



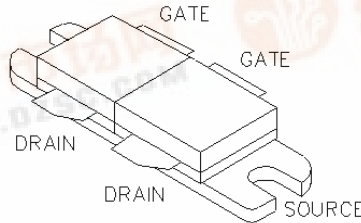
polyfet rf devices

F1120

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**

200Watts Gemini

Package Style AR

**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
440 Watts	0.4 °C/W	200 °C	-65 °C to 150 °C	20 A	70 V	70V	30V

RF CHARACTERISTICS (200 WATTS OUTPUT)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Gps	Common Source Power Gain	10			dB	$I_{dq} = 2 \text{ A}$, $V_{ds} = 28.0 \text{ V}$, $F = 175 \text{ MHz}$
η	Drain Efficiency		55		%	$I_{dq} = 2 \text{ A}$, $V_{ds} = 28.0 \text{ V}$, $F = 175 \text{ MHz}$
VSWR	Load Mismatch Tolerance			20:1	Relative	$I_{dq} = 2 \text{ A}$, $V_{ds} = 28.0 \text{ V}$, $F = 175 \text{ MHz}$

ELECTRICAL CHARACTERISTICS (EACH SIDE)

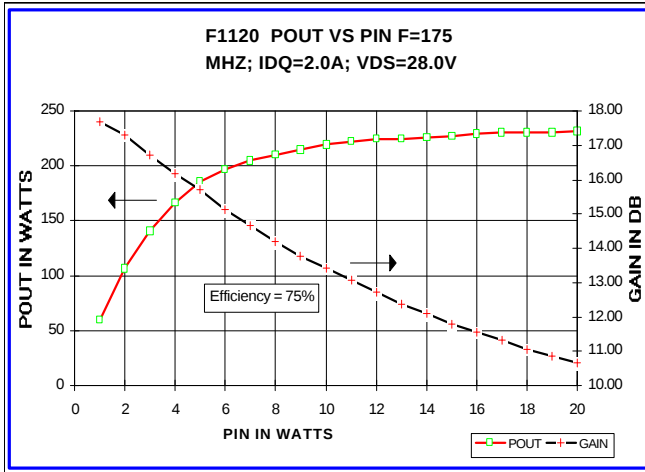
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Bvdss	Drain Breakdown Voltage	65			V	$I_{ds} = 0.25 \text{ A}$, $V_{gs} = 0 \text{ V}$
I_{dss}	Zero Bias Drain Current			5	mA	$V_{ds} = 28.0 \text{ V}$, $V_{gs} = 0 \text{ V}$
I_{gss}	Gate Leakage Current			1	uA	$V_{ds} = 0 \text{ V}$, $V_{gs} = 30 \text{ V}$
V_{gs}	Gate Bias for Drain Current	1		7	V	$I_{ds} = 0.5 \text{ A}$, $V_{gs} = V_{ds}$
g_m	Forward Transconductance		5		Mho	$V_{ds} = 10 \text{ V}$, $V_{gs} = 5 \text{ V}$
R_{dson}	Saturation Resistance		0.18		Ohm	$V_{gs} = 20 \text{ V}$, $I_{ds} = 20 \text{ A}$
I_{dsat}	Saturation Current		30		Amp	$V_{gs} = 20 \text{ V}$, $V_{ds} = 10 \text{ V}$
C_{iss}	Common Source Input Capacitance		200		pF	$V_{ds} = 28.0 \text{ V}$, $V_{as} = 0 \text{ V}$, $F = 1 \text{ MHz}$
C_{rss}	Common Source Feedback Capacitance		25		pF	$V_{ds} = 28.0 \text{ V}$, $V_{as} = 0 \text{ V}$, $F = 1 \text{ MHz}$
C_{oss}	Common Source Output Capacitance		150		pF	$V_{ds} = 28.0 \text{ V}$, $V_{as} = 0 \text{ V}$, $F = 1 \text{ MHz}$

POLYFET RF DEVICES

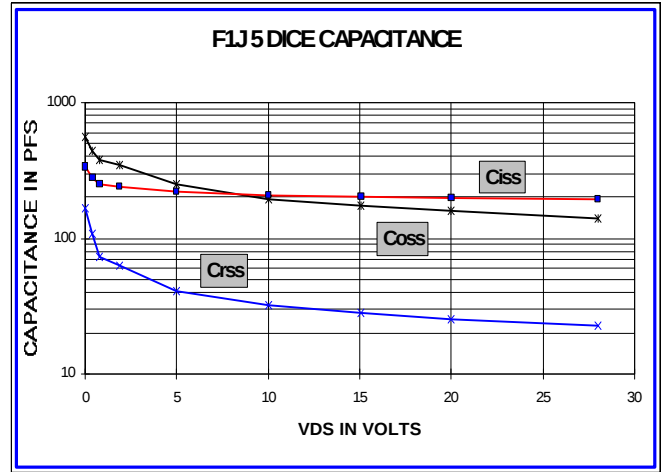
REVISION 1/12/98

F1120

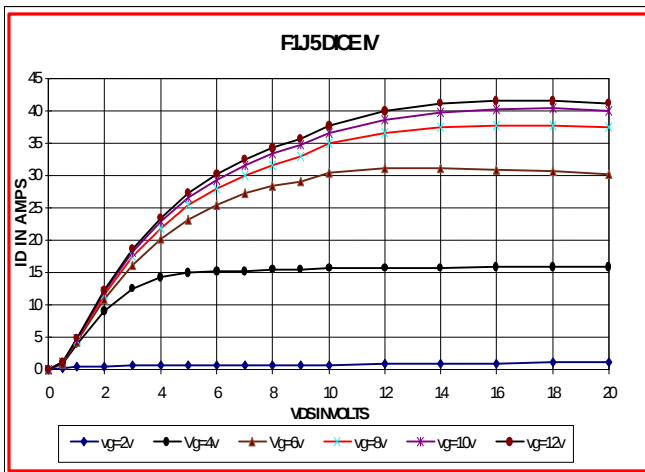
POUT VS PIN GRAPH



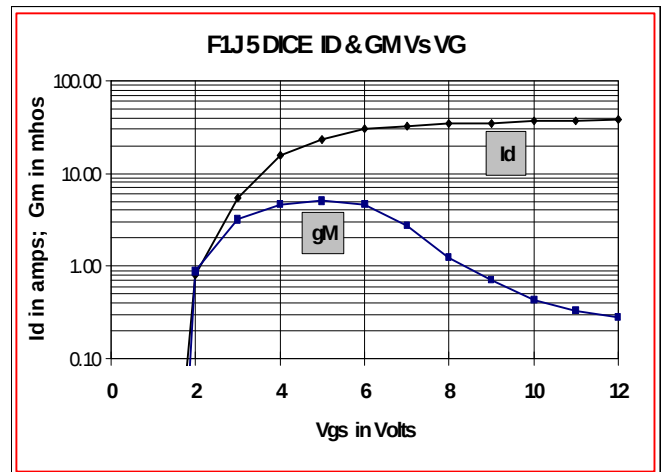
CAPACITANCE VS VOLTAGE



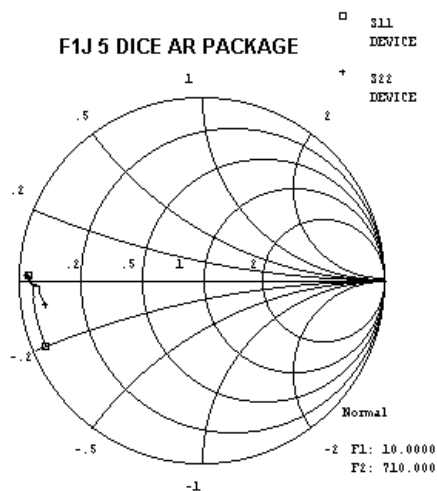
IV CURVE



ID AND GM VS VGS



S11 AND S22 SMITH CHART



PACKAGE DIMENSIONS IN INCHES

