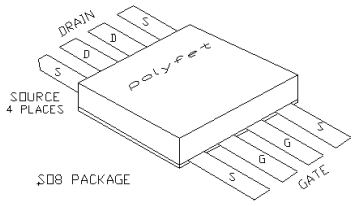
polyfet rf devices

P123

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

2 Watts Single Ended

Package Style SO8

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
10 Watts	15 °C/W	200 °C	-65 °C to 150 °C	0.8 A	50 V	50 V	30V

RF CHARACTERISTICS (2WATTS OUTPUT)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Gps	Common Source Power Gai	10			dB	Idq = 0.2 A, Vds = 12.5 V, F = 850 MHz
η	Drain Efficiency		50		%	Idq = 0.2 A, Vds = 12.5 V, F = 850 MHz
VSWR	Load Mismatch Toleranc			20:1	Relative	Idq = 0.2 A, Vds = 12.5 V, F = 850 MHz

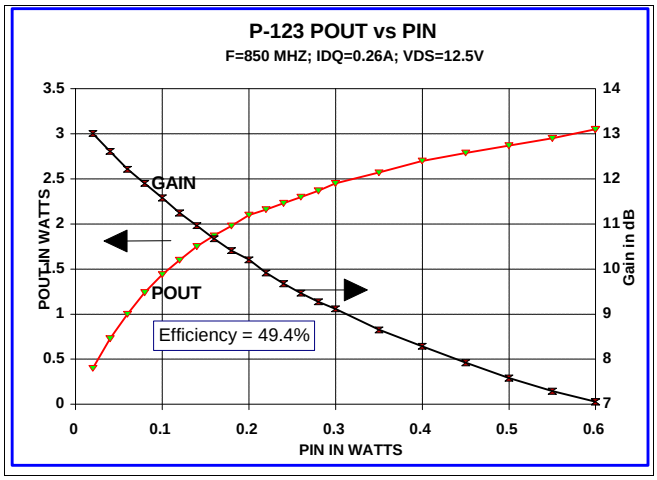
ELECTRICAL CHARACTERISTICS (EACH SIDE)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Bvdss	Drain Breakdown Voltag	40			V	Ids = 0.01 A, Vgs = 0V
Idss	Zero Bias Drain Curren			0.2	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 = 0.02 A, Vgs = Vds
gM	Forward Transconductanc		0.2		Mho	Vds = 10V, Vgs = 5V
Rdson	Saturation Resistanc		2		Ohm	Vgs = 20V, Ids = 1.6 A
Idsat	Saturation Curren		2.3		Amp	Vgs = 20V, Vds = 10V
Ciss	Common Source Input Capacitanc		7.5		pF	Vds = 12.5 V, Vgs = 0V, F = 1 MHz
Crss	Common Source Feedback Capacitanc		1.2		pF	Vds = 12.5 V, Vgs = 0V, F = 1 MHz
Coss	Common Source Output Capacitanc		8		pF	Vds = 12.5 V, Vgs = 0V, F = 1 MHz

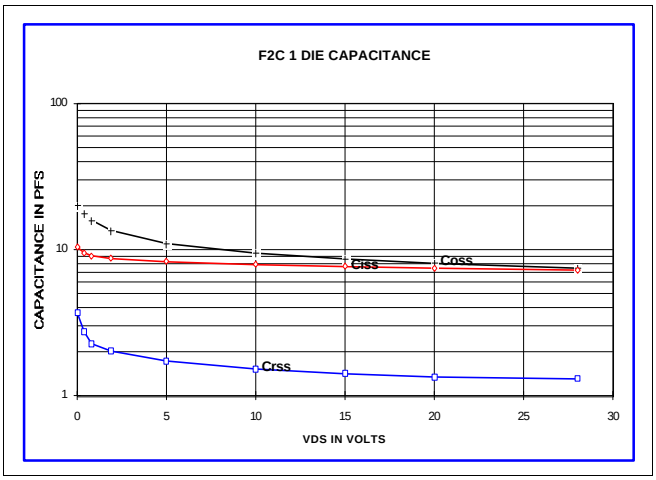
1110 Avenida Acaso, Camarillo, CA 93012 TEL:(805) 484-4210 FAX:(805) 484-3393 EMAIL:Sales@polyfet.com URL:www.polyfet.com

P123

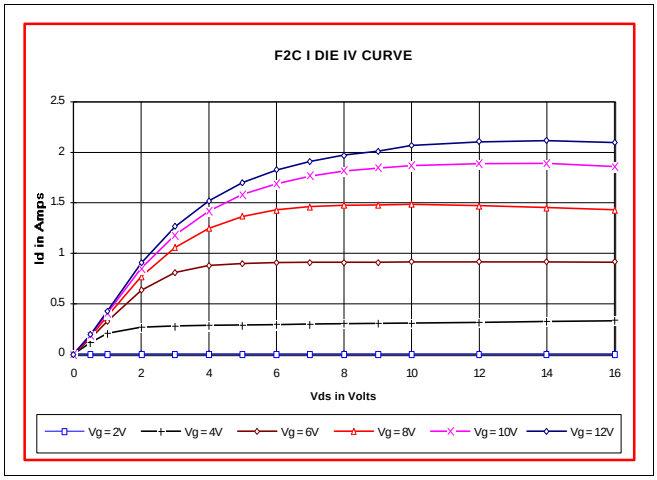
POUT VS PIN GRAPH



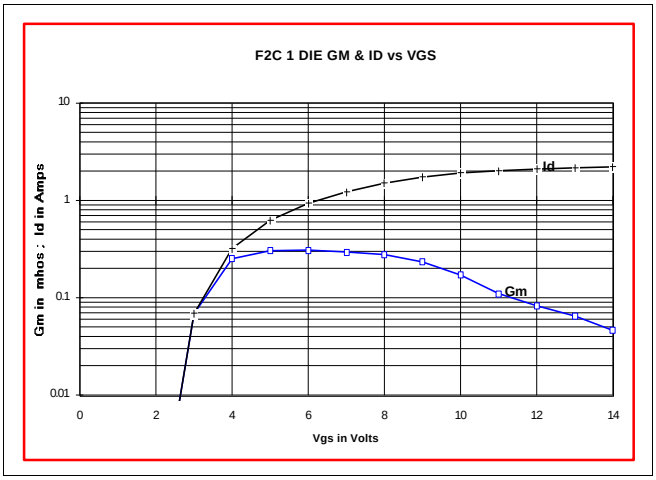
CAPACITANCE VS VOLTAGE



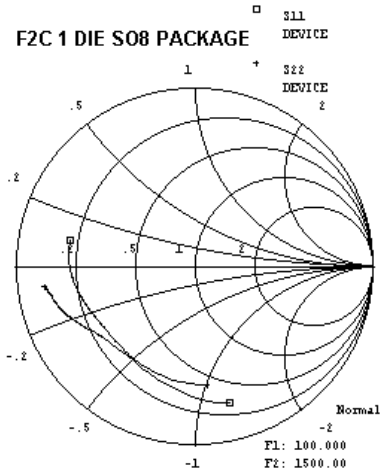
IV CURVE



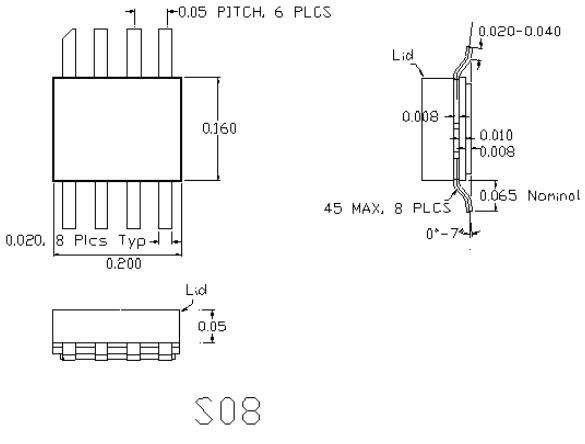
ID AND GM VS VGS



S11 AND S22 SMITH CHART



PACKAGE DIMENSIONS IN INCHES



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