

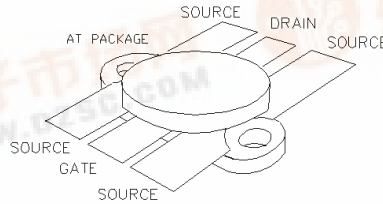


F1410

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 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

120Watts 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
250 Watts	0.8 °C/W	200 °C	-65 °C to 150 °C	10 A	150 V	150 V	30V

RF CHARACTERISTICS (120WATTS OUTPUT)

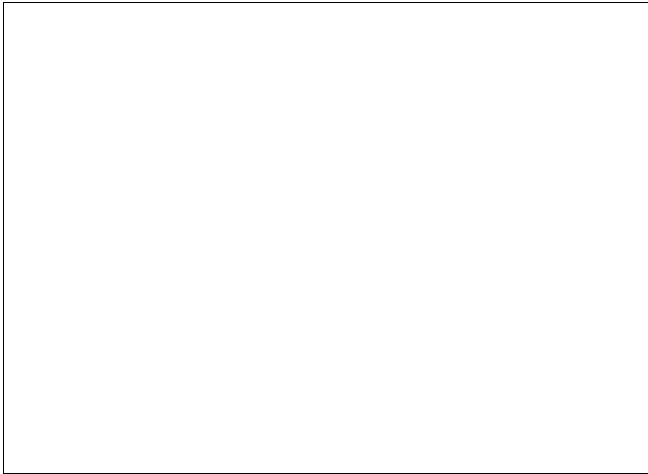
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Gps	Common Source Power Gain	13			dB	$I_{dq} = 0.4 \text{ A}$, $V_{ds} = 50.0 \text{ V}$, $F = 175 \text{ MHz}$
η	Drain Efficiency		65		%	$I_{dq} = 0.4 \text{ A}$, $V_{ds} = 50.0 \text{ V}$, $F = 175 \text{ MHz}$
VSWR	Load Mismatch Toleranc			20:1	Relative	$I_{dq} = 0.4 \text{ A}$, $V_{ds} = 50.0 \text{ V}$, $F = 175 \text{ MHz}$

ELECTRICAL CHARACTERISTICS (EACH SIDE)

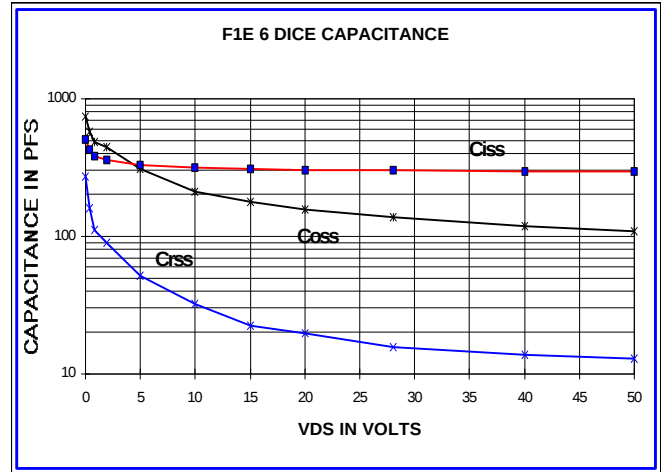
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Bvdss	Drain Breakdown Voltag	125			V	$I_{ds} = 0.1 \text{ A}$, $V_{gs} = 0 \text{ V}$
I_{dss}	Zero Bias Drain Curren			12	mA	$V_{ds} = 50.0 \text{ V}$, $V_{gs} = 0 \text{ V}$
I_{gss}	Gate Leakage Curren			1	uA	$V_{ds} = 0 \text{ V}$, $V_{gs} = 30 \text{ V}$
V_{gs}	Gate Bias for Drain Curren	1		7	V	$I_{ds} = 0.15 \text{ A}$, $V_{gs} = V_{ds}$
g_m	Forward Transconductanc		4.8		Mho	$V_{ds} = 10 \text{ V}$, $V_{gs} = 5 \text{ V}$
R_{dson}	Saturation Resistanc		0.25		Ohm	$V_{gs} = 20 \text{ V}$, $I_{ds} = 10 \text{ A}$
I_{dsat}	Saturation Curren		28.8		Amp	$V_{gs} = 20 \text{ V}$, $V_{ds} = 10 \text{ V}$
C_{iss}	Common Source Input Capacitanc		270		pF	$V_{ds} = 50.0 \text{ V}$, $V_{gs} = 0 \text{ V}$, $F = 1 \text{ MHz}$
C_{rss}	Common Source Feedback Capacitanc		13.2		pF	$V_{ds} = 50.0 \text{ V}$, $V_{gs} = 0 \text{ V}$, $F = 1 \text{ MHz}$
C_{oss}	Common Source Output Capacitanc		120		pF	$V_{ds} = 50.0 \text{ V}$, $V_{gs} = 0 \text{ V}$, $F = 1 \text{ MHz}$

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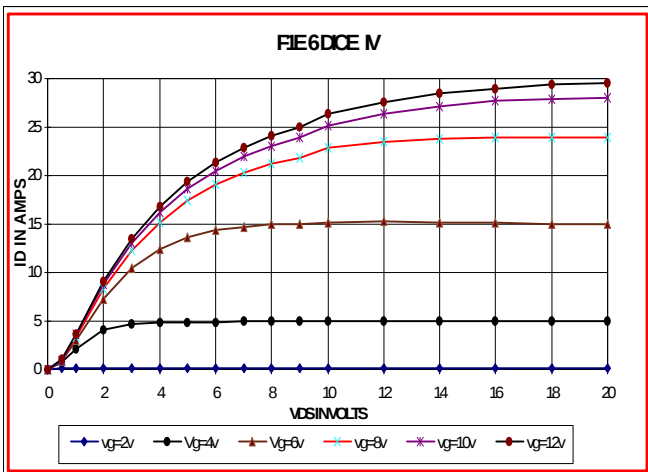
POUT VS PIN GRAPH



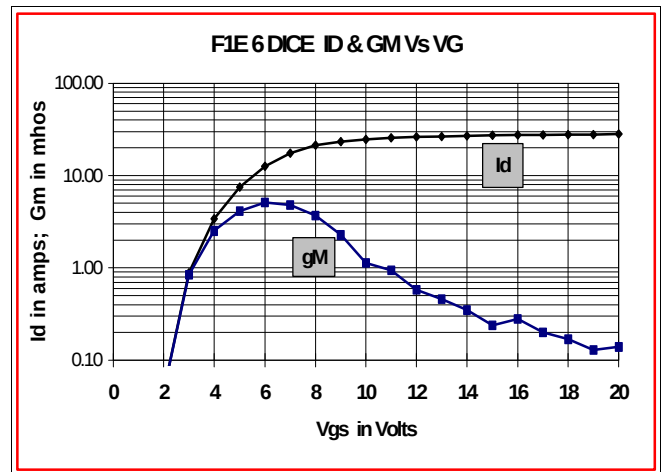
CAPACITANCE VS VOLTAGE



IV CURVE



ID AND GM VS VGS



S11 AND S22 SMITH CHART

PACKAGE DIMENSIONS IN INCHES

