

## RF Power MOSFET Transistor 80 W, 2 - 175 MHz, 28 V

Rev. V1

### Features

- N-Channel enhancement mode device
- DMOS structure
- Lower capacitances for broadband operation
- High saturated output power
- Lower noise figure than bipolar devices
- RoHS Compliant

### 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	$I_{DS}$	16	A
Power Dissipation	$P_D$	206	W
Junction Temperature	$T_J$	200	°C
Storage Temperature	$T_{STG}$	-65 to +150	°C
Thermal Resistance	$\theta_{JC}$	0.85	°C/W

### TYPICAL DEVICE IMPEDANCE

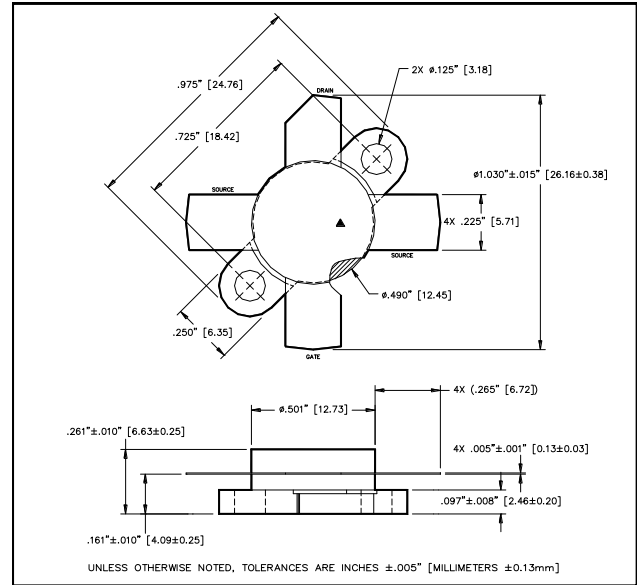
F (MHz)	$Z_{IN}$ ( $\Omega$ )	$Z_{LOAD}$ ( $\Omega$ )
30	5.4 - j4.4	5.7 + j4.7
50	2.5 - j4.4	3.4 + j3.5
100	1.6 - j3.4	2.4 + j2.4
175	0.7 - j1.2	1.7 + j0.8

$V_{DD} = 28V, I_{DQ} = 400mA, P_{OUT} = 80 W$

$Z_{IN}$  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.

### Package Outline

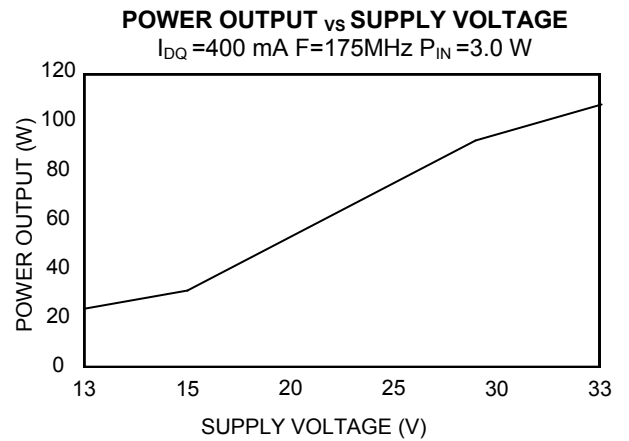
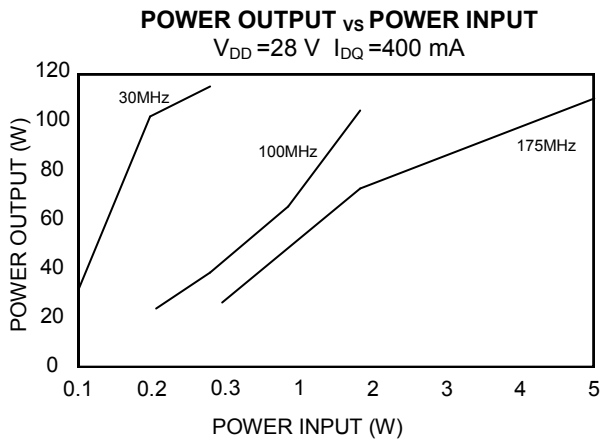
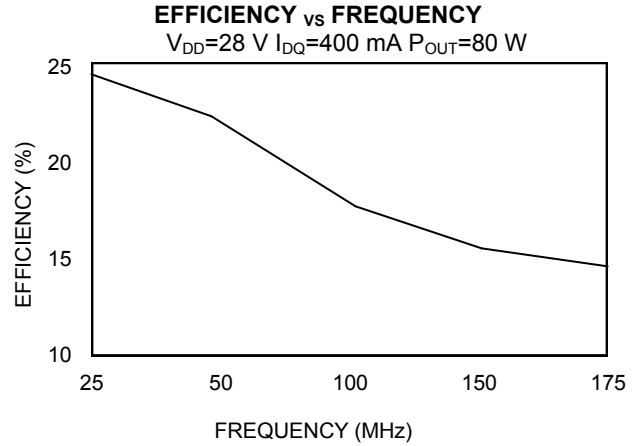
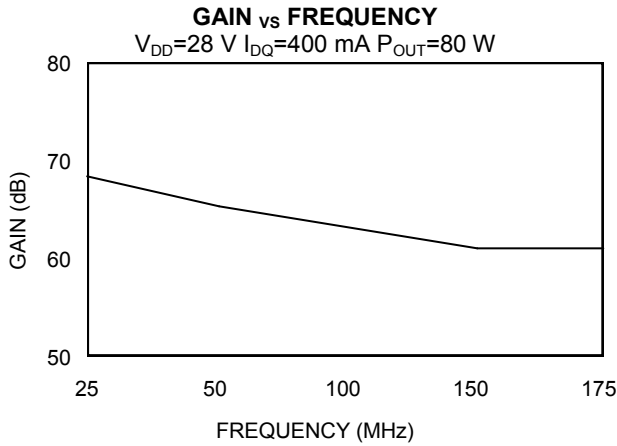


LETTER	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	24.64	24.89	.970	.980
B	18.29	18.54	.720	.730
C	25.91	26.42	1.020	1.040
D	12.60	12.85	.496	.506
E	6.22	6.48	.245	.255
F	5.59	5.84	.220	.230
G	3.05	3.30	.120	.130
H	2.21	2.59	.087	.102
J	3.91	4.42	.154	.174
K	6.53	7.34	.257	.289
L	.10	.15	.004	.006

### ELECTRICAL CHARACTERISTICS AT 25°C

Parameter	Symbol	Min	Max	Units	Test Conditions
Drain-Source Breakdown Voltage	$BV_{DSS}$	65	-	V	$V_{GS} = 0.0 V, I_{DS} = 20.0 mA$
Drain-Source Leakage Current	$I_{DSS}$	-	4.0	mA	$V_{GS} = 28.0 V, V_{DS} = 0.0 V$
Gate-Source Leakage Current	$I_{GSS}$	-	4.0	$\mu A$	$V_{GS} = 20.0 V, V_{DS} = 0.0 V$
Gate Threshold Voltage	$V_{GS(TH)}$	2.0	6.0	V	$V_{DS} = 10.0 V, I_{DS} = 400.0 mA$
Forward Transconductance	$G_M$	2.0	-	S	$V_{DS} = 10.0 V, I_{DS} = 4.0 A, \Delta V_{GS} = 1.0V, 80 \mu s$ Pulse
Input Capacitance	$C_{ISS}$	-	180	pF	$V_{DS} = 28.0 V, F = 1.0 MHz$
Output Capacitance	$C_{OSS}$	-	160	pF	$V_{DS} = 28.0 V, F = 1.0 MHz$
Reverse Capacitance	$C_{RSS}$	-	32	pF	$V_{DS} = 28.0 V, F = 1.0 MHz$
Power Gain	$G_P$	13	-	dB	$V_{DD} = 28.0 V, I_{DQ} = 400 mA, P_{OUT} = 80.0 W F = 175 MHz$
Drain Efficiency	$\eta_D$	60	-	%	$V_{DD} = 28.0 V, I_{DQ} = 400 mA, P_{OUT} = 80.0 W F = 175 MHz$
Load Mismatch Tolerance	VSWR-T	-	30:1	-	$V_{DD} = 28.0 V, I_{DQ} = 400 mA, P_{OUT} = 80.0 W F = 175 MHz$

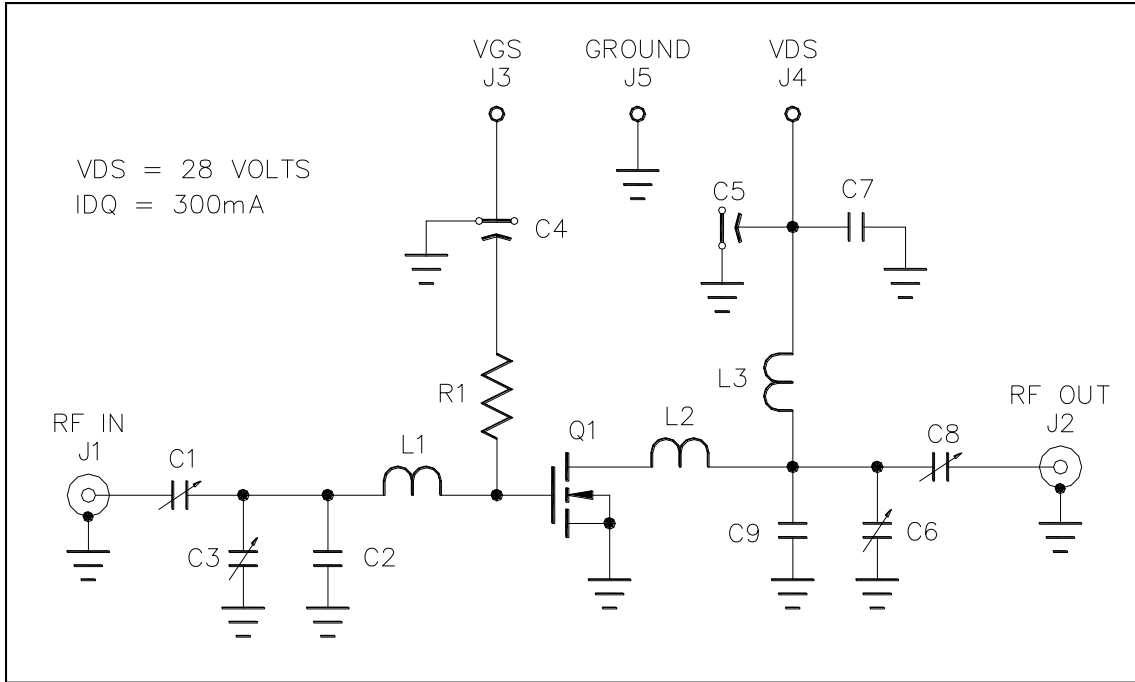
**Typical Broadband Performance Curves**



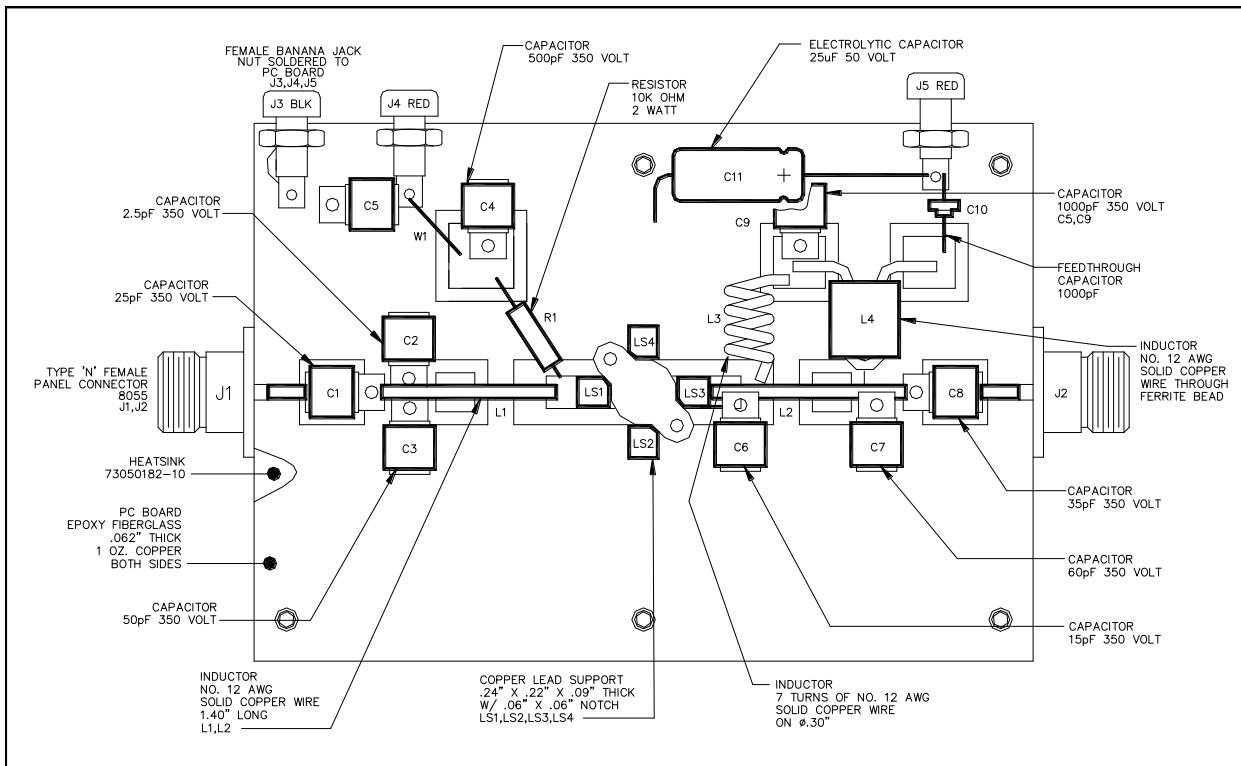
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### TEST FIXTURE SCHEMATIC



### TEST FIXTURE ASSEMBLY



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