

RF Power MOSFET Transistor 20W, 100-500 MHz, 28V

Rev. V1

Features

- N-channel enhancement mode device
- DMOS structure
- · Lower capacitances for broadband operation
- Common source configuration
- Lower noise floor

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}	2.8	Α
Power Dissipation	P _D	53	W
Junction Temperature	TJ	200	°C
Storage Temperature	T _{STG}	-55 to 150	°C
Thermal Resistance	θ_{JC}	3.3	°C/W

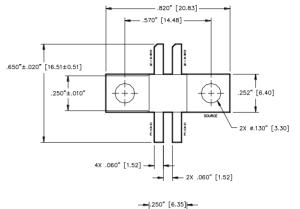
TYPICAL DEVICE IMPEDANCES

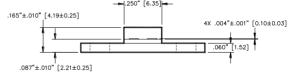
F (MHz)	Z _{IN} (Ω)	Z _{LOAD} (Ω)			
100	9.5-j60.0	4.0+j68.0			
300	5.0-j35.0	40.0+j48.0			
500	2.0-j22.0	36.0+j34.0			
V _{DD} =28V, I _{DQ} =200 mA, P _{OUT} =20.0 W					

 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





UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES $\pm .005$ " [MILLIMETERS ± 0.13 mm]

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} = 4.0 mA
Drain-Source Leakage Current	I _{DSS}	-	2.0	mA	V _{GS} = 28.0 V , V _{GS} = 0.0 V
Gate-Source Leakage Current	I _{GSS}	-	2.0	μΑ	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} = 200.0 mA
Forward Transconductance	G _M	.160	-	S	V_{DS} = 10.0 V , I_{DS} 200.0 mA , Δ V_{GS} = 1.0V, 80 μs Pulse
Input Capacitance	C _{ISS}	-	14	pF	V _{DS} = 28.0 V , F = 1.0 MHz
Output Capacitance	Coss	-	10	pF	V _{DS} = 28.0 V , F = 1.0 MHz
Reverse Capacitance	C _{RSS}	-	4.8	pF	V _{DS} = 28.0 V , F = 1.0 MHz
Power Gain	G _P	10	-	dB	V _{DD} = 28.0 V, I _{DQ} = 200.0 mA, P _{OUT} = 20.0 W F =500 MHz
Drain Efficiency	ŋ _D	50	-	%	V _{DD} = 28.0 V, I _{DQ} = 200.0 mA, P _{OUT} = 20.0 W F =500 MHz
Load Mismatch Tolerance	VSWR-T	-	20:1	-	V _{DD} = 28.0 V, I _{DQ} = 200.0 mA, P _{OUT} = 20.0 W F =500 MHz

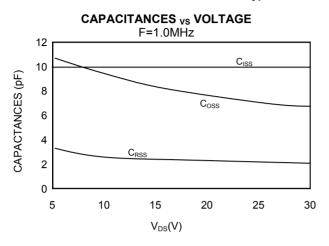
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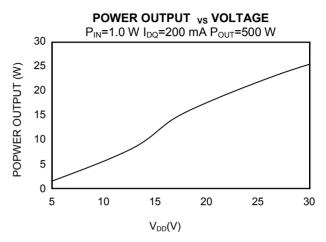


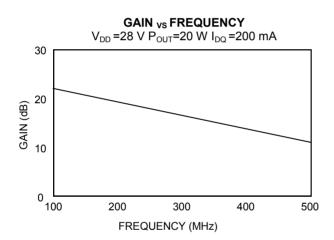
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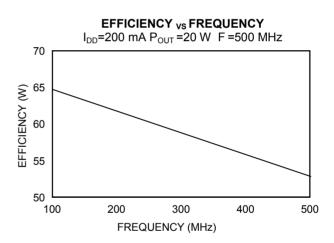
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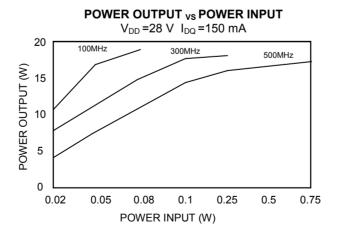
Typical Broadband Performance Curves









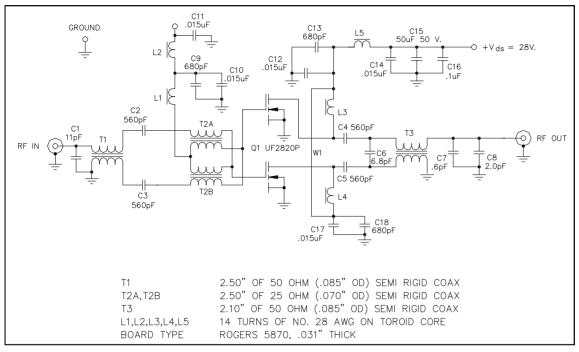




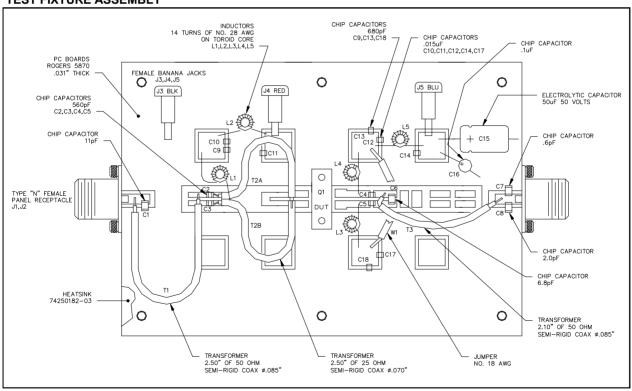
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TEST FIXTURE SCHEMATIC



TEST FIXTURE ASSEMBLY



UF2820P



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