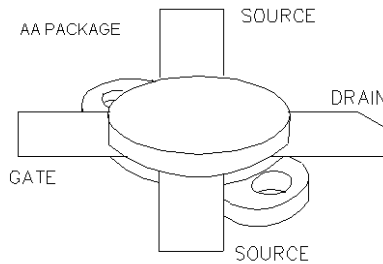




General Description

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

20 Watts Single Ended

Package Style AA

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
90 Watts	1.95 °C/W	200 °C	-65 °C to 150 °C	4 A	50 V	50V	30V

RF CHARACTERISTICS (20WATTS OUTPUT)

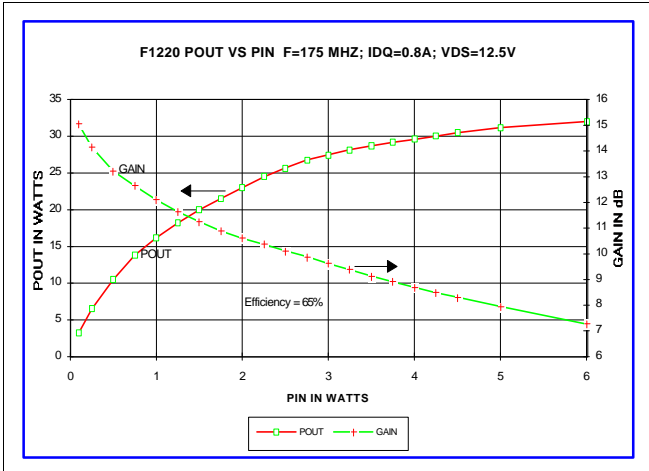
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Gps	Common Source Power Gain	10			dB	$I_{dq} = 0.8 \text{ A}$, $V_{ds} = 12.5 \text{ V}$, $F = 175 \text{ MHz}$
η	Drain Efficiency		60		%	$I_{dq} = 0.8 \text{ A}$, $V_{ds} = 12.5 \text{ V}$, $F = 175 \text{ MHz}$
VSWR	Load Mismatch Tolerance			20:1	Relative	$I_{dq} = 0.8 \text{ A}$, $V_{ds} = 12.5 \text{ V}$, $F = 175 \text{ MHz}$

ELECTRICAL CHARACTERISTICS (EACH SIDE)

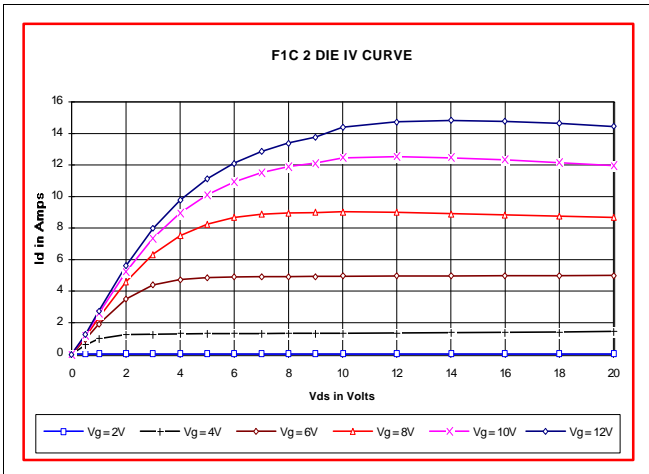
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Bvdss	Drain Breakdown Voltage	40			V	$I_{ds} = 0.1 \text{ A}$, $V_{gs} = 0 \text{ V}$
I_{dss}	Zero Bias Drain Current			2	mA	$V_{ds} = 12.5 \text{ V}$, $V_{gs} = 0 \text{ V}$
I_{gss}	Gate Leakage Current			1	uA	$V_{ds} = 0 \text{ V}$, $V_{gs} = 30 \text{ V}$
V_{gs}	Gate Bias for Drain Current	1		7	V	$I_{ds} = 0.2 \text{ A}$, $V_{gs} = V_{ds}$
gM	Forward Transconductance		1.6		Mho	$V_{ds} = 10 \text{ V}$, $V_{gs} = 5 \text{ V}$
Rdson	Saturation Resistance		0.45		Ohm	$V_{gs} = 20 \text{ V}$, $I_{ds} = 16 \text{ A}$
I_{dsat}	Saturation Current		15		Amp	$V_{gs} = 20 \text{ V}$, $V_{ds} = 10 \text{ V}$
Ciss	Common Source Input Capacitance		80		pF	$V_{ds} = 12.5 \text{ V}$, $V_{gs} = 0 \text{ V}$, $F = 1 \text{ MHz}$
Crss	Common Source Feedback Capacitance		12		pF	$V_{ds} = 12.5 \text{ V}$, $V_{gs} = 0 \text{ V}$, $F = 1 \text{ MHz}$
Coss	Common Source Output Capacitance		60		pF	$V_{ds} = 12.5 \text{ V}$, $V_{gs} = 0 \text{ V}$, $F = 1 \text{ MHz}$

F1220

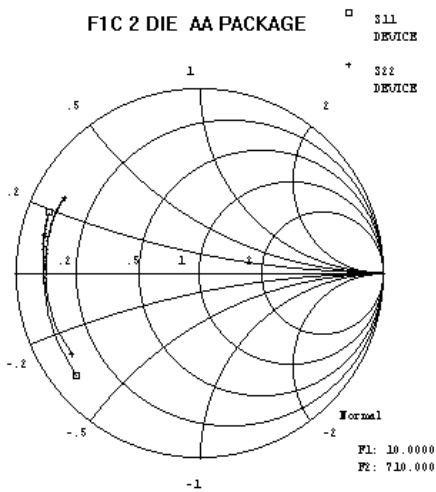
POUT VS PIN GRAPH



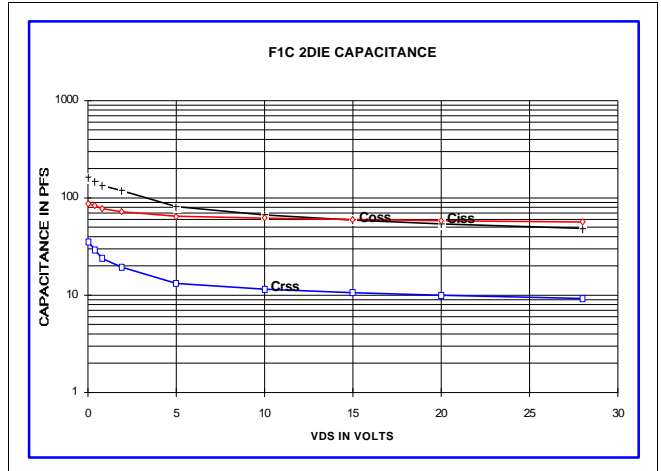
IV CURVE



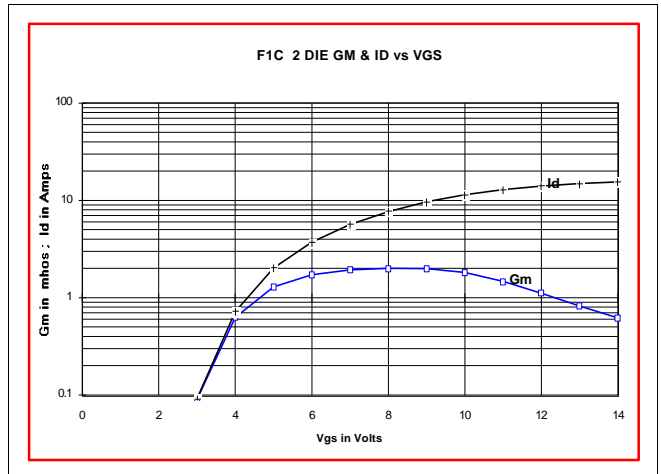
S11 AND S22 SMITH CHART



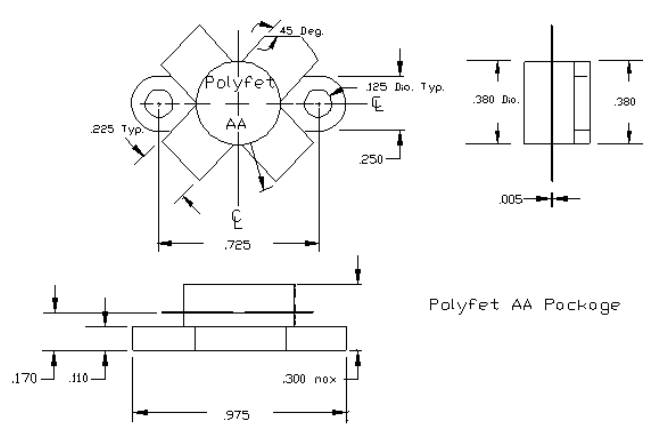
CAPACITANCE VS VOLTAGE



ID AND GM VS VGS



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