

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

### Features

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

#### ABSOLUTE MAXIMUM RATINGS AT 25° C

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V <sub>DS</sub>	65	V
Gate-Source Voltage	V <sub>GS</sub>	20	V
Drain-Source Current	I <sub>DS</sub>	8*	А
Power Dissipation	PD	206	W
Junction Temperature	TJ	200	°C
Storage Temperature	T <sub>STG</sub>	-55 to +150	°C
Thermal Resistance	θ <sub>JC</sub>	0.85	°C/W

### **TYPICAL DEVICE IMPEDANCE**

F (MHz)	Z <sub>IN</sub> (Ω)	Z <sub>LOAD</sub> (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					

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

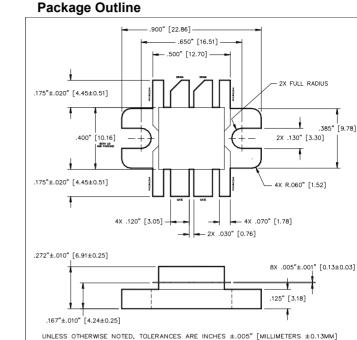
 $Z_{\mbox{\scriptsize LOAD}}$  is the optimum series equivalent load impedance as measured from drain to ground.

## **ELECTRICAL CHARACTERISTICS AT 25°C**

Parameter	Symbol	Min	Мах	Units	Test Conditions
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	65	-	V	V <sub>GS</sub> = 0.0 V , I <sub>DS</sub> = 10.0 mA
Drain-Source Leakage Current	I <sub>DSS</sub>	-	2.0	mA	$V_{GS}$ = 28.0 V , $V_{GS}$ = 0.0 V
Gate-Source Leakage Current	I <sub>GSS</sub>	-	2.0	μA	$V_{GS}$ = 20.0 V , $V_{DS}$ = 0.0 V
Gate Threshold Voltage	V <sub>GS(TH)</sub>	2.0	6.0	V	$V_{DS}$ = 10.0 V , I <sub>DS</sub> = 200.0 mA
Forward Transconductance	G <sub>M</sub>	1.0	-	S	$V_{\text{DS}}$ = 10.0 V , $I_{\text{DS}}$ = 2000.00 mA , $\Delta$ $V_{\text{GS}}$ = 1.0V, 80 $\mu s$ Pulse
Input Capacitance	C <sub>ISS</sub>	-	90	pF	V <sub>DS</sub> = 28.0 V , F = 1.0 MHz
Output Capacitance	C <sub>oss</sub>	-	80	pF	V <sub>DS</sub> = 28.0 V , F = 1.0 MHz
Reverse Capacitance	C <sub>RSS</sub>	-	16	pF	V <sub>DS</sub> = 28.0 V , F = 1.0 MHz
Power Gain	G <sub>P</sub>	13	-	dB	$V_{DD}$ = 28.0 V, $I_{DQ}$ = 400 mA, $P_{OUT}$ = 80.0 W F =175 MHz
Drain Efficiency	ŋ₀	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 <sub>DD</sub> = 28.0 V, I <sub>DQ</sub> = 400 mA, P <sub>OUT</sub> = 80.0 W F =175 MHz

1 \*Per side

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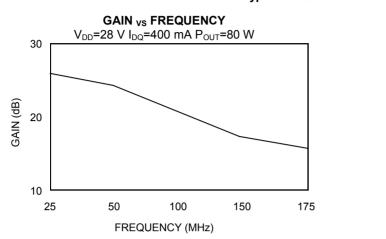
Rev. V1



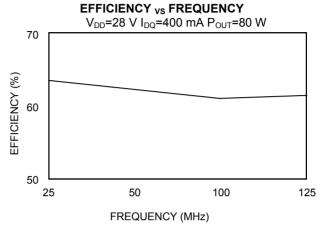


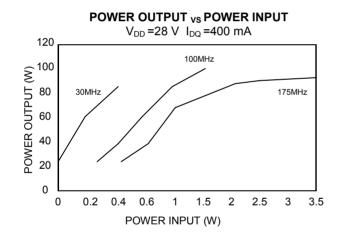
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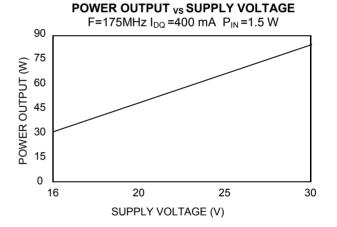
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#### **Typical Broadband Performance Curves**





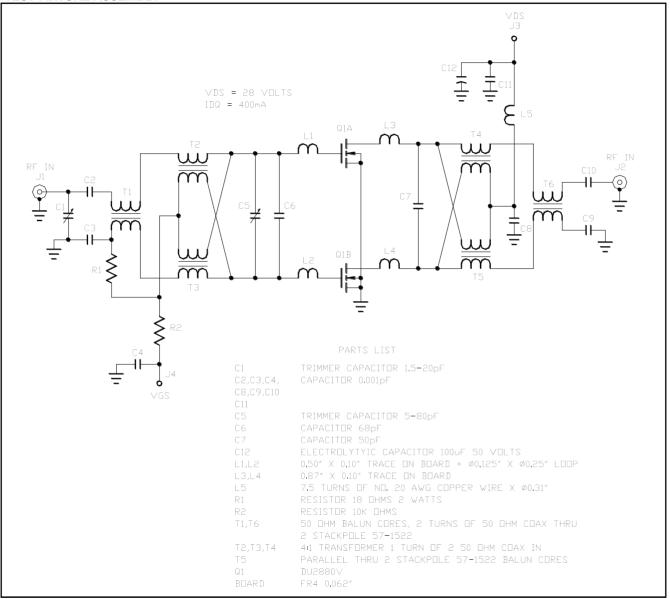


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# DU2880V

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#### TEST FIXTURE ASSEMBLY



Rev. V1





# DU2880V

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Rev. V1

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