

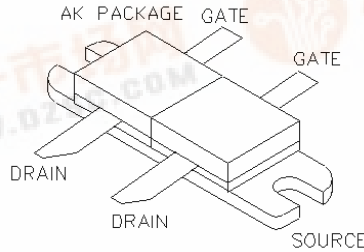


# F1520

## 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

20 Watts Gemini

Package Style AK

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
60 Watts	3 °C/W	200 °C	-65 °C to 150 °C	3.2 A	70 V	70V	30V

### RF CHARACTERISTICS ( 20WATTS OUTPUT )

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Gps	Common Source Power Gain	12			dB	$I_{dq} = 0.8 \text{ A}$ , $V_{ds} = 28.0 \text{ V}$ , $F = 500 \text{ MHz}$
$\eta$	Drain Efficiency		55		%	$I_{dq} = 0.8 \text{ A}$ , $V_{ds} = 28.0 \text{ V}$ , $F = 500 \text{ MHz}$
VSWR	Load Mismatch Toleranc			20:1	Relative	$I_{dq} = 0.8 \text{ A}$ , $V_{ds} = 28.0 \text{ V}$ , $F = 500 \text{ MHz}$

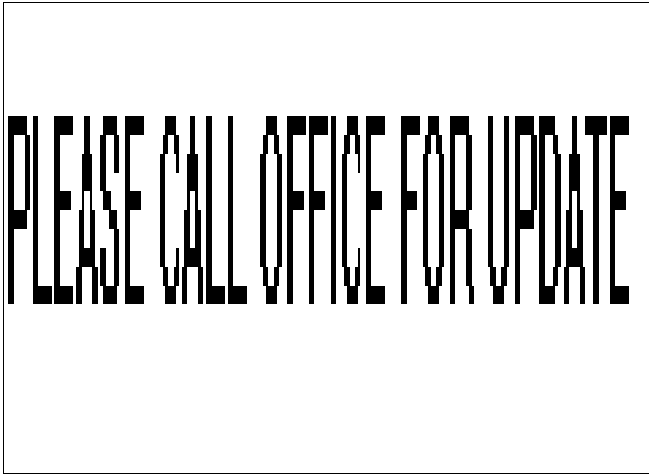
### ELECTRICAL CHARACTERISTICS (EACH SIDE)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Bvdss	Drain Breakdown Voltag	65			V	$I_{ds} = 0.02 \text{ A}$ , $V_{gs} = 0 \text{ V}$
Idss	Zero Bias Drain Curren			0.4	mA	$V_{ds} = 28.0 \text{ V}$ , $V_{gs} = 0 \text{ V}$
Igss	Gate Leakage Curren			1	uA	$V_{ds} = 0 \text{ V}$ , $V_{gs} = 30 \text{ V}$
Vgs	Gate Bias for Drain Curren	1		7	V	$I_{ds} = 0.04 \text{ A}$ , $V_{gs} = V_{ds}$
gM	Forward Transconductanc		0.4		Mho	$V_{ds} = 10 \text{ V}$ , $V_{gs} = 5 \text{ V}$
Rdson	Saturation Resistanc		2.1		Ohm	$V_{gs} = 20 \text{ V}$ , $I_{ds} = 2 \text{ A}$
Idsat	Saturation Curren		2.4		Amp	$V_{gs} = 20 \text{ V}$ , $V_{ds} = 10 \text{ V}$
Ciss	Common Source Input Capacitanc		18		pF	$V_{ds} = 28.0 \text{ V}$ , $V_{gs} = 0 \text{ V}$ , $F = 1 \text{ MHz}$
Crss	Common Source Feedback Capacitanc		2		pF	$V_{ds} = 28.0 \text{ V}$ , $V_{gs} = 0 \text{ V}$ , $F = 1 \text{ MHz}$
Coss	Common Source Output Capacitanc		12		pF	$V_{ds} = 28.0 \text{ V}$ , $V_{gs} = 0 \text{ V}$ , $F = 1 \text{ MHz}$

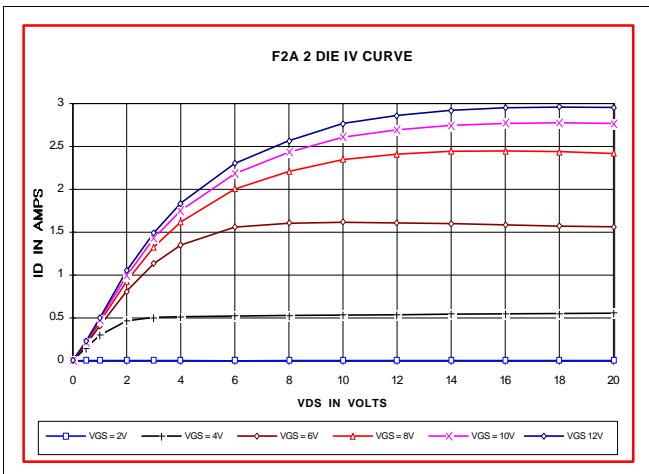


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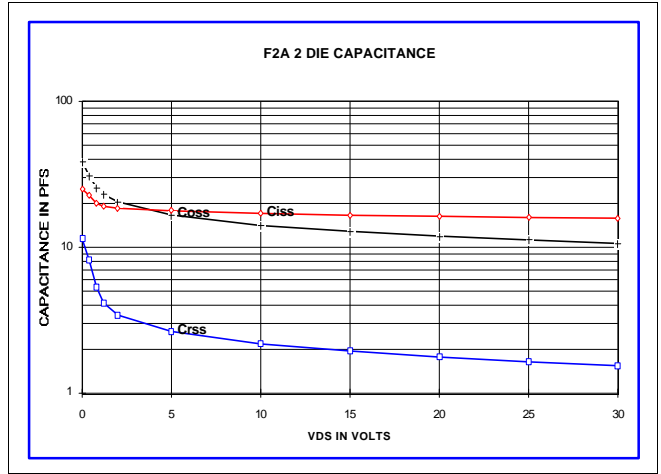
POUT VS PIN GRAPH



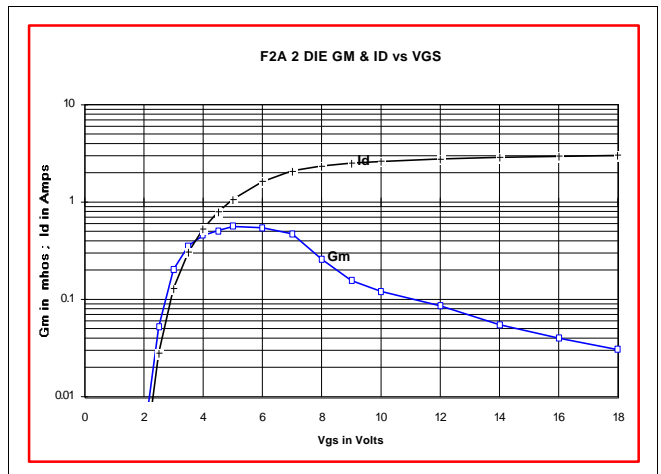
IV CURVE



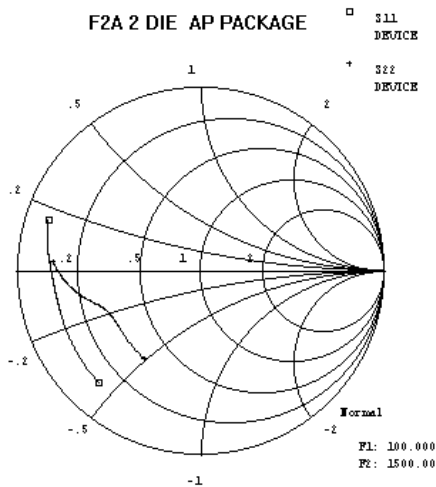
CAPACITANCE VS VOLTAGE



ID AND GM VS VGS



S11 AND S22 SMITH CHART



PACKAGE DIMENSIONS IN INCHES

