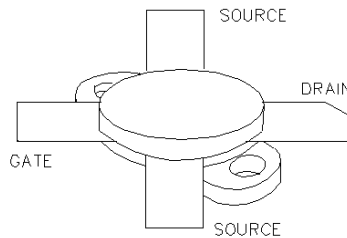




General Description

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"TM process features low feedback and output capacitances resulting in high F_t transistors with high input impedance and high efficiency.



SILICON GATE ENHANCEMENT MODE

RF POWER VDMOS TRANSISTOR

175.0 Watts Single Ended

Package Style AM

**HIGH EFFICIENCY, LINEAR
HIGH GAIN, LOW NOISE**

ABSOLUTE MAXIMUM RATINGS ($T = 25^{\circ}\text{C}$)

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
270 Watts	0.65°C/W	200°C	-65°C to 150°C	11.0 A	125V	125V	20 V

RF CHARACTERISTICS (175.0 WATTS OUTPUT)

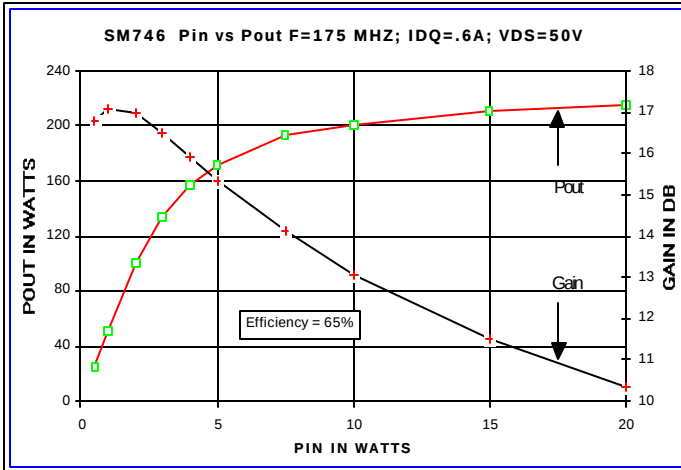
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Gps	Common Source Power Gain	13			dB	$I_{dq} = 0.60\text{ A}$, $V_{ds} = 50.0\text{ V}$, $F = 175\text{ MHz}$
η	Drain Efficiency		65		%	$I_{dq} = 0.60\text{ A}$, $V_{ds} = 50.0\text{ V}$, $F = 175\text{ MHz}$
VSWR	Load Mismatch Tolerance			20:1	Relative	$I_{dq} = 0.60\text{ A}$, $V_{ds} = 50.0\text{ V}$, $F = 175\text{ MHz}$

ELECTRICAL CHARACTERISTICS (EACH SIDE)

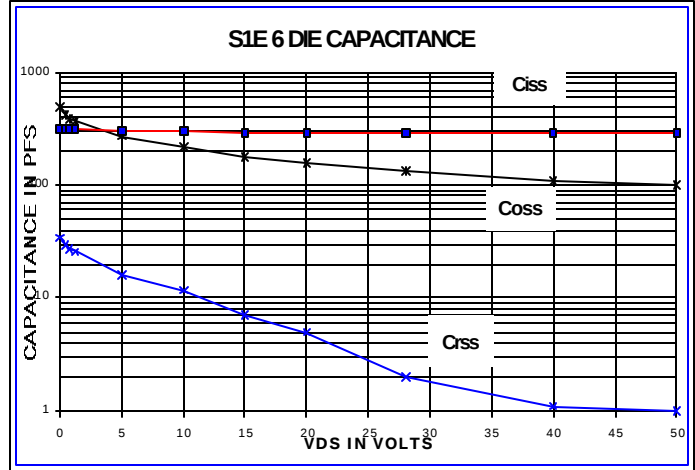
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Bvdss	Drain Breakdown Voltage	125			V	$I_{ds} = 60.00\text{ mA}$, $V_{gs} = 0\text{ V}$
Idss	Zero Bias Drain Current			6.0	mA	$V_{ds} = 50.0\text{ V}$, $V_{gs} = 0\text{ V}$
Igss	Gate Leakage Current			1	μA	$V_{ds} = 0\text{ V}$, $V_{gs} = 30\text{ V}$
Vgs	Gate Bias for Drain Current	1		7	V	$I_{ds} = 0.30\text{ A}$, $V_{gs} = V_{ds}$
gM	Forward Transconductance		4.8		Mho	$V_{ds} = 10\text{ V}$, $V_{gs} = 5\text{ V}$
Rdson	Saturation Resistance		0.50		Ohm	$V_{gs} = 20\text{ V}$, $I_{ds} = 6.00\text{ A}$
Idsat	Saturation Current		21.00		Amp	$V_{gs} = 20\text{ V}$, $V_{ds} = 10\text{ V}$
Ciss	Common Source Input Capacitance		288.0		pF	$V_{ds} = 50.0\text{ V}$, $V_{gs} = 0\text{ V}$, $F = 1\text{ MHz}$
Crss	Common Source Feedback Capacitance		1.2		pF	$V_{ds} = 50.0\text{ V}$, $V_{gs} = 0\text{ V}$, $F = 1\text{ MHz}$
Coss	Common Source Output Capacitance		102.0		pF	$V_{ds} = 50.0\text{ V}$, $V_{gs} = 0\text{ V}$, $F = 1\text{ MHz}$

SM746

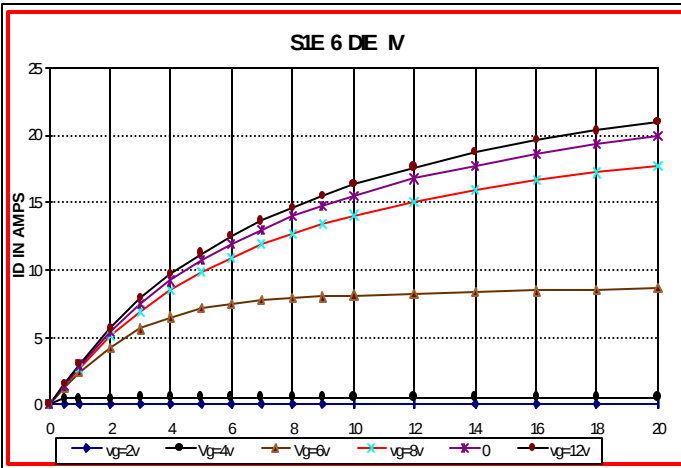
POUT VS PIN GRAPH



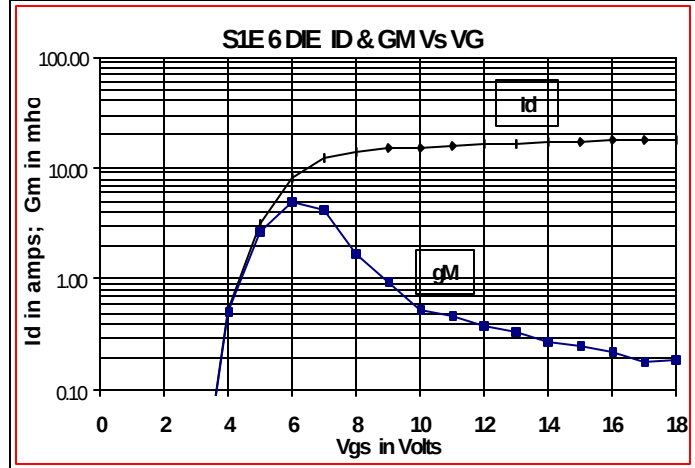
CAPACITANCE VS VOLTAGE



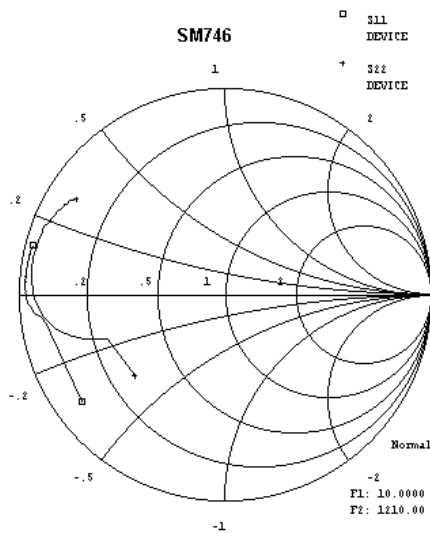
IV CURVE



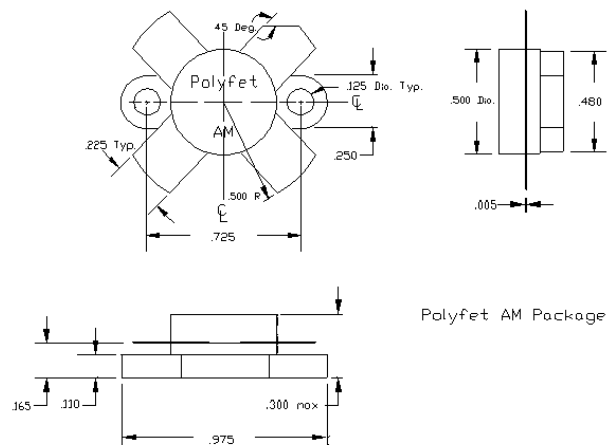
ID & GM VS VGS



S11 & S22 SMITH CHART



PACKAGE DIMENSIONS IN INCHES



Tolerance .XX +/-0.01 .XXX +/- .005 inches

POLYFET RF DEVICES

REVISION 03/08/2001

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