DU2860T



RF Power MOSFET Transistor 60W, 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}	12	Α
Power Dissipation	P _D	159	W
Junction Temperature	TJ	200	°C
Storage Temperature	T _{STG}	-65 to +150	°C
Thermal Resistance	θ_{JC}	1.1	°C/W

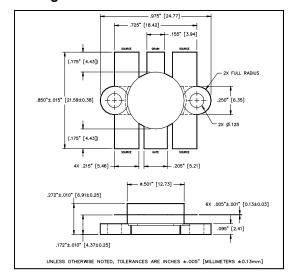
TYPICAL DEVICE IMPEDANCE

F (MHz)	Z _{IN} (Ω)	Z _{LOAD} (Ω)		
30	9.0 - j4.0	6.0 +j0.0		
50	10.0 - j6.5	5.0 + j2.0		
100	6.0 - j5.5	4.0 + j3.0		
200	1.1 - j3.0	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	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
Α	24.64	24.89	.970	.980
В	18.29	18.54	.720	.730
С	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
Н	5.08	5.33	.200	.210
J	3.05	3.30	.120	.130
К	2.29	2.29 2.54		.100
L	4.06	4.57	.160	.180
М	6.68	7.49	.263	.295
N	.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 _{GS} = 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 , Δ V_{GS} = 1.0V, 80 μ s Pulse
Input Capacitance	C _{ISS}	-	135	pF	V _{DS} = 28.0 V , F = 1.0 MHz
Output Capacitance	Coss	-	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 W F =175 MHz
Drain Efficiency	η _D	60	-	%	V _{DD} = 28.0 V, I _{DQ} = 300 mA, P _{OUT} = 60 W F =175 MHz
Load Mismatch Tolerance	VSWR-T	-	30:1	-	V _{DD} = 28.0 V, I _{DQ} = 300 mA, P _{OUT} = 60 W F =175 MHz

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology

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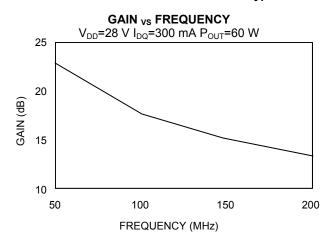
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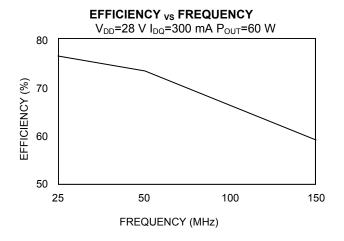


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Typical Broadband Performance Curves





POWER OUTPUT vs POWER INPUT $V_{DD} = 28 \text{ V } I_{DQ} = 300 \text{ mA}$ 80 150MHz POWER OUTPUT (W) 60 200MHz 40 20 0 0.5 1.5 2 2.5 2.75 3 POWER INPUT (W)

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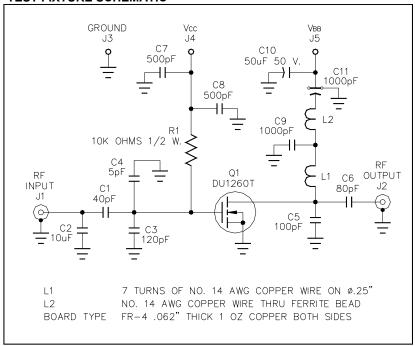
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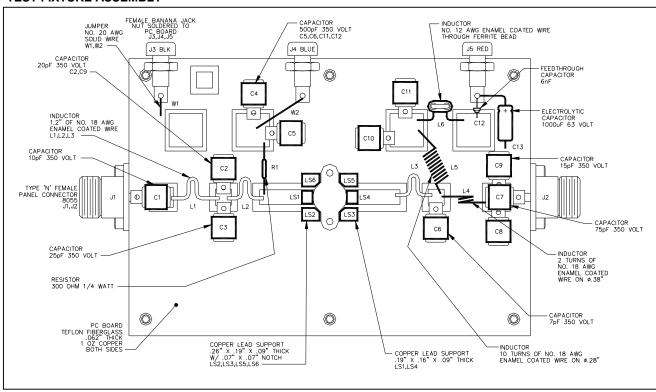
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TEST FIXTURE SCHEMATIC



TEST FIXTURE ASSEMBLY



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