DU2880V



RF Power MOSFET Transistor 80W, 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 competitive devices

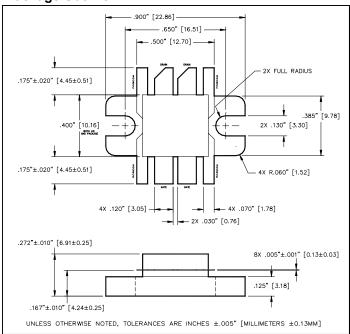
ABSOLUTE MAXIMUM RATINGS AT 25° C

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	65	V
Gate-Source Voltage	V _{GS}	20	V
Drain-Source Current	I _{DS}	8*	Α
Power Dissipation	P _D	206	W
Junction Temperature	TJ	200	°C
Storage Temperature	T _{STG}	-55 to +150	°C
Thermal Resistance	θ_{JC}	0.85	°C/W

TYPICAL DEVICE IMPEDANCE

F (MHz)	Z _{IN} (Ω)	Z _{LOAD} (Ω)			
30	4.5 - j14.5	13.5 +j4.5			
100	3.0 - j10.5	13.5 + j6.0			
175	2.0 - j7.5	12.0 + j4.5			
V_{DD} = 28V, I_{DQ} = 400mA, P_{OUT} = 80 W					

Package Outline



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} = 10.0 mA
Drain-Source Leakage Current	I _{DSS}	-	2.0	mA	$V_{GS} = 28.0 \text{ V}$, $V_{GS} = 0.0 \text{ V}$
Gate-Source Leakage Current	I _{GSS}	-	2.0	μA	$V_{GS} = 20.0 \text{ V}$, $V_{DS} = 0.0 \text{ V}$
Gate Threshold Voltage	$V_{GS(TH)}$	2.0	6.0	V	V _{DS} = 10.0 V , I _{DS} = 200.0 mA
Forward Transconductance	G_{M}	1.0	-	S	V_{DS} = 10.0 V , I_{DS} = 2000.00 mA , Δ V_{GS} = 1.0V, 80 μ s Pulse
Input Capacitance	C _{ISS}	-	90	pF	V _{DS} = 28.0 V , F = 1.0 MHz
Output Capacitance	Coss	-	80	pF	V _{DS} = 28.0 V , F = 1.0 MHz
Reverse Capacitance	C _{RSS}	-	16	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	ŋ _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

^{*}Per side

North America Tel: 800.366.2266 / Fax: 978.366.2266

Europe Tel: 44.1908.574.200 / Fax: 44.1908.574.300

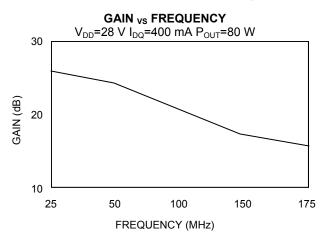
Asia/Pacific Tel: 81.44.844.8296 / Fax: 81.44.844.8298 Visit www.macomtech.com for additional data sheets and product information.

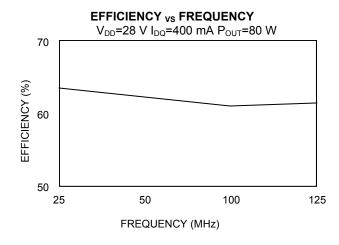


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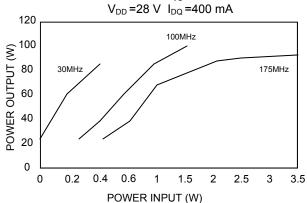
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Typical Broadband Performance Curves

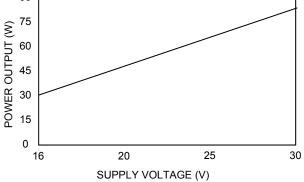




POWER OUTPUT vs POWER INPUT



POWER OUTPUT _{vs} SUPPLY VOLTAGE F=175MHz I_{DQ} =400 mA P_{IN} =1.5 W



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TEST FIXTURE ASSEMBLY VDS = 28 VOLTSIDQ = 400mATRIMMER CAPACITOR 1.5-20pF 02,03,04, TRIMMER CAPACITOR 5-80pF ELECTROLYTYIC CAPACITOR 100uF 50 VOLTS 0.50" X 0.10" TRACE ON BOARD + Ø0.125" X Ø0.25" LOOP 0.87" X 0.10" TRACE ON BOARD L3,L4 7.5 TURNS OF NO. 20 AWG COPPER WIRE X Ø0.31" R1 RESISTOR 18 DHMS 2 WATTS 50 DHM BALUN CORES, 2 TURNS OF 50 DHM COAX THRU 2 STACKPOLE 57-1522 4:1 TRANSFORMER 1 TURN OF 2 50 DHM CDAX IN T2,T3,T4 PARALLEL THRU 2 STACKPOLE 57-1522 BALUN CORES

FR4 0.062"

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