

RF Power MOSFET Transistor 40W, 100-500 MHz, 28V

Rev. V1

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}	4*	Α
Power Dissipation	P _D	116	W
Junction Temperature	TJ	200	°C
Storage Temperature	T _{STG}	-55 to 150	°C
Thermal Resistance	θ_{JC}	1.52	°C/W

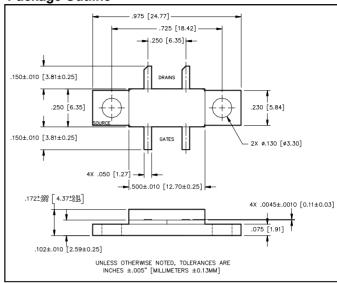
TYPICAL DEVICE IMPEDANCES

F (MHz)	Z _{IN} (Ω)	Z _{LOAD} (Ω)		
100	6.0-j20.0	12.0+j6.0		
200	3.5-j11.5	16.5+j19.5		
300	2.5-j5.5	13.0j13.0		
400	3.0+j0.0	12.0+j9.0		
500	4.0+j3.0	+12.0j5.0		
V _{DD} =28V, I _{DQ} =500 mA, P _{OUT} =40.0 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



FLECTRICAL CHARACTERISTICS AT 25°C

Parameter	Symbol	Min	Max	Units	Test Conditions
Drain-Source Breakdown Voltage	BV _{DSS}	65	-	V	$V_{GS} = 0.0 \text{ V}$, $I_{DS} = 5.0 \text{ mA}$
Drain-Source Leakage Current	I _{DSS}	-	1.0	mA	V _{GS} = 28.0 V , V _{GS} = 0.0 V
Gate-Source Leakage Current	I _{GSS}	-	1.0	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} = 100.0 mA
Forward Transconductance	G _M	.500	-	S	V_{DS} = 10.0 V , I_{DS} 1.0 A , Δ V_{GS} = 1.0V, 80 μ s Pulse
Input Capacitance	C _{ISS}	-	45	pF	V _{DS} = 28.0 V , F = 1.0 MHz
Output Capacitance	Coss	-	30	pF	V _{DS} = 28.0 V , F = 1.0 MHz
Reverse Capacitance	C _{RSS}	-	8	pF	V _{DS} = 28.0 V , F = 1.0 MHz
Power Gain	G _P	10	-	dB	V _{DD} = 28.0 V, I _{DQ} = 500.0 mA, P _{OUT} = 40.0 W F =500 MHz
Drain Efficiency	ŋ _D	50	-	%	V _{DD} = 28.0 V, I _{DQ} = 500.0 mA, P _{OUT} = 40.0 W F =500 MHz
Load Mismatch Tolerance	VSWR-T	-	30:1	-	$V_{DD} = 28.0 \text{ V}, I_{DO} = 500.0 \text{ mA}, P_{OUT} = 40.0 \text{ W F} = 500 \text{ MHz}$

^{*}Per side

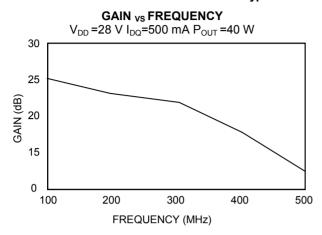
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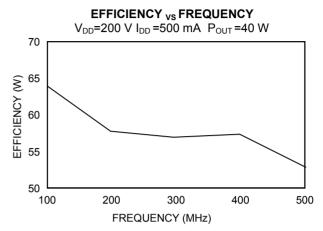


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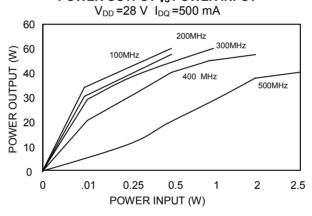
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Typical Broadband Performance Curves





POWER OUTPUT _{VS} POWER INPUT

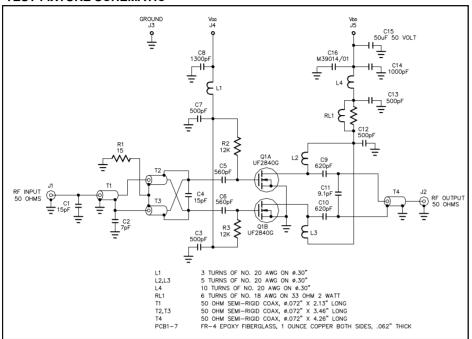




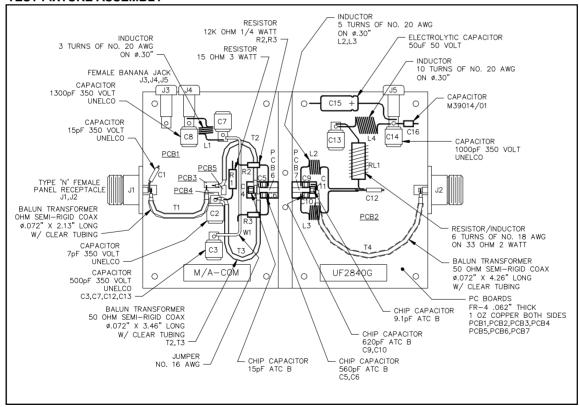
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TEST FIXTURE SCHEMATIC



TEST FIXTURE ASSEMBLY



UF2840G



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