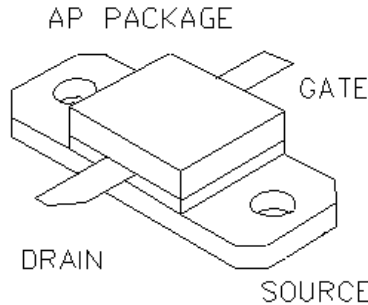




**General Description**

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"<sup>TM</sup> 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**

**10Watts Single Ended**

**Package Style AP**

**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
50 Watts	3.5 °C/W	200 °C	-65 °C to 150 °C	2 A	50 V	50V	30V

**RF CHARACTERISTICS ( 10WATTS OUTPUT )**

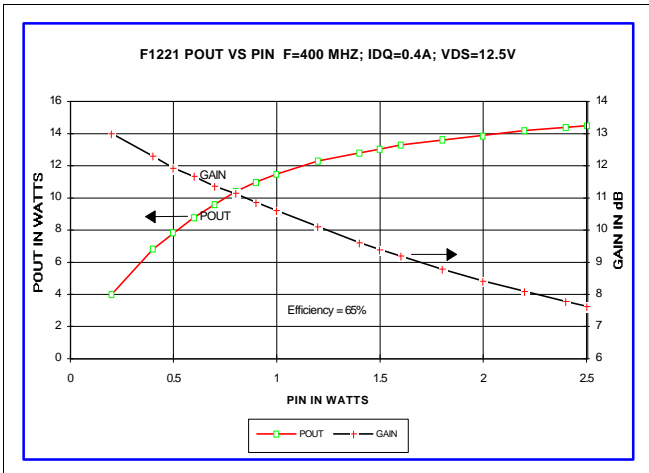
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Gps	Common Source Power Gain	10			dB	$I_{dq} = 0.4 \text{ A}$ , $V_{ds} = 12.5 \text{ V}$ , $F = 400 \text{ MHz}$
$\eta$	Drain Efficiency		60		%	$I_{dq} = 0.4 \text{ A}$ , $V_{ds} = 12.5 \text{ V}$ , $F = 400 \text{ MHz}$
VSWR	Load Mismatch Tolerance			20:1	Relative	$I_{dq} = 0.4 \text{ A}$ , $V_{ds} = 12.5 \text{ V}$ , $F = 400 \text{ MHz}$

**ELECTRICAL CHARACTERISTICS (EACH SIDE)**

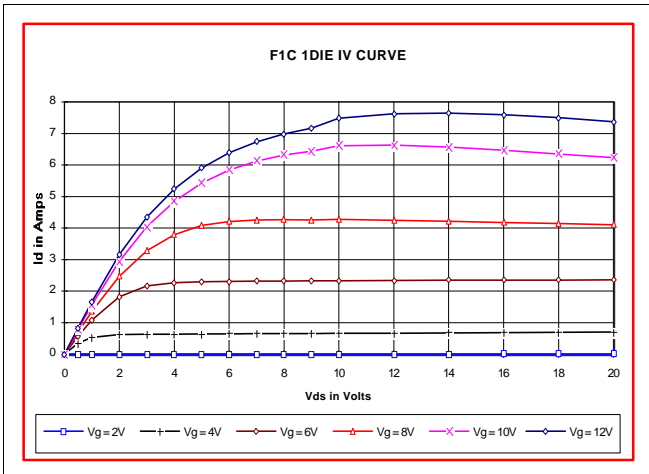
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Bvdss	Drain Breakdown Voltage	40			V	$I_{ds} = 0.05 \text{ A}$ , $V_{gs} = 0 \text{ V}$
$I_{dss}$	Zero Bias Drain Current			1	mA	$V_{ds} = 12.5 \text{ V}$ , $V_{gs} = 0 \text{ V}$
$I_{gss}$	Gate Leakage Current			1	uA	$V_{ds} = 0 \text{ V}$ , $V_{gs} = 30 \text{ V}$
$V_{gs}$	Gate Bias for Drain Current	1		7	V	$I_{ds} = 0.1 \text{ A}$ , $V_{gs} = V_{ds}$
gM	Forward Transconductance		0.8		Mho	$V_{ds} = 10 \text{ V}$ , $V_{gs} = 5 \text{ V}$
$R_{dson}$	Saturation Resistance		0.7		Ohm	$V_{gs} = 20 \text{ V}$ , $I_{ds} = 8 \text{ A}$
$I_{dsat}$	Saturation Current		7.5		Amp	$V_{gs} = 20 \text{ V}$ , $V_{ds} = 10 \text{ V}$
$C_{iss}$	Common Source Input Capacitance		40		pF	$V_{ds} = 12.5 \text{ V}$ , $V_{gs} = 0 \text{ V}$ , $F = 1 \text{ MHz}$
$C_{rss}$	Common Source Feedback Capacitance		6		pF	$V_{ds} = 12.5 \text{ V}$ , $V_{gs} = 0 \text{ V}$ , $F = 1 \text{ MHz}$
$C_{oss}$	Common Source Output Capacitance		30		pF	$V_{ds} = 12.5 \text{ V}$ , $V_{gs} = 0 \text{ V}$ , $F = 1 \text{ MHz}$

# F1221

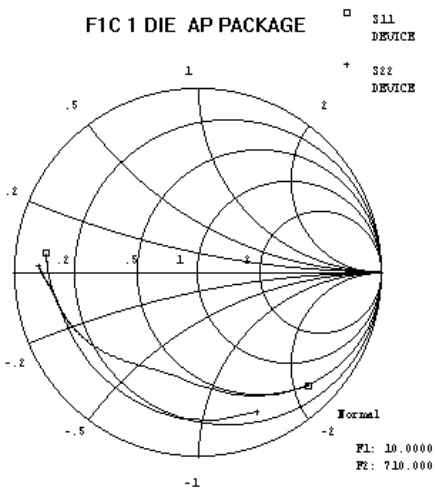
POUT VS PIN GRAPH



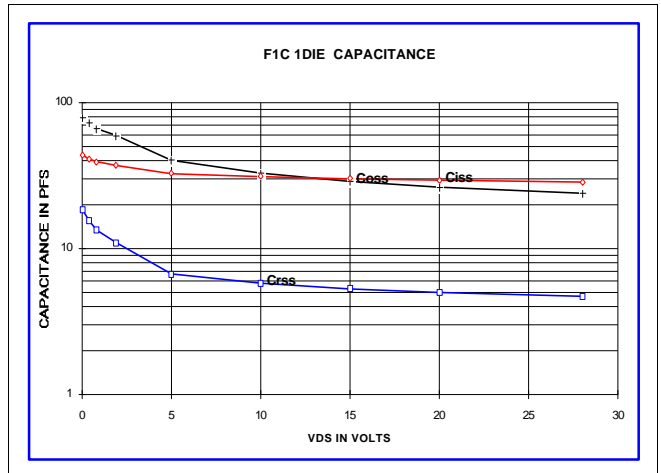
IV CURVE



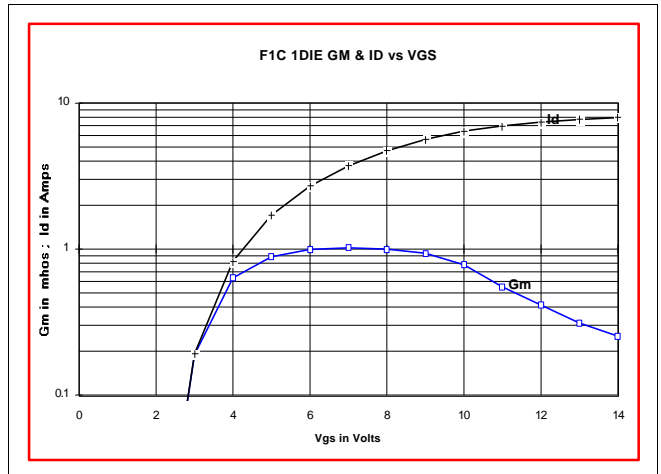
S11 AND S22 SMITH CHART



CAPACITANCE VS VOLTAGE



ID AND GM VS VGS



PACKAGE DIMENSIONS IN INCHES

