



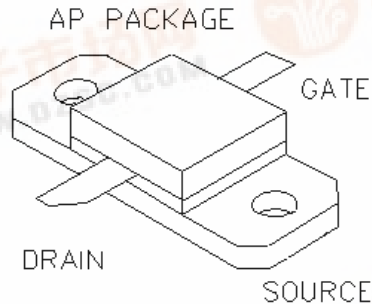
polyfet rf devices

F1402

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**

40Watts 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
80 Watts	2.1 °C/W	200 °C	-65 °C to 150 °C	4 A	150 V	150 V	30V

RF CHARACTERISTICS (40 WATTS OUTPUT)

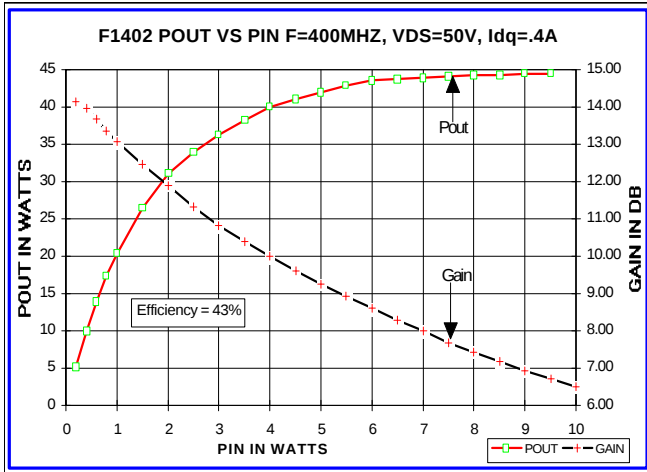
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Gps	Common Source Power Gain	10			dB	$I_{dq} = 0.2 \text{ A}$, $V_{ds} = 50.0 \text{ V}$, $F = 400 \text{ MHz}$
η	Drain Efficiency		75		%	$I_{dq} = 0.2 \text{ A}$, $V_{ds} = 50.0 \text{ V}$, $F = 400 \text{ MHz}$
VSWR	Load Mismatch Tolerance			20:1	Relative	$I_{dq} = 0.2 \text{ A}$, $V_{ds} = 50.0 \text{ V}$, $F = 400 \text{ MHz}$

ELECTRICAL CHARACTERISTICS (EACH SIDE)

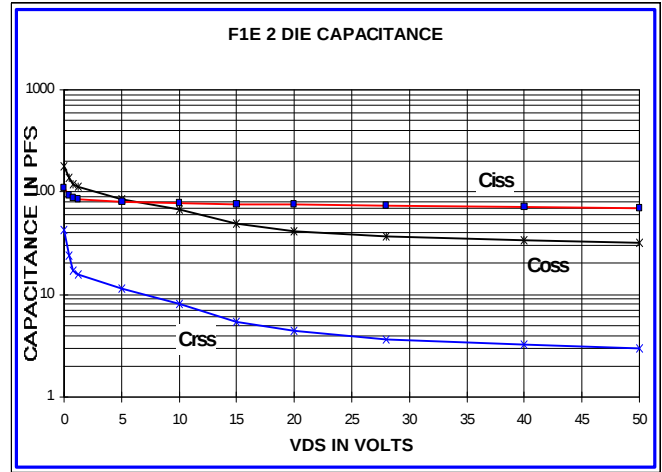
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Bvdss	Drain Breakdown Voltage	125			V	$I_{ds} = 0.1 \text{ A}$, $V_{gs} = 0 \text{ V}$
I_{dss}	Zero Bias Drain Current			4	mA	$V_{ds} = 50.0 \text{ V}$, $V_{gs} = 0 \text{ V}$
I_{gss}	Gate Leakage Current			1	uA	$V_{ds} = 0 \text{ V}$, $V_{gs} = 30 \text{ V}$
V_{gs}	Gate Bias for Drain Current	1		7	V	$I_{ds} = 0.2 \text{ A}$, $V_{gs} = V_{ds}$
g_m	Forward Transconductance		1.6		Mho	$V_{ds} = 10 \text{ V}$, $V_{gs} = 5 \text{ V}$
R_{dson}	Saturation Resistance		0.7		Ohm	$V_{gs} = 20 \text{ V}$, $I_{ds} = 4 \text{ A}$
I_{dsat}	Saturation Current		9.6		Amp	$V_{gs} = 20 \text{ V}$, $V_{ds} = 10 \text{ V}$
C_{iss}	Common Source Input Capacitance		90		pF	$V_{ds} = 50.0 \text{ V}$, $V_{as} = 0 \text{ V}$, $F = 1 \text{ MHz}$
C_{rss}	Common Source Feedback Capacitance		4.4		pF	$V_{ds} = 50.0 \text{ V}$, $V_{as} = 0 \text{ V}$, $F = 1 \text{ MHz}$
C_{oss}	Common Source Output Capacitance		40		pF	$V_{ds} = 50.0 \text{ V}$, $V_{as} = 0 \text{ V}$, $F = 1 \text{ MHz}$

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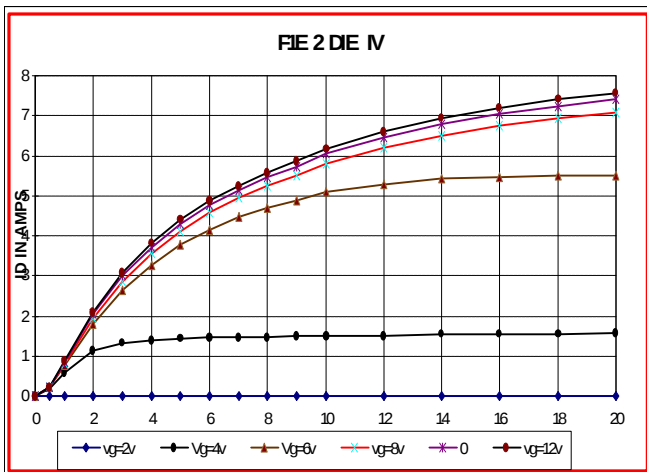
POUT VS PIN GRAPH



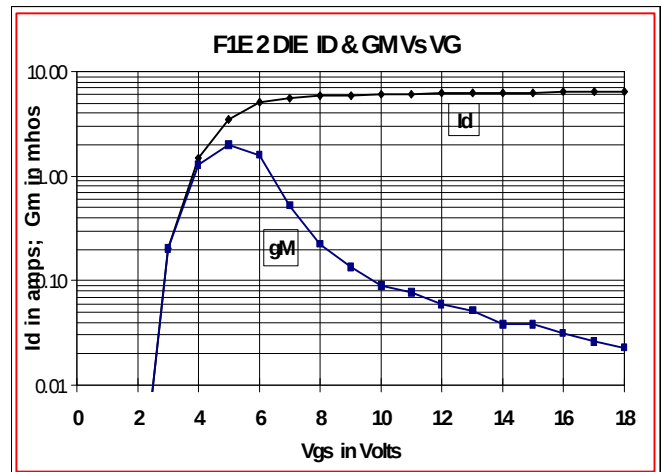
CAPACITANCE VS VOLTAGE



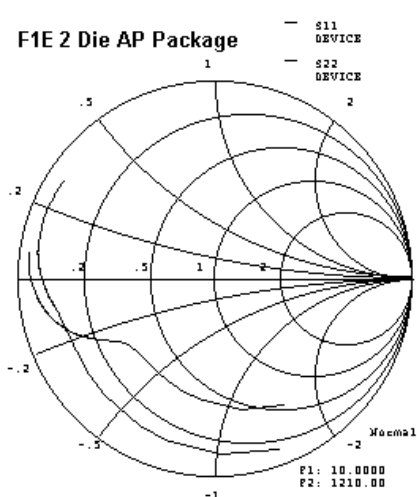
IV CURVE



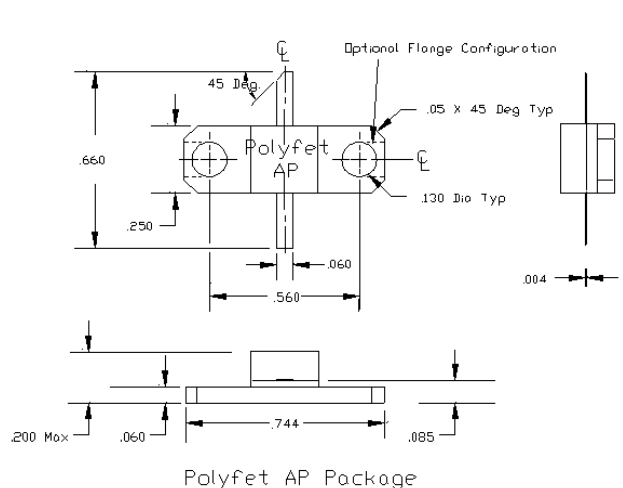
ID AND GM VS VGS



S11 AND S22 SMITH CHART



PACKAGE DIMENSIONS IN INCHES



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