

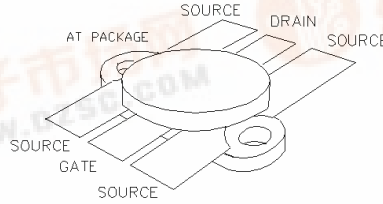


# F1004

## 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

80Watts Single Ended

Package Style AT

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
150 Watts	1.2 °C/W	200 °C	-65 °C to 150 °C	8 A	70 V	70V	30V

### RF CHARACTERISTICS ( 80WATTS OUTPUT )

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Gps	Common Source Power Gain	13			dB	$I_{dq} = 0.8 \text{ A}$ , $V_{ds} = 28.0 \text{ V}$ , $F = 175 \text{ MHz}$
$\eta$	Drain Efficiency		60		%	$I_{dq} = 0.8 \text{ A}$ , $V_{ds} = 28.0 \text{ V}$ , $F = 175 \text{ MHz}$
VSWR	Load Mismatch Toleranc			20:1	Relative	$I_{dq} = 0.8 \text{ A}$ , $V_{ds} = 28.0 \text{ V}$ , $F = 175 \text{ MHz}$

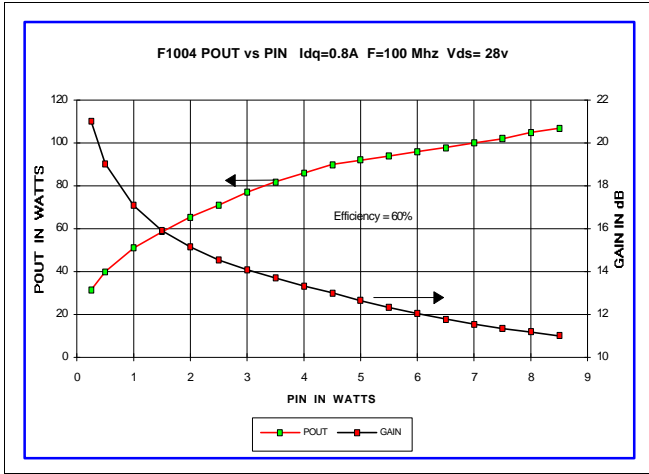
### ELECTRICAL CHARACTERISTICS (EACH SIDE)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Bvdss	Drain Breakdown Voltag	65			V	$I_{ds} = 0.2 \text{ A}$ , $V_{gs} = 0 \text{ V}$
$I_{dss}$	Zero Bias Drain Curren			4	mA	$V_{ds} = 28.0 \text{ V}$ , $V_{gs} = 0 \text{ V}$
$I_{gss}$	Gate Leakage Curren			1	uA	$V_{ds} = 0 \text{ V}$ , $V_{gs} = 30 \text{ V}$
Vgs	Gate Bias for Drain Curren	1		7	V	$I_{ds} = 0.4 \text{ A}$ , $V_{gs} = V_{ds}$
gM	Forward Transconductanc		3.2		Mho	$V_{ds} = 10 \text{ V}$ , $V_{gs} = 5 \text{ V}$
Rdson	Saturation Resistanc		0.35		Ohm	$V_{gs} = 20 \text{ V}$ , $I_{ds} = 16 \text{ A}$
$I_{dsat}$	Saturation Curren		22		Amp	$V_{gs} = 20 \text{ V}$ , $V_{ds} = 10 \text{ V}$
Ciss	Common Source Input Capacitanc		132		pF	$V_{ds} = 28.0 \text{ V}$ , $V_{gs} = 0 \text{ V}$ , $F = 1 \text{ MHz}$
Crss	Common Source Feedback Capacitanc		16		pF	$V_{ds} = 28.0 \text{ V}$ , $V_{gs} = 0 \text{ V}$ , $F = 1 \text{ MHz}$
Coss	Common Source Output Capacitanc		80		pF	$V_{ds} = 28.0 \text{ V}$ , $V_{gs} = 0 \text{ V}$ , $F = 1 \text{ MHz}$

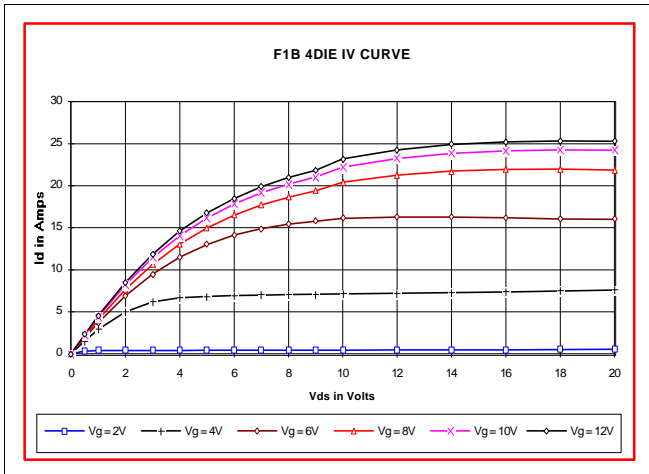


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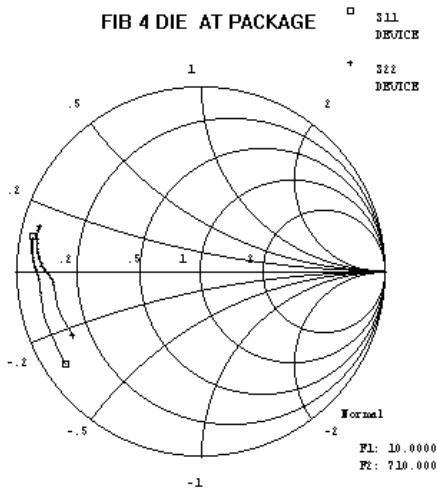
POUT VS PIN GRAPH



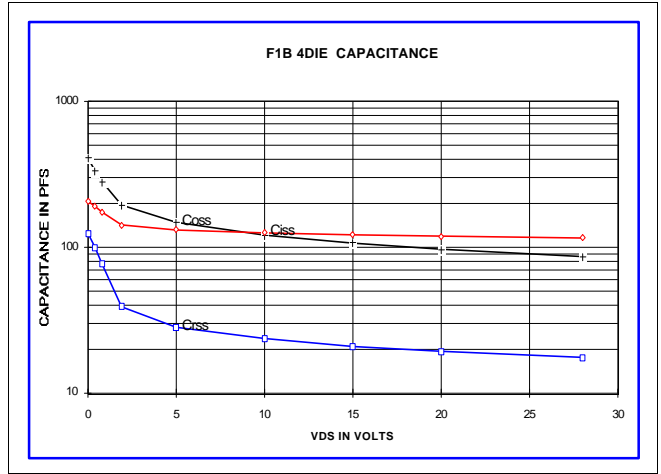
IV CURVE



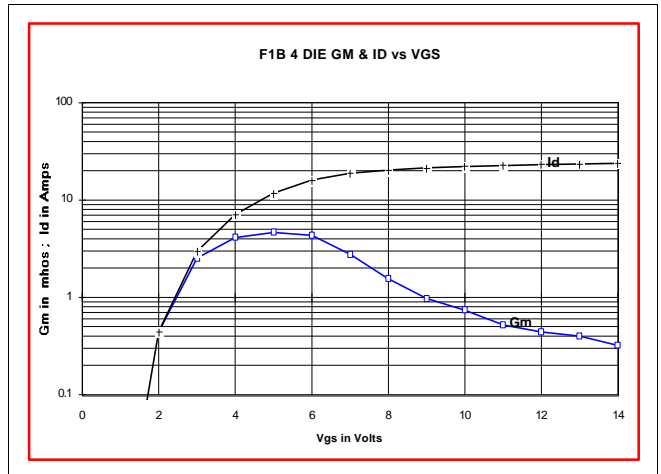
S11 AND S22 SMITH CHART



CAPACITANCE VS VOLTAGE



ID AND GM VS VGS



PACKAGE DIMENSIONS IN INCHES

