

RF Power MOSFET Transistor 60 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}	12	A
Power Dissipation	P_D	159	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-55 to +150	°C
Thermal Resistance	θ_{JC}	1.1	°C/W

TYPICAL DEVICE IMPEDANCE

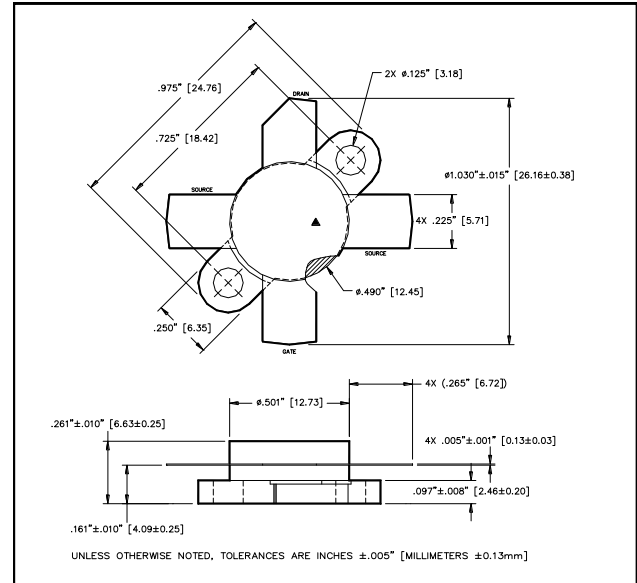
F (MHz)	Z_{IN} (Ω)	Z_{LOAD} (Ω)
30	9.0 - j4.0	6.0 + j0.0
50	6.0 - j5.8	5.0 + j2.0
100	4.0 - j4.2	4.0 + j3.0
200	1.0 - j1.0	2.0 + j1.9

$V_{DD} = 28V, I_{DQ} = 300mA, P_{OUT} = 60 W$

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



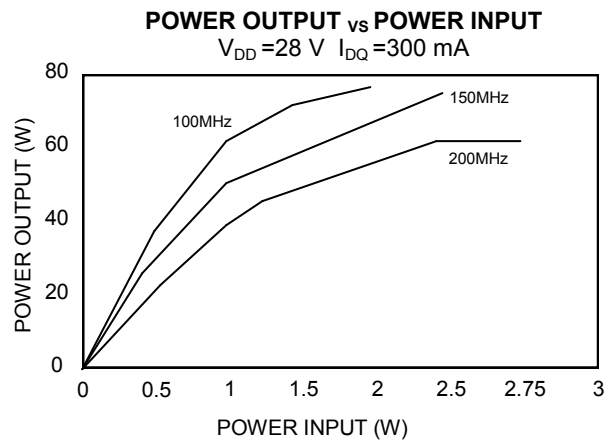
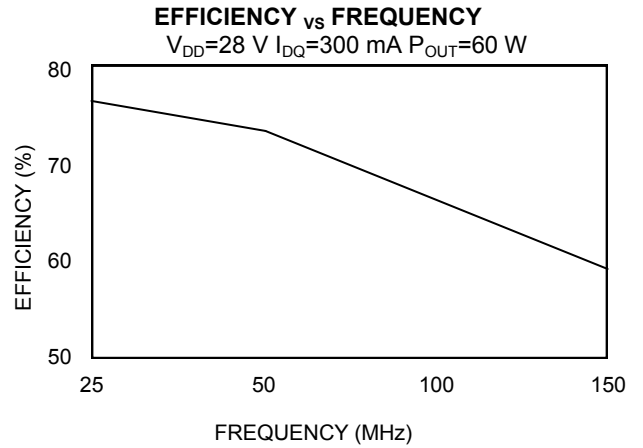
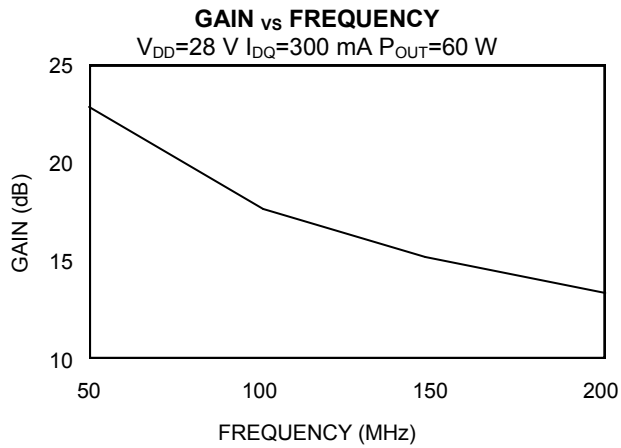
LETTER DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	24.64	24.89	.970	.980
B	18.29	18.54	.720	.730
C	25.96	26.42	1.020	1.040
D	12.60	12.85	.496	.506
E	6.22	6.48	.245	.255
F	5.59	5.84	.220	.230
G	3.05	3.30	.120	.130
H	2.21	2.59	.087	.102
J	3.91	4.42	.154	.174
K	6.53	7.34	.257	.289
L	.10	.15	.004	.006

ELECTRICAL CHARACTERISTICS AT 25°C

Parameter	Symbol	Min	Max	Units	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	65	-	V	$V_{GS} = 0.0 V, I_{DS} = 15.0 mA$
Drain-Source Leakage Current	I_{DSS}	-	3.0	mA	$V_{GS} = 28.0 V, V_{DS} = 0.0 V$
Gate-Source Leakage Current	I_{GSS}	-	3.0	μA	$V_{GS} = 20.0 V, V_{DS} = 0.0 V$
Gate Threshold Voltage	$V_{GS(TH)}$	2.0	6.0	V	$V_{DS} = 10.0 V, I_{DS} = 300.0 mA$
Forward Transconductance	G_M	1.5	-	S	$V_{DS} = 10.0 V, I_{DS} = 3.0 A, \Delta V_{GS} = 1.0V, 80 \mu s$ Pulse
Input Capacitance	C_{ISS}	-	135	pF	$V_{DS} = 28.0 V, F = 1.0 MHz$
Output Capacitance	C_{OSS}	-	120	pF	$V_{DS} = 28.0 V, F = 1.0 MHz$
Reverse Capacitance	C_{RSS}	-	24	pF	$V_{DS} = 28.0 V, F = 1.0 MHz$
Power Gain	G_P	13	-	dB	$V_{DD} = 28.0 V, I_{DQ} = 300 mA, P_{OUT} = 60.0 W F = 175 MHz$
Drain Efficiency	η_D	60	-	%	$V_{DD} = 28.0 V, I_{DQ} = 300 mA, P_{OUT} = 60.0 W F = 175 MHz$
Load Mismatch Tolerance	VSWR-T	-	30:1	-	$V_{DD} = 28.0 V, I_{DQ} = 300 mA, P_{OUT} = 60.0 W F = 175 MHz$

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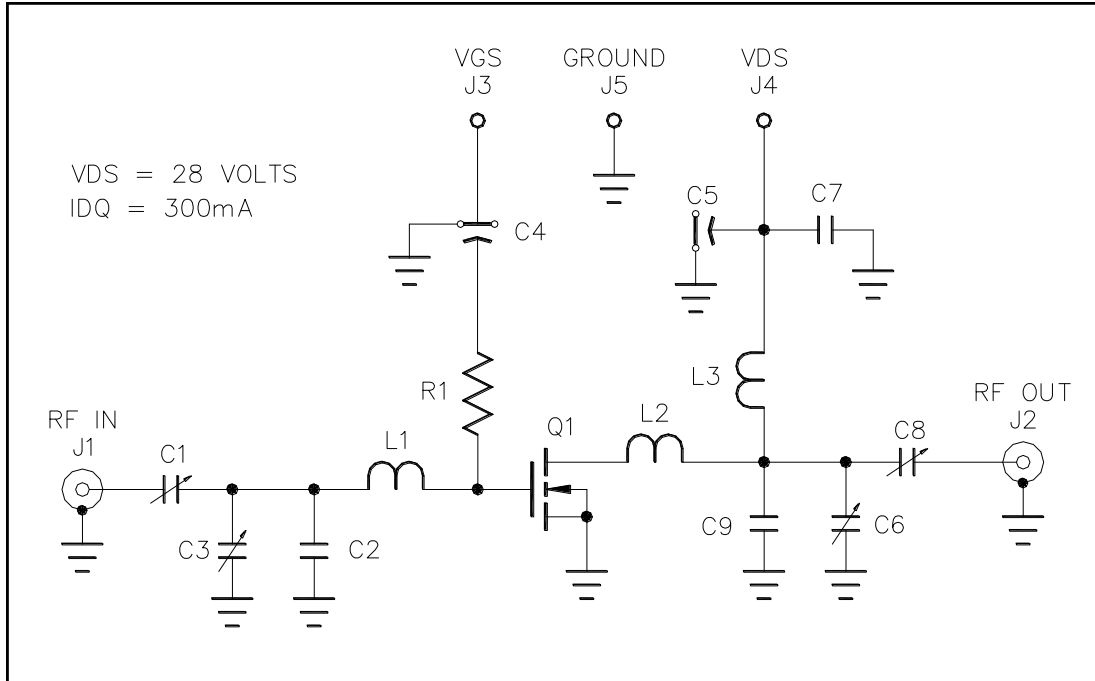
Typical Broadband Performance Curves



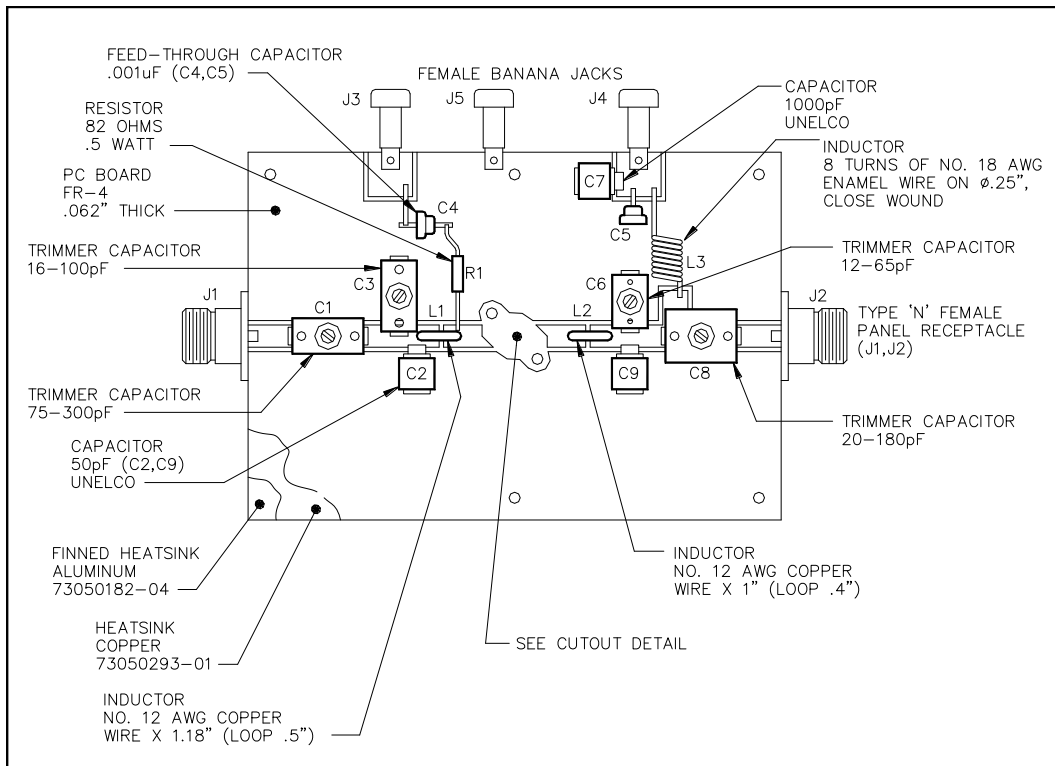
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TEST FIXTURE SCHEMATIC



TEST FIXTURE ASSEMBLY



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