DU28200M



RF Power MOSFET Transistor 200W, 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}	20	Α
Power Dissipation	P _D	389	W
Junction Temperature	TJ	200	°C
Storage Temperature	T _{STG}	-65 to +150	°C
Thermal Resistance	θ_{JC}	0.45	°C/W

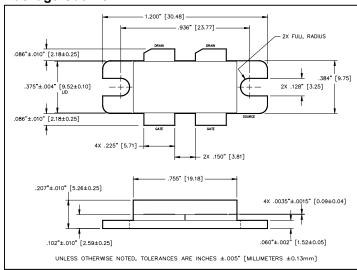
TYPICAL DEVICE IMPEDANCE

F (MHz)	Z _{IN} (Ω)	$Z_{LOAD}(\Omega)$		
30	2.7 - j4.8	7.2 - j1.9		
100	1.6 - j3.0	5.25 - j1.4		
150	1.5 - j2.0	5.0 - j0.7		
175	1.6 - j1.0	5.2 - j0.6		
200	1.8 - j0.5	5.5 - j0.5		
V _{DD} = 28V, I _{DQ} = 1000mA, P _{OUT} = 200 W				

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

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

Package Outline



LETTER	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
Α	30.35	30.61	1.195	1.205
В	23.65	23.90	.931	.941
С	13.72	14.22	.540	.560
D	9.63	9.88	.379	3.89
E	9.40	9.65	.370	.389
F	9.40	9.65	.370	.389
G	5.59	5.84	.220	.230
Н	18.80	19.30	.740	.760
J	9.40	9.65	.370	.380
К	3.12	3.38	.123	.133
L	1.47	1.57	.058	.062
М	2.39	2.74	.094	.108
N	5.03	5.69	.198	.224
Р	.05	.13	.002	.005

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} = 25.0 mA
Drain-Source Leakage Current	I _{DSS}	-	5.0	mA	V _{GS} = 28.0 V , V _{GS} = 0.0 V
Gate-Source Leakage Current	I _{GSS}	-	5.0	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} = 500.0 mA
Forward Transconductance	G _M	2.5	-	S	V_{DS} = 10.0 V , I_{DS} = 5.0A , Δ V_{GS} = 1.0V, 80 μ s Pulse
Input Capacitance	C _{ISS}	-	225	pF	V _{DS} = 28.0 V , F = 1.0 MHz
Output Capacitance	Coss	-	200	pF	V _{DS} = 28.0 V , F = 1.0 MHz
Reverse Capacitance	C _{RSS}	-	40	pF	V _{DS} = 28.0 V , F = 1.0 MHz
Power Gain	G _P	13	-	dB	V _{DD} = 28.0 V, I _{DQ} = 1000 mA, P _{OUT} = 200.0 W F =175 MHz
Drain Efficiency	ŋ _D	55	-	%	V _{DD} = 28.0 V, I _{DQ} = 1000 mA, P _{OUT} = 200.0 W F =175 MHz
Load Mismatch Tolerance	VSWR-T	-	10:1	-	V _{DD} = 28.0 V, I _{DQ} = 1000 mA, P _{OUT} = 200.0 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

PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

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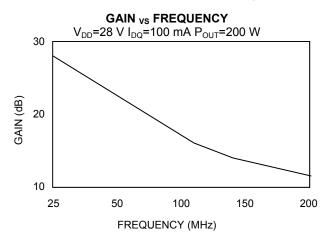
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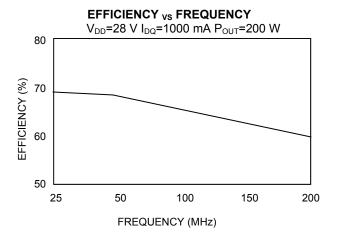


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Typical Broadband Performance Curves





POWER OUTPUT vs POWER INPUT $V_{DD} = 28 \text{ V } I_{DQ} = 600 \text{ mA}$ 300 100MHz 30MHz POWER OUTPUT (W) 250 175MHz 50 0.5 2 3 4 5 0 POWER INPUT (W)

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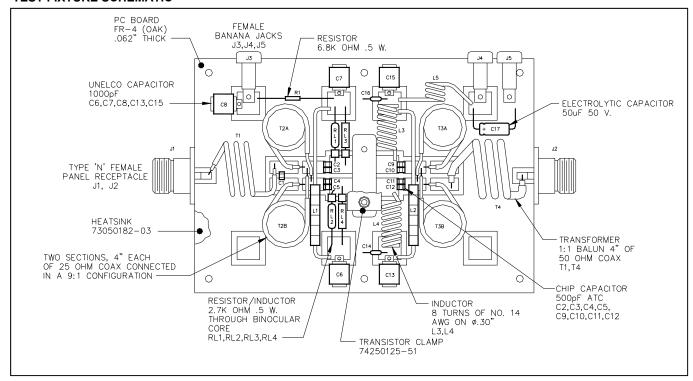
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TEST FIXTURE SCHEMATIC



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