

RF MOSFET Power Transistor, 120W, 28V

2 - 175 MHz

DU28120V

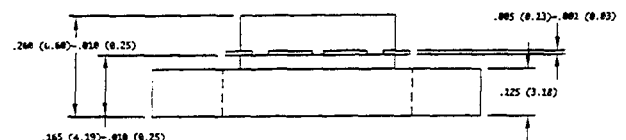
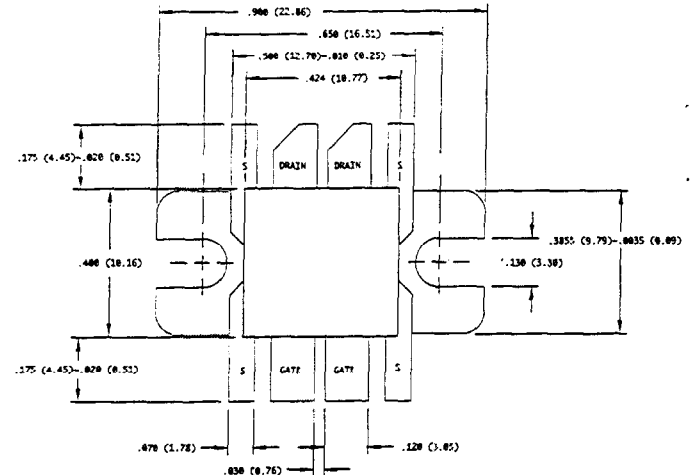
V2.00

Features

- N-Channel Enhancement Mode Device
- DMOS Structure
- Lower Capacitances for Broadband Operation
- High Saturated Output Power
- Lower Noise Figure Than Competitive Devices

Absolute Maximum Ratings at 25°C

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	65	V
Gate-Source Voltage	V_{GS}	20	V
Drain-Source Current	I_{DS}	12*	A
Power Dissipation	P_D	250	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STJ}	-55 to +150	°C
Thermal Resistance	θ_{JC}	0.7	°C/W



UNLESS OTHERWISE NOTED, TOLERANCES ARE:
INCHES - .002" (MILLIMETERS - 0.1300)

Electrical Characteristics at 25°C

Parameter	Symbol	Min	Max	Units	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	65	-	V	$V_{GS}=0.0\text{ V}$, $I_{DS}=30.0\text{ mA}$ *
Drain-Source Leakage Current	I_{DSS}	-	6.0	mA	$V_{DS}=28.0\text{ V}$, $V_{GS}=0.0\text{ V}$ *
Gate-Source Leakage Current	I_{GSS}	-	6.0	μA	$V_{GS}=20.0\text{ V}$, $V_{DS}=0.0\text{ V}$ *
Gate Threshold Voltage	$V_{GS(TH)}$	2.0	6.0	V	$V_{DS}=10.0\text{ V}$, $I_{DS}=600.0\text{ mA}$ *
Forward Transconductance	G_M	3.0	-	S	$V_{DS}=10.0\text{ V}$, $I_{DS}=6000.0\text{ A}$, $\Delta V_{GS}=1.0\text{ V}$, 80 μs Pulse*
Input Capacitance	C_{ISS}	-	270	pF	$V_{DS}=28.0\text{ V}$, $F=1.0\text{ MHz}$ *
Output Capacitance	C_{OSS}	-	240	pF	$V_{DS}=28.0\text{ V}$, $F=1.0\text{ MHz}$ *
Reverse Capacitance	C_{RSS}	-	48	pF	$V_{DS}=28.0\text{ V}$, $F=1.0\text{ MHz}$ *
Power Gain	G_P	13	-	dB	$V_{DS}=28.0\text{ V}$, $I_{DQ}=600\text{ mA}$, $P_{OUT}=120.0\text{ W}$, $F=175\text{ MHz}$
Drain Efficiency	η_D	60	-	%	$V_{DS}=28.0\text{ V}$, $I_{DQ}=600\text{ mA}$, $P_{OUT}=120.0\text{ W}$, $F=175\text{ MHz}$
Return Loss	R_L	10	-	%	$V_{DS}=28.0\text{ V}$, $I_{DQ}=600\text{ mA}$, $P_{OUT}=120.0\text{ W}$, $F=175\text{ MHz}$
Load Mismatch Tolerance	VSWR-T	-	30:1	-	$V_{DS}=28.0\text{ V}$, $I_{DQ}=600\text{ mA}$, $P_{OUT}=120.0\text{ W}$, $F=175\text{ MHz}$

* Per side

Specifications Subject to Change Without Notice.

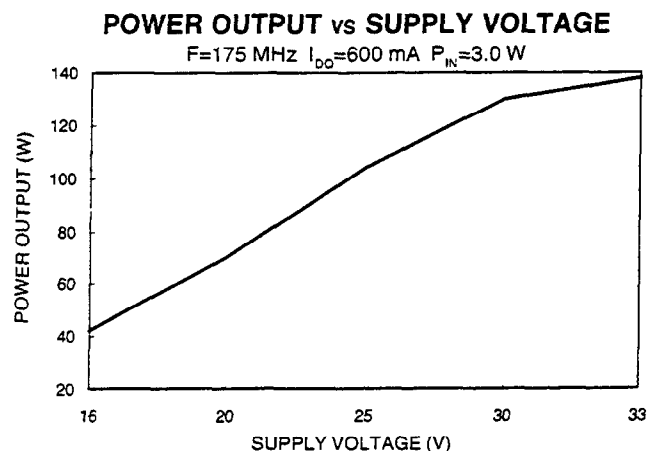
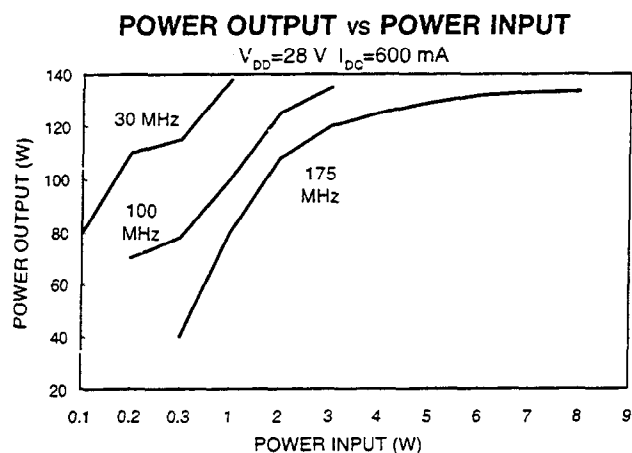
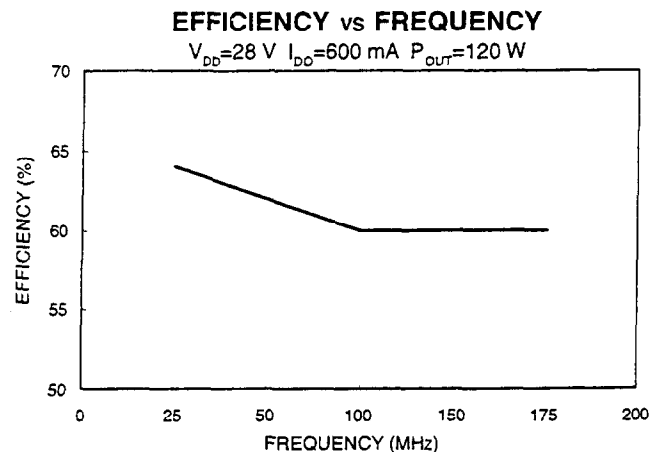
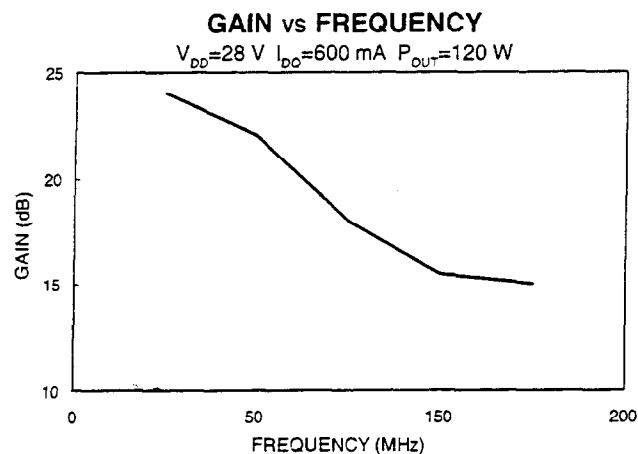
M/A-COM, Inc.

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Typical Broadband Performance Curves



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Typical Device Impedance

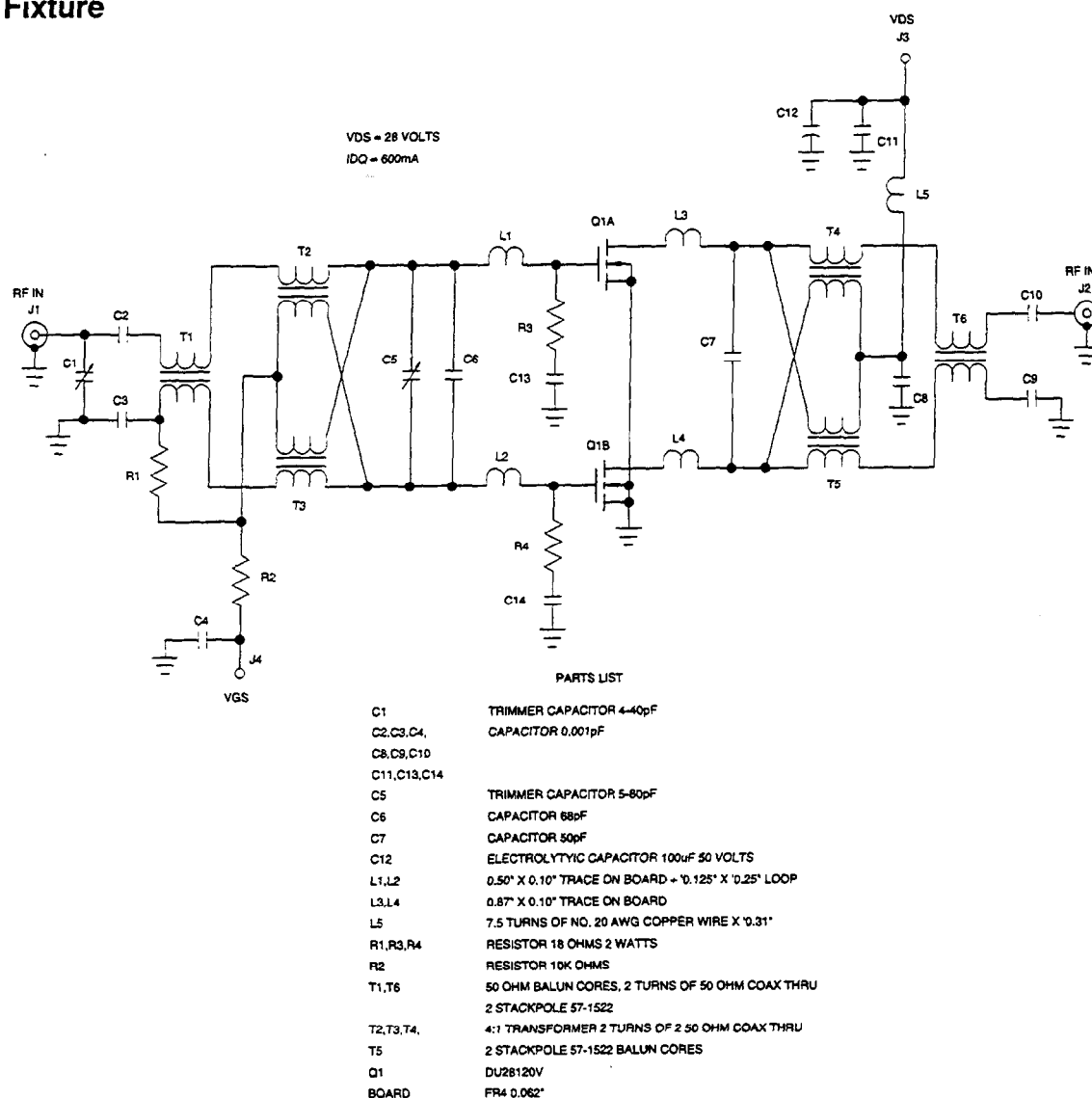
Frequency (MHz)	Z_{IN} (OHMS)	Z_{LOAD} (OHMS)
30	$3.0 - j 12.5$	$8.0 + j 6.0$
100	$1.5 - j 8.5$	$7.0 + j 6.5$
175	$1.0 - j 6.0$	$6.5 + j 5.0$

$$V_{DD}=28 \text{ V}, I_{DQ}=600 \text{ mA}, P_{OUT}=120 \text{ Watts}$$

Z_{IN} is the series equivalent input impedance of the device from gate to gate.

Z_{LOAD} is the optimum series equivalent load impedance as measured from drain to drain.

RF Test Fixture



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