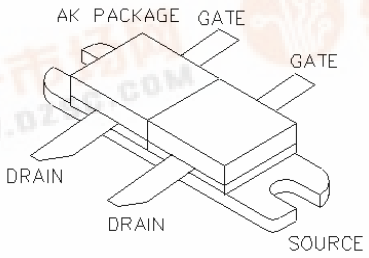
polyfet rf devices

F1108

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 F_t enhance broadband performance



PATENTED GOLD METALIZED SILICON GATE ENHANCEMENT MODE RF POWER VDMOS TRANSISTOR

80 Watts Gemini

Package Style AK

HIGH EFFICIENCY, LINEAR, HIGH GAIN, LOW NOISE

ABSOLUTE MAXIMUM RATINGS (T_C = 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	0.95 °C/W	200 °C	-65 °C to 150 °C	8 A	70 V	70 V	30V

RF CHARACTERISTICS (80 WATTS OUTPUT)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Gps	Common Source Power Gain	11			dB	Idq = 0.8 A, Vds = 28.0 V, F = 400 MHz
η	Drain Efficiency		55		%	Idq = 0.8 A, Vds = 28.0 V, F = 400 MHz
VSWR	Load Mismatch Tolerance			20:1	Relative	Idq = 0.8 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 = 0.1 A, Vgs = 0V
Idss	Zero Bias Drain Current			2	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 = 0.2 A, Vgs = Vds
gM	Forward Transconductance		2		Mho	Vds = 10V, Vgs = 5V
Rdson	Saturation Resistance		0.7		Ohm	Vgs = 20V, Ids = 8A
Idsat	Saturation Current		12		Amp	Vgs = 20V, Vds = 10V
Ciss	Common Source Input Capacitance		80		pF	Vds = 28.0 V, Vgs = 0V, F = 1 MHz
Crss	Common Source Feedback Capacitance		10		pF	Vds = 28.0 V, Vgs = 0V, F = 1 MHz
Coss	Common Source Output Capacitance		60		pF	Vds = 28.0 V, Vgs = 0V, F = 1 MHz

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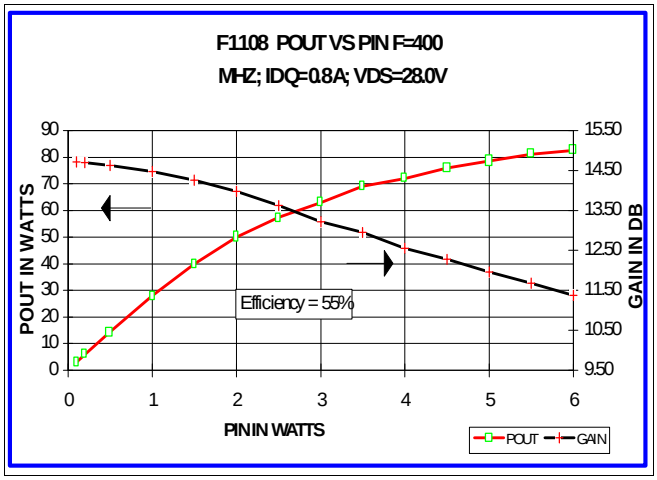
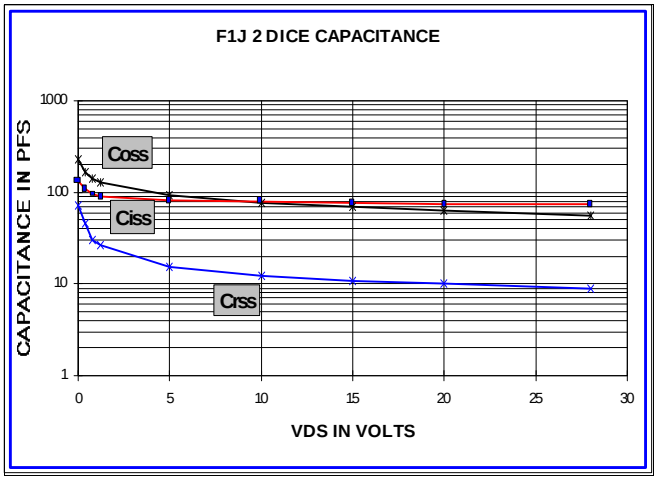
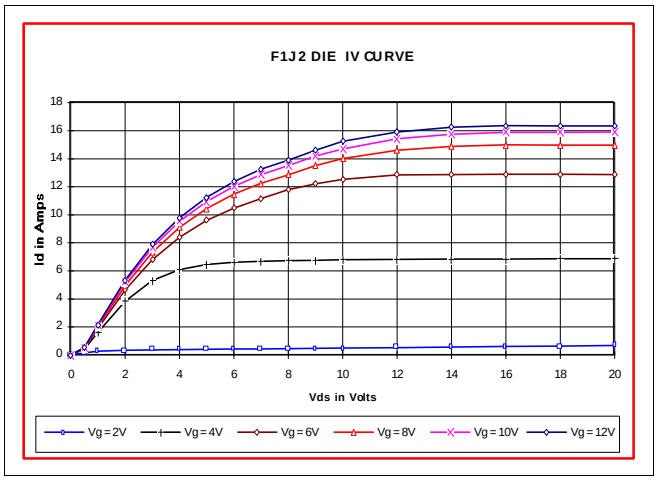
POUT VS PIN GRAPH



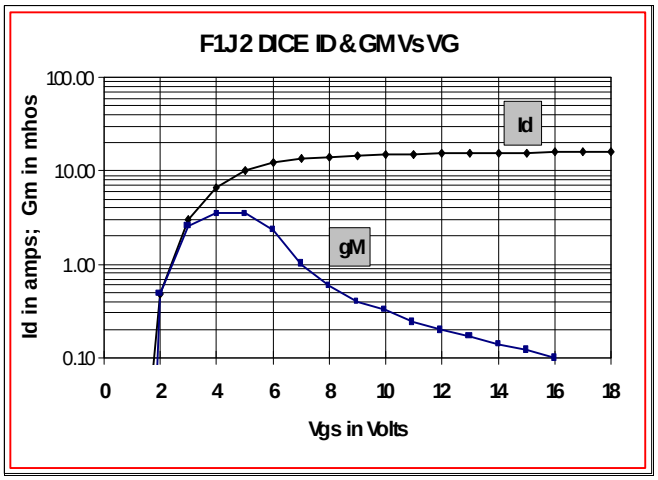
CAPACITANCE VS VOLTAGE



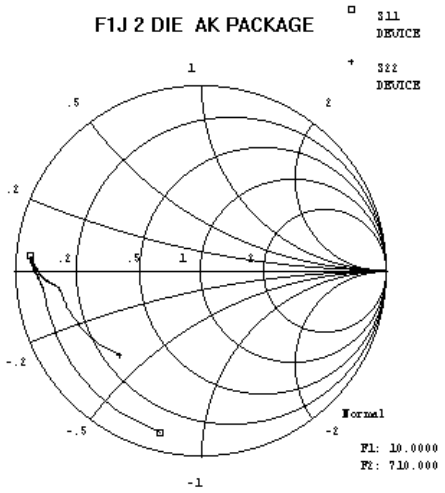
IV CURVE



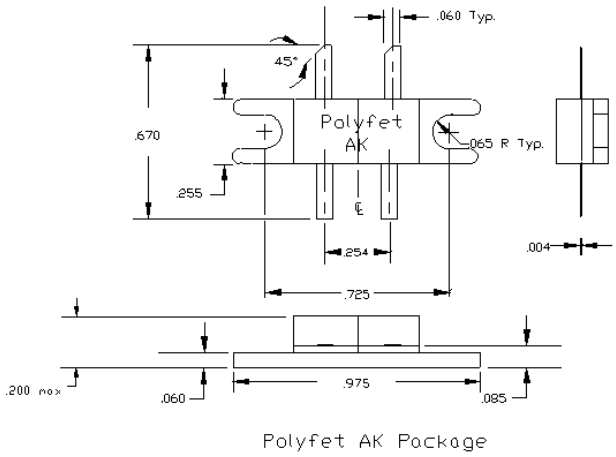
ID AND GM VS VGS



S11 AND S22 SMITH CHART



PACKAGE DIMENSIONS IN INCHES



Polyfet AK Package

Tolerance 0.XX +/- 0.01 0.XXX +/- 0.005 inches

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