

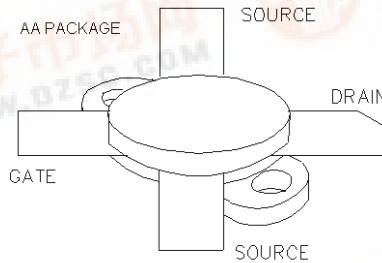


# F1001

## 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

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
50 Watts	3.13 °C/W	200 °C	-65 °C to 150 °C	2 A	70 V	70V	30V

### RF CHARACTERISTICS ( 20WATTS OUTPUT )

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Gps	Common Source Power Gain	16			dB	$I_{dq} = 0.2 A, V_{ds} = 28.0V, F = 175 MHz$
$\eta$	Drain Efficiency		60		%	$I_{dq} = 0.2 A, V_{ds} = 28.0V, F = 175 MHz$
VSWR	Load Mismatch Tolerance			20:1	Relative	$I_{dq} = 0.2 A, V_{ds} = 28.0V, F = 175 MHz$

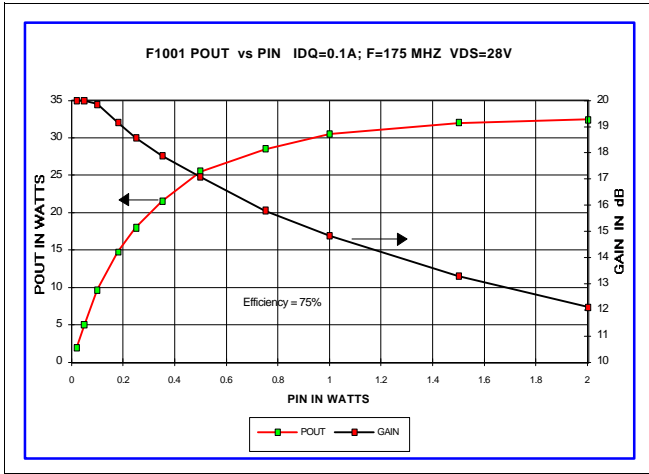
### ELECTRICAL CHARACTERISTICS (EACH SIDE)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Bvdss	Drain Breakdown Voltage	65			V	$I_{ds} = 0.05 A, V_{gs} = 0V$
Idss	Zero Bias Drain Current			1	mA	$V_{ds} = 28.0 V, V_{gs} = 0V$
Igss	Gate Leakage Current			1	uA	$V_{ds} = 0 V, V_{gs} = 30V$
Vgs	Gate Bias for Drain Current	1		7	V	$I_{ds} = 0.1 A, V_{gs} = V_{ds}$
gM	Forward Transconductance		0.8		Mho	$V_{ds} = 10V, V_{gs} = 5V$
Rdson	Saturation Resistance		1		Ohm	$V_{gs} = 20V, I_{ds} = 4A$
Idsat	Saturation Current		5.5		Amp	$V_{gs} = 20V, V_{ds} = 10V$
Ciss	Common Source Input Capacitance		33		pF	$V_{ds} = 28.0V, V_{gs} = 0V, F = 1 MHz$
Crss	Common Source Feedback Capacitance		4		pF	$V_{ds} = 28.0 V, V_{gs} = 0V, F = 1 MHz$
Coss	Common Source Output Capacitance		20		pF	$V_{ds} = 28.0V, V_{gs} = 0V, F = 1 MHz$

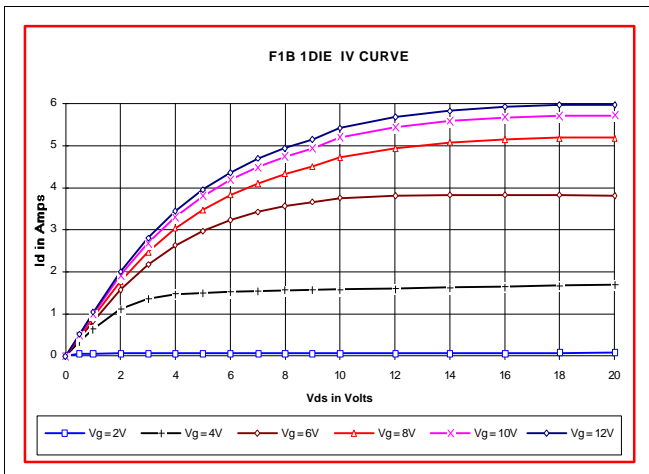


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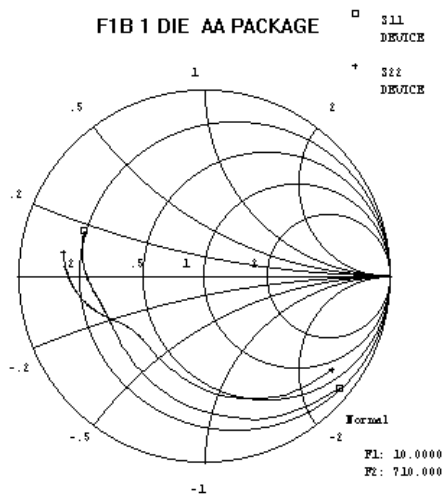
POUT VS PIN GRAPH



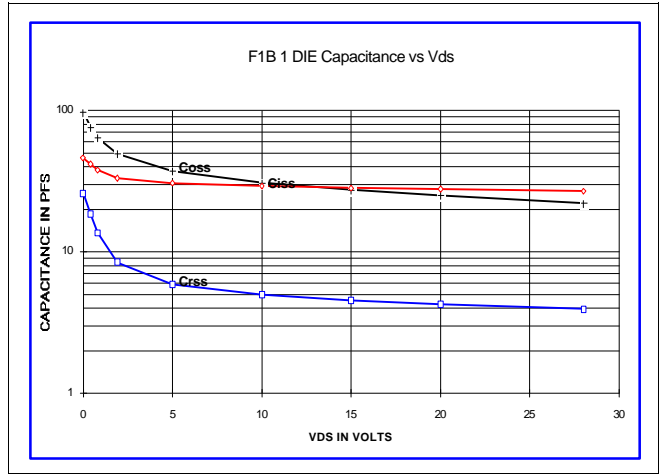
IV CURVE



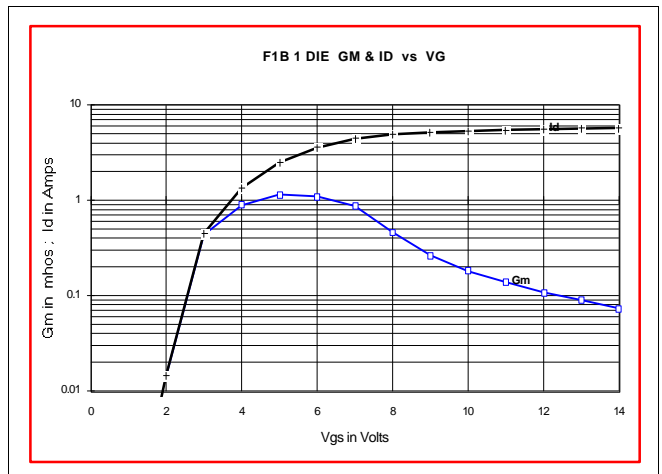
S11 AND S22 SMITH CHART



CAPACITANCE VS VOLTAGE



ID AND GM VS VGS



PACKAGE DIMENSIONS IN INCHES

