bias for Drain Curren	1		7	V	Ids = 0.04 A, Vgs = Vds
gM	Forward Transconductanc		0.4		Mho	Vds = 10V, Vgs = 5V
Rdson	Saturation Resistanc		1.2		Ohm	Vgs = 20V, Ids = 3.2 A
Idsat	Saturation Curren		4.6		Amp	Vgs = 20V, Vds = 10V
Ciss	Common Source Input Capacitanc		15		pF	Vds = 12.5 V, Vgs = 0V, F = 1 MHz
Crss	Common Source Feedback Capacitanc		2.4		pF	Vds = 12.5 V, Vgs = 0V, F = 1 MHz
Coss	Common Source Output Capacitanc		16		pF	Vds = 12.5 V, Vgs = 0V, F = 1 MHz

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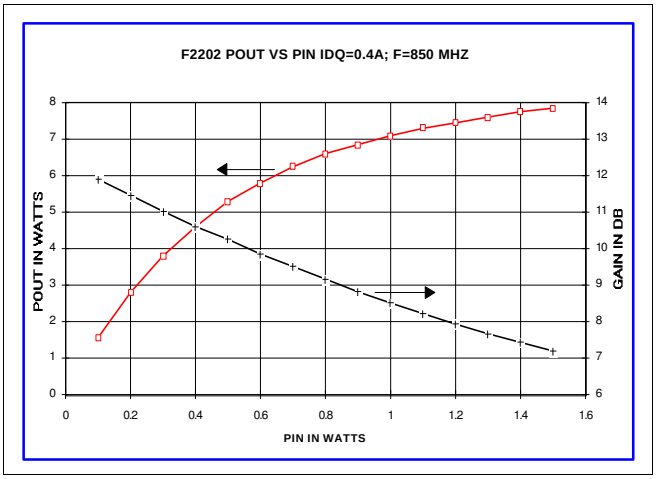
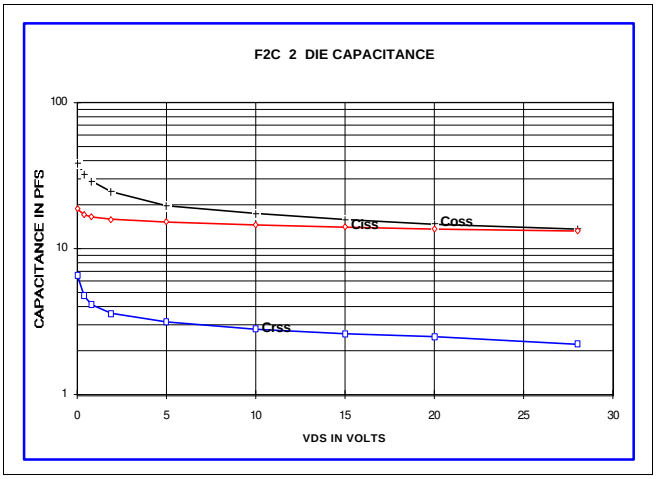
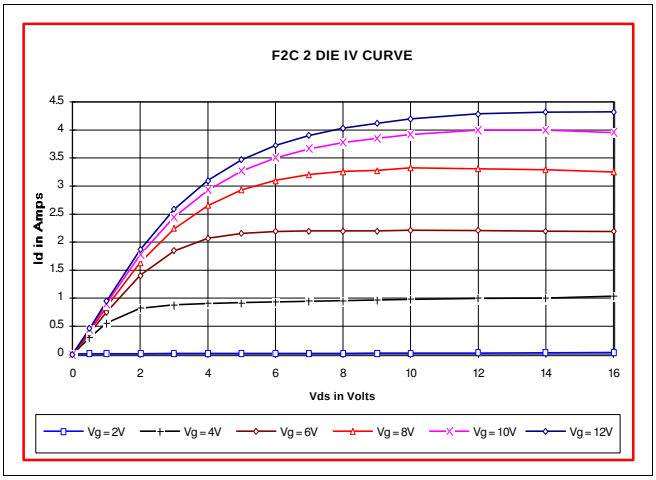
POUT VS PIN GRAPH



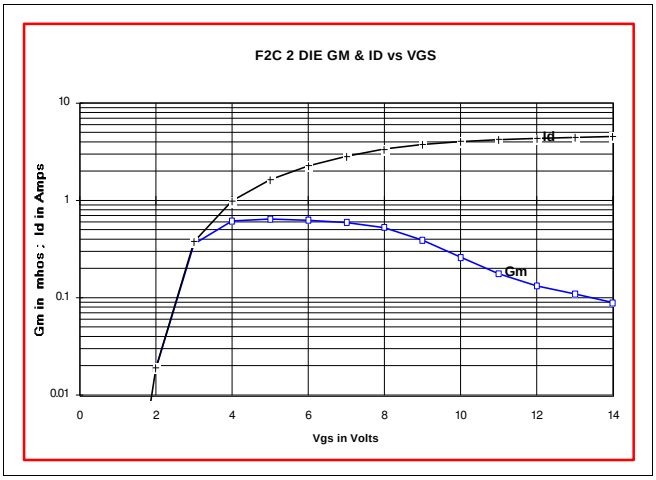
CAPACITANCE VS VOLTAGE



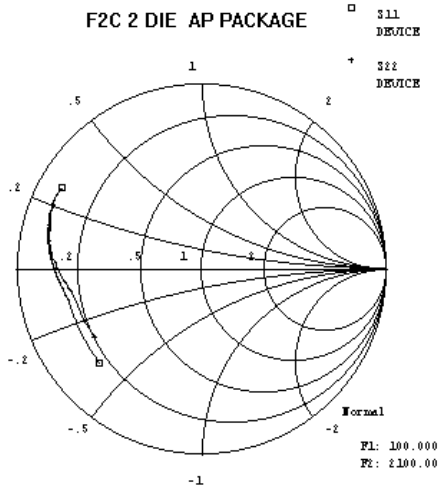
IV CURVE



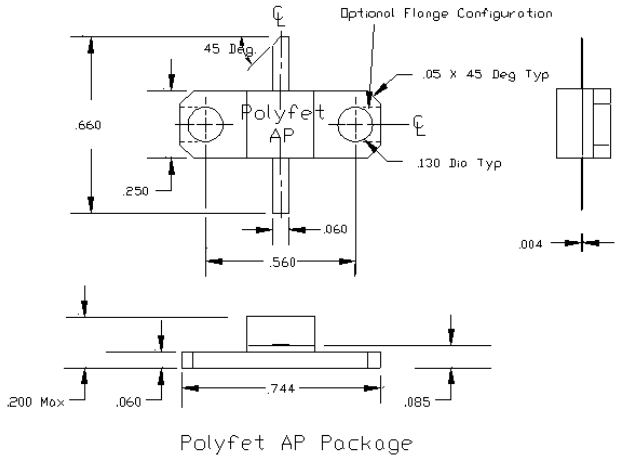
ID AND GM VS VGS



S11 AND S22 SMITH CHART



PACKAGE DIMENSIONS IN INCHES



Polyfet AP Package

POLYFET RF DEVICES

REVISION 8/1/97

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