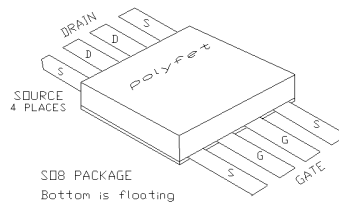




General Description

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"TM process features low feedback and output capacitances resulting in high F_t transistors with high input impedance and high efficiency.



PATENTED GOLD METALLIZED
SILICON GATE ENHANCEMENT MODE
RF POWER VDMOS TRANSISTOR

4.0 Watts Single Ended

Package Style SO8

HIGH EFFICIENCY, LINEAR
HIGH GAIN, LOW NOISE

ABSOLUTE MAXIMUM RATINGS ($T = 25^{\circ}\text{C}$)

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
15 Watts	10.00 $^{\circ}\text{C/W}$	200 $^{\circ}\text{C}$	-65 $^{\circ}\text{C}$ to 150 $^{\circ}\text{C}$	1.6 A	50V	50V	30 V

RF CHARACTERISTICS (4.0 WATTS OUTPUT)

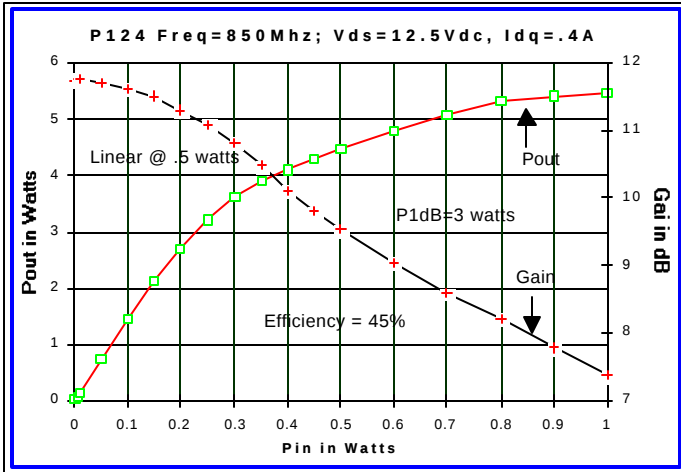
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Gps	Common Source Power Gain	10			dB	$I_{dq} = 0.40 \text{ A}$, $V_{ds} = 12.5 \text{ V}$, $F = 850 \text{ MHz}$
η	Drain Efficiency		50		%	$I_{dq} = 0.40 \text{ A}$, $V_{ds} = 12.5 \text{ V}$, $F = 850 \text{ MHz}$
VSWR	Load Mismatch Tolerance			20:1	Relative	$I_{dq} = 0.40 \text{ A}$, $V_{ds} = 12.5 \text{ V}$, $F = 850 \text{ MHz}$

ELECTRICAL CHARACTERISTICS (EACH SIDE)

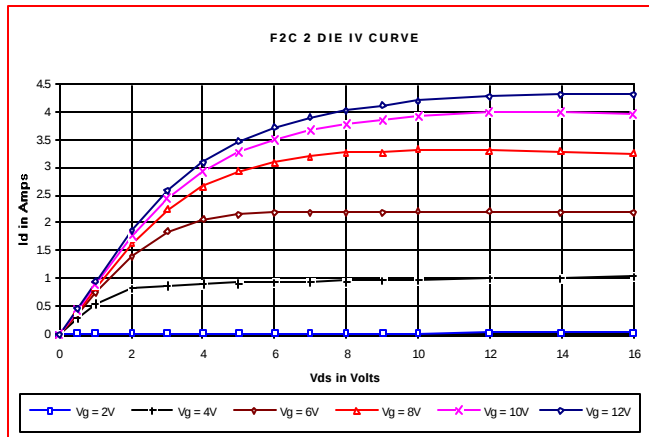
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Bvdss	Drain Breakdown Voltage	40			V	$I_{ds} = 20.00 \text{ mA}$, $V_{gs} = 0\text{V}$
Idss	Zero Bias Drain Current			0.4	mA	$V_{ds} = 12.5 \text{ V}$, $V_{gs} = 0\text{V}$
Igss	Gate Leakage Current			1	μA	$V_{ds} = 0\text{V}$ $V_{gs} = 30\text{V}$
Vgs	Gate Bias for Drain Current	1		7	V	$I_{ds} = 0.04 \text{ A}$, $V_{gs} = V_{ds}$
gM	Forward Transconductance		0.4		Mho	$V_{ds} = 10\text{V}$, $V_{gs} = 5\text{V}$
Rdson	Saturation Resistance		1.20		Ohm	$V_{gs} = 20\text{V}$, $I_{ds} = 3.20 \text{ A}$
Idsat	Saturation Current		4.60		Amp	$V_{gs} = 20\text{V}$, $V_{ds} = 10\text{V}$
Ciss	Common Source Input Capacitance		15.0		pF	$V_{ds} = 12.5 \text{ V}$ $V_{gs} = 0\text{V}$, $F = 1 \text{ MHz}$
Crss	Common Source Feedback Capacitance		2.4		pF	$V_{ds} = 12.5 \text{ V}$ $V_{gs} = 0\text{V}$, $F = 1 \text{ MHz}$
Coss	Common Source Output Capacitance		16.0		pF	$V_{ds} = 12.5 \text{ V}$ $V_{gs} = 0\text{V}$, $F = 1 \text{ MHz}$

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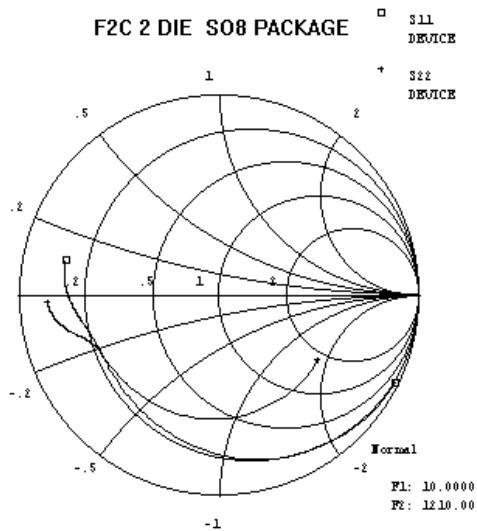
POUT VS PIN GRAPH



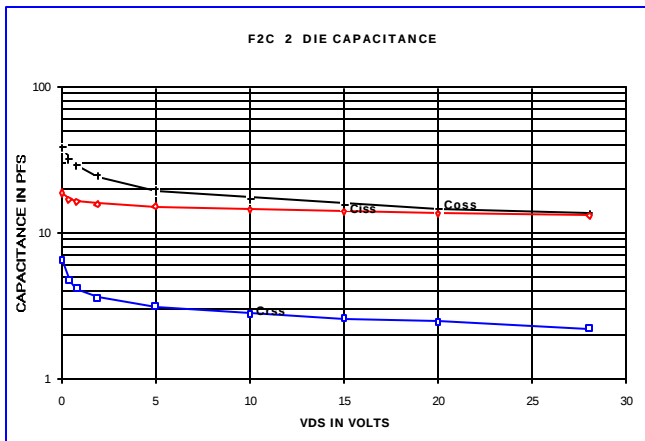
IV CURVE



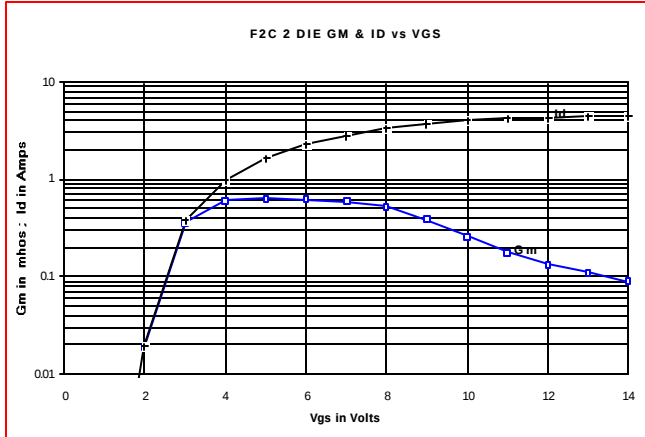
S11 & S22 SMITH CHART



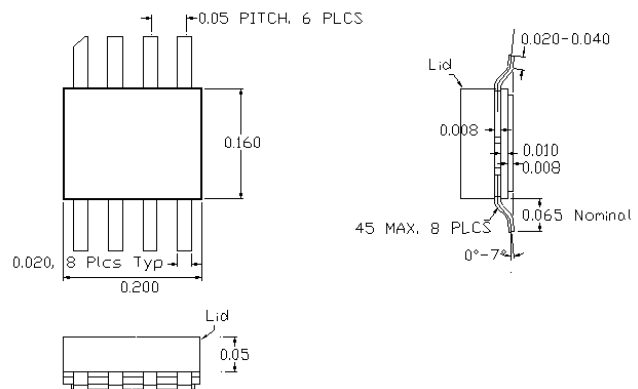
CAPACITANCE VS VOLTAGE



ID & GM VS VGS



PACKAGE DIMENSIONS IN INCHES



S08 / S08 -1

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

POLYFET RF DEVICES

REVISION 11/27/2000

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