



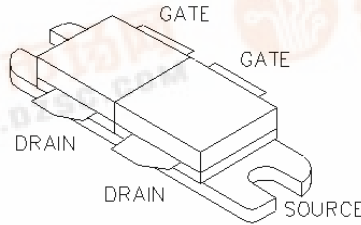
polyfet rf devices

F1020

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"™ process features gold metal for greatly extended lifetime. Low output capacitance and high Ft enhance broadband performance



PATENTED GOLD METALIZED SILICON GATE ENHANCEMENT MODE RF POWER VDMOS TRANSISTOR

130 Watts Gemini

Package Style AR

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
390 Watts	0.45 °C/W	200 °C	-65 °C to 150 °C	20 A	70 V	70V	30V

RF CHARACTERISTICS (130 WATTS OUTPUT)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Gps	Common Source Power Gain	10			dB	Idq = 2 A, Vds = 28.0 V, F = 400 MHz
η	Drain Efficiency		60		%	Idq = 2 A, Vds = 28.0 V, F = 400 MHz
VSWR	Load Mismatch Tolerance			20:1	Relative	Idq = 2 A, Vds = 28.0 V, F = 400 MHz

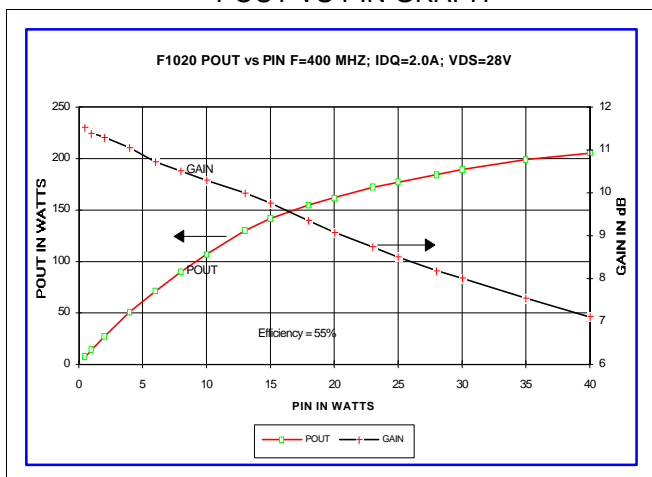
ELECTRICAL CHARACTERISTICS (EACH SIDE)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Bvdss	Drain Breakdown Voltage	65			V	Ids = 0.25 A, Vgs = 0V
Idss	Zero Bias Drain Current			5	mA	Vds = 28.0 V, Vgs = 0V
Igss	Gate Leakage Current			1	uA	Vds = 0 V, Vgs = 30V
Vgs	Gate Bias for Drain Current	1		7	V	Ids = 0.5 A, Vgs = Vds
gM	Forward Transconductance		4		Mho	Vds = 10V, Vgs = 5V
Rdson	Saturation Resistance		0.25		Ohm	Vgs = 20V, Ids = 20A
Idsat	Saturation Current		27.5		Amp	Vgs = 20V, Vds = 10V
Ciss	Common Source Input Capacitance		165		pF	Vds = 28.0 V, Vgs = 0V, F = 1 MHz
Crss	Common Source Feedback Capacitance		20		pF	Vds = 28.0 V, Vgs = 0V, F = 1 MHz
Coss	Common Source Output Capacitance		100		pF	Vds = 28.0 V, Vgs = 0V, F = 1 MHz

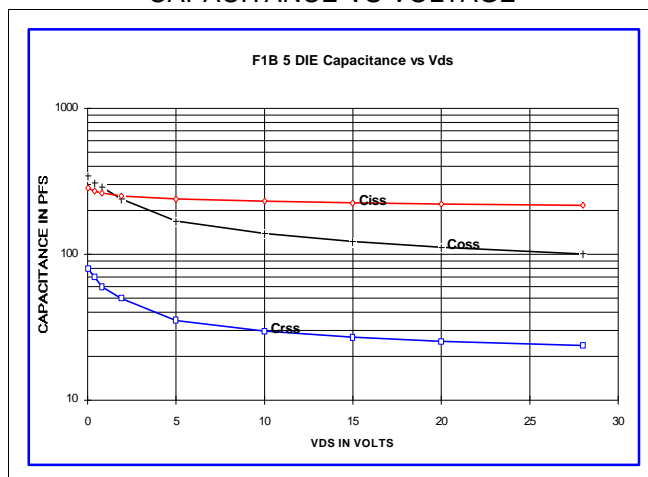


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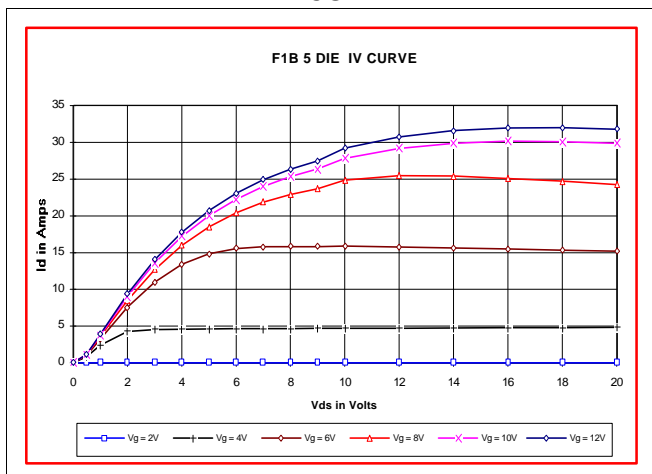
POUT VS PIN GRAPH



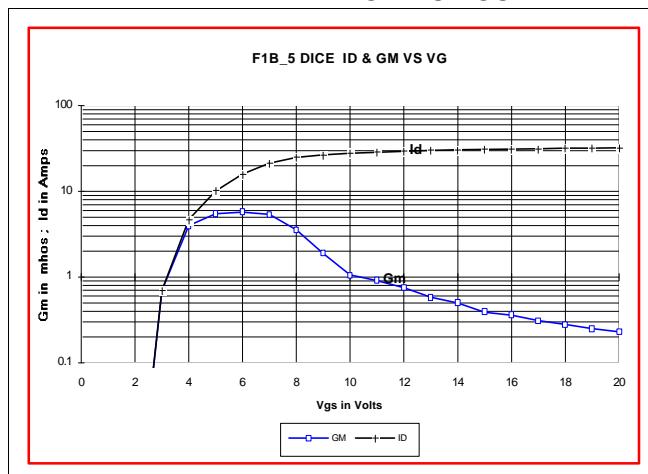
CAPACITANCE VS VOLTAGE



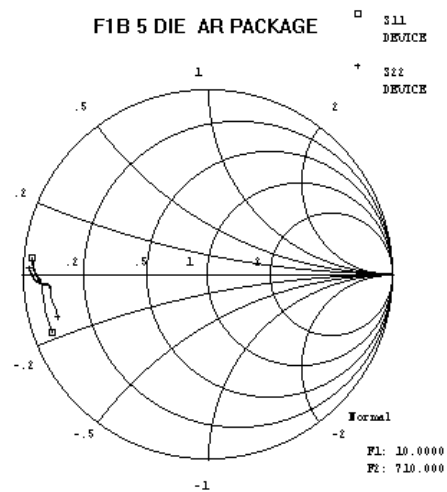
IV CURVE



ID AND GM VS VGS



S11 AND S22 SMITH CHART



PACKAGE DIMENSIONS IN INCHES

