

## RF Power MOSFET Transistor 120W, 2-175MHz, 28V

M/A-COM Products  
Released; RoHS Compliant

### Features

- N-Channel enhancement mode device
- DMOS structure
- Lower capacitances for broadband operation
- High saturated output power
- Lower noise figure than bipolar 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	$I_{DS}$	24	A
Power Dissipation	$P_D$	269	W
Junction Temperature	$T_J$	200	°C
Storage Temperature	$T_{STG}$	-55 to +150	°C
Thermal Resistance	$\theta_{JC}$	0.65	°C/W

### TYPICAL DEVICE IMPEDANCE

F (MHz)	$Z_{IN}$ ( $\Omega$ )	$Z_{LOAD}$ ( $\Omega$ )
30	4.0 - j8.0	3.4 + j2.4
50	1.0 - j2.5	2.2 + j1.3
100	1.0 - j0.5	2.2 + j0.0

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

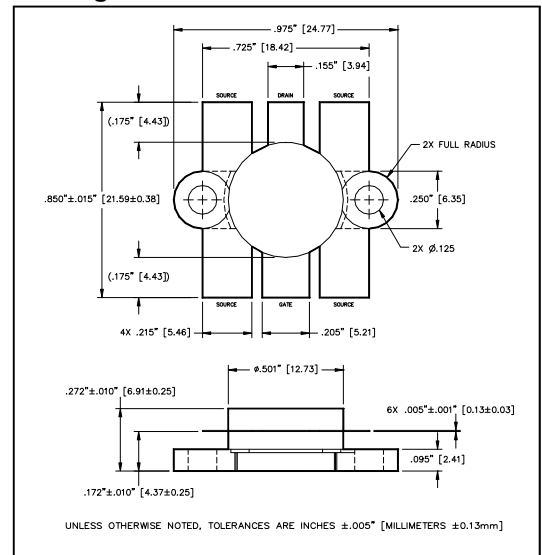
$Z_{IN}$  is the series equivalent input impedance of the device from gate to source.

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

### ELECTRICAL CHARACTERISTICS AT 25°C

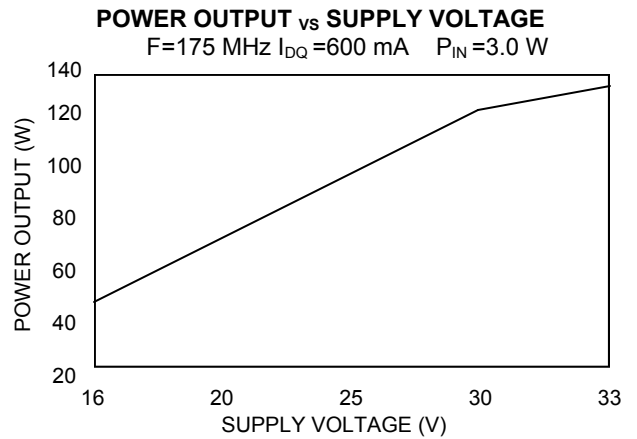
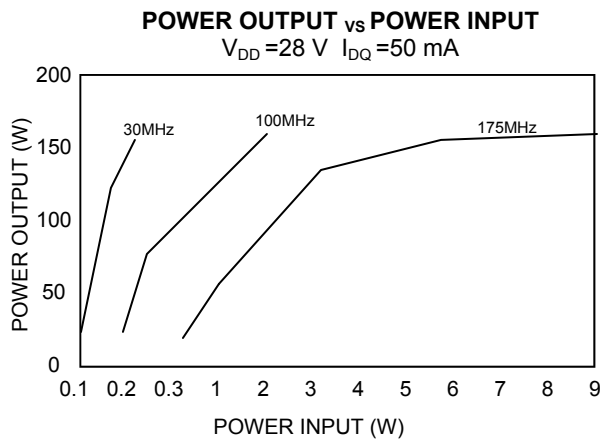
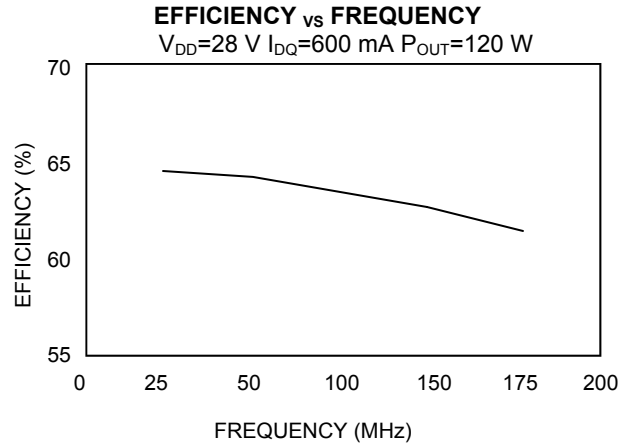
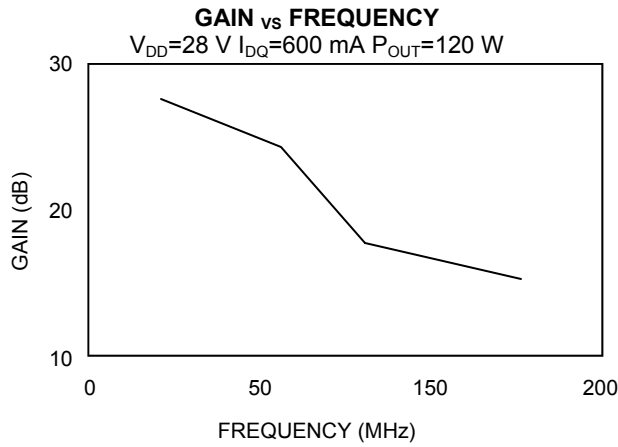
Parameter	Symbol	Min	Max	Units	Test Conditions
Drain-Source Breakdown Voltage	$BV_{DSS}$	65	-	V	$V_{GS} = 0.0 V, I_{DS} = 3.0 mA$
Drain-Source Leakage Current	$I_{DSS}$	-	6.0	mA	$V_{GS} = 28.0 V, V_{DS} = 0.0 V$
Gate-Source Leakage Current	$I_{GSS}$	-	6.0	$\mu A$	$V_{GS} = 20.0 V, V_{DS} = 0.0 V$
Gate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

### Package Outline



LETTER DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	24.64	24.89	.970	.980
B	18.29	18.54	.720	.730
C	21.21	21.97	.835	.865
D	12.60	12.85	.496	.506
E	6.22	6.48	.245	.255
F	3.81	4.06	.150	.160
G	5.33	5.59	.210	.220
H	5.08	5.33	.200	.210
J	3.05	3.30	.120	.130
K	2.29	2.54	.90	.100
L	4.06	4.57	.160	.180
M	6.68	7.49	.263	.295
N	.10	.15	.004	.006

**Typical Broadband Performance Curves**



**TEST FIXTURE SCHEMATIC**

