



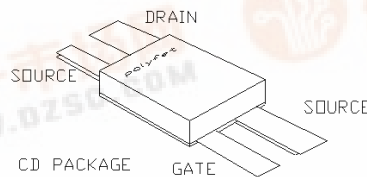
polyfet rf devices

F2202S

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 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**

4Watts Single Ended

Package Style CD

**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	8 °C/W	200 °C	-65 °C to 150 °C	1.6 A	50 V	50V	30V

RF CHARACTERISTICS (4WATTS OUTPUT)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Gps	Common Source Power Gain	10			dB	$I_{dq} = 0.4 \text{ A}$, $V_{ds} = 12.5 \text{ V}$, $F = 850 \text{ MHz}$
η	Drain Efficiency		50		%	$I_{dq} = 0.4 \text{ A}$, $V_{ds} = 12.5 \text{ V}$, $F = 850 \text{ MHz}$
VSWR	Load Mismatch Tolerance			20:1	Relative	$I_{dq} = 0.4 \text{ A}$, $V_{ds} = 12.5 \text{ V}$, $F = 850 \text{ MHz}$

ELECTRICAL CHARACTERISTICS (EACH SIDE)

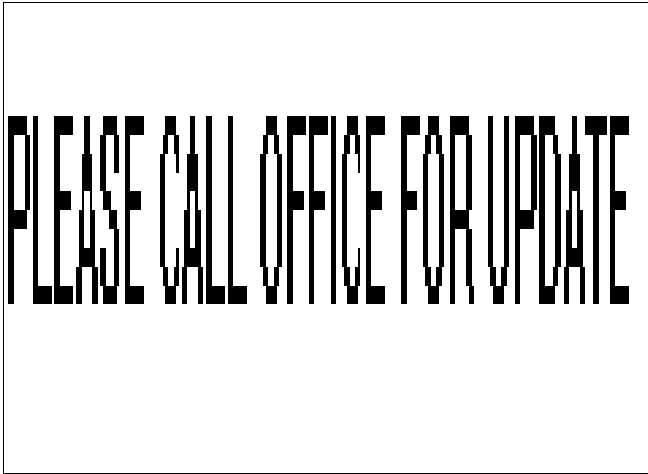
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Bvdss	Drain Breakdown Voltage	40			V	$I_{ds} = 0.02 \text{ A}$, $V_{gs} = 0 \text{ V}$
I_{dss}	Zero Bias Drain Current			0.4	mA	$V_{ds} = 12.5 \text{ V}$, $V_{gs} = 0 \text{ V}$
I_{gss}	Gate Leakage Current			1	uA	$V_{ds} = 0 \text{ V}$, $V_{gs} = 30 \text{ V}$
V_{gs}	Gate Bias for Drain Current	1		7	V	$I_{ds} = 0.04 \text{ A}$, $V_{gs} = V_{ds}$
g_m	Forward Transconductance		0.4		Mho	$V_{ds} = 10 \text{ V}$, $V_{gs} = 5 \text{ V}$
R_{dson}	Saturation Resistance		1.2		Ohm	$V_{gs} = 20 \text{ V}$, $I_{ds} = 3.2 \text{ A}$
I_{dsat}	Saturation Current		4.6		Amp	$V_{gs} = 20 \text{ V}$, $V_{ds} = 10 \text{ V}$
C_{iss}	Common Source Input Capacitance		15		pF	$V_{ds} = 12.5 \text{ V}$, $V_{gs} = 0 \text{ V}$, $F = 1 \text{ MHz}$
C_{rss}	Common Source Feedback Capacitance		2.4		pF	$V_{ds} = 12.5 \text{ V}$, $V_{gs} = 0 \text{ V}$, $F = 1 \text{ MHz}$
C_{oss}	Common Source Output Capacitance		16		pF	$V_{ds} = 12.5 \text{ V}$, $V_{gs} = 0 \text{ V}$, $F = 1 \text{ MHz}$

POLYFET RF DEVICES

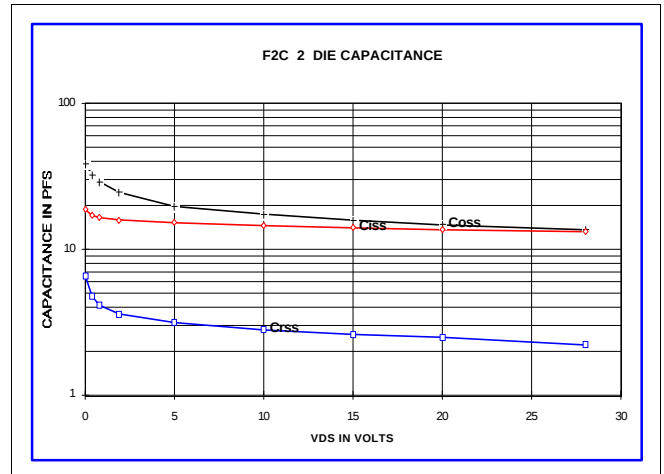
REVISION 8/1/97

F2202S

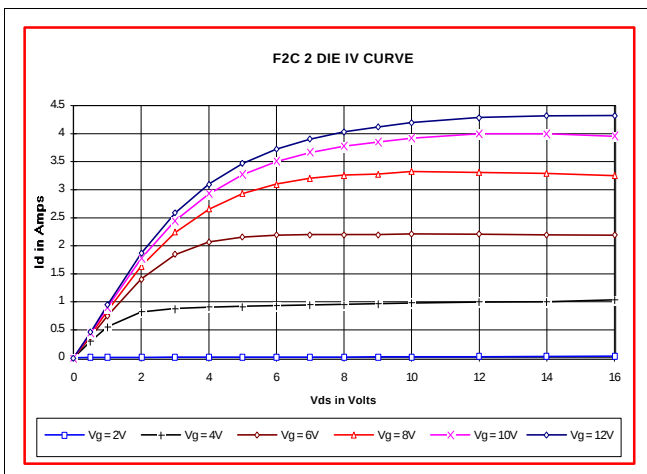
POUT VS PIN GRAPH



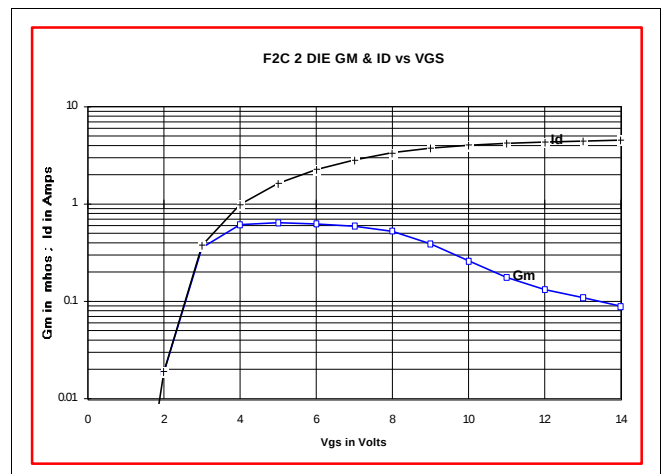
CAPACITANCE VS VOLTAGE



IV CURVE



ID AND GM VS VGS



S11 AND S22 SMITH CHART

PACKAGE DIMENSIONS IN INCHES

