

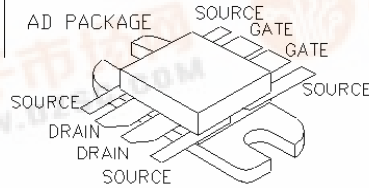


# F1040

## 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

40Watts Push - Pull

Package Style AD

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
170 Watts	1.05 °C/W	200 °C	-65 °C to 150 °C	8 A	70 V	70V	30V

### RF CHARACTERISTICS ( 40WATTS OUTPUT )

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Gps	Common Source Power Gain	13			dB	$I_{dq} = 0.8 \text{ A}$ , $V_{ds} = 28.0 \text{ V}$ , $F = 400 \text{ MHz}$
$\eta$	Drain Efficiency		60		%	$I_{dq} = 0.8 \text{ A}$ , $V_{ds} = 28.0 \text{ V}$ , $F = 400 \text{ MHz}$
VSWR	Load Mismatch Toleranc			20:1	Relative	$I_{dq} = 0.8 \text{ A}$ , $V_{ds} = 28.0 \text{ V}$ , $F = 400 \text{ MHz}$

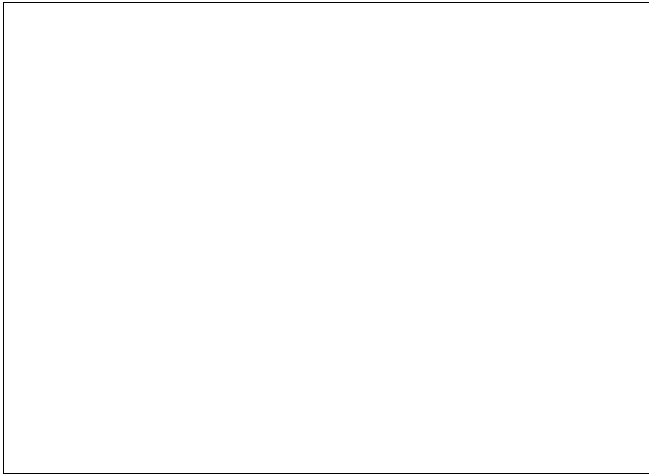
### ELECTRICAL CHARACTERISTICS (EACH SIDE)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Bvdss	Drain Breakdown Voltag	65			V	$I_{ds} = 0.1 \text{ A}$ , $V_{gs} = 0 \text{ V}$
$I_{dss}$	Zero Bias Drain Curren			2	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	$I_{ds} = 0.2 \text{ A}$ , $V_{gs} = V_{ds}$
gM	Forward Transconductanc		1.6		Mho	$V_{ds} = 10 \text{ V}$ , $V_{gs} = 5 \text{ V}$
Rdson	Saturation Resistanc		0.7		Ohm	$V_{gs} = 20 \text{ V}$ , $I_{ds} = 8 \text{ A}$
$I_{dsat}$	Saturation Curren		11		Amp	$V_{gs} = 20 \text{ V}$ , $V_{ds} = 10 \text{ V}$
Ciss	Common Source Input Capacitanc		66		pF	$V_{ds} = 28.0 \text{ V}$ , $V_{gs} = 0 \text{ V}$ , $F = 1 \text{ MHz}$
Crss	Common Source Feedback Capacitanc		8		pF	$V_{ds} = 28.0 \text{ V}$ , $V_{gs} = 0 \text{ V}$ , $F = 1 \text{ MHz}$
Coss	Common Source Output Capacitanc		40		pF	$V_{ds} = 28.0 \text{ V}$ , $V_{gs} = 0 \text{ V}$ , $F = 1 \text{ MHz}$

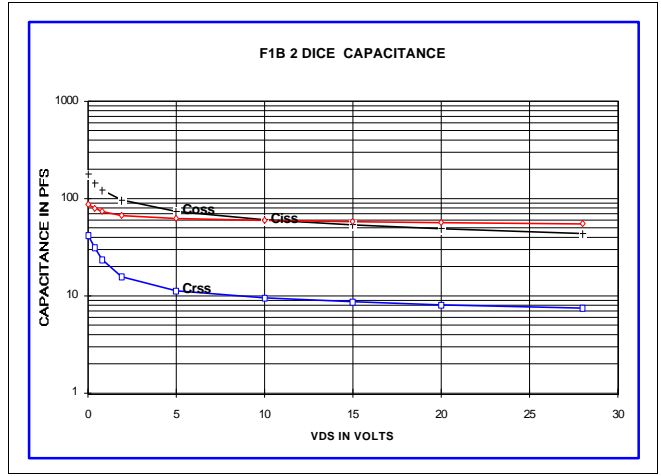


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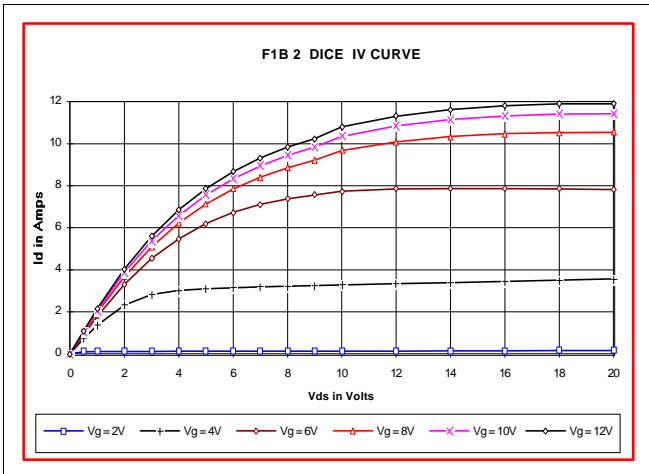
POUT VS PIN GRAPH



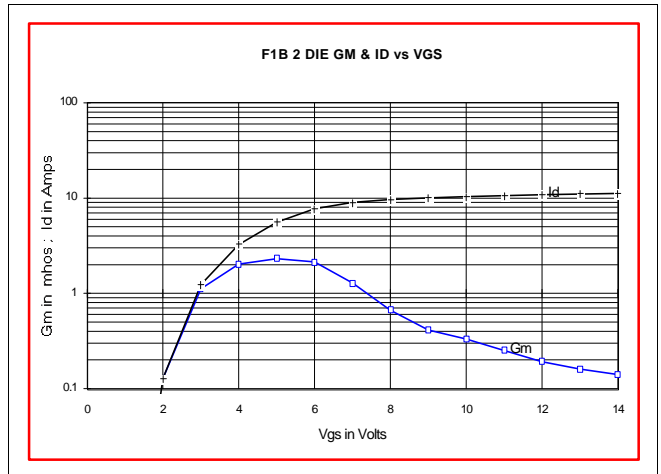
CAPACITANCE VS VOLTAGE



IV CURVE



ID AND GM VS VGS



S11 AND S22 SMITH CHART

PACKAGE DIMENSIONS IN INCHES

