

RF Power MOSFET Transistor 5W, 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
- 100 MHz to 500 MHz operation

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}	1.4	Α
Power Dissipation	P _D	14.4	W
Junction Temperature	TJ	200	°C
Storage Temperature	T _{STG}	-55 to +150	°C
Thermal Resistance	θ_{JC}	12.1	°C/W

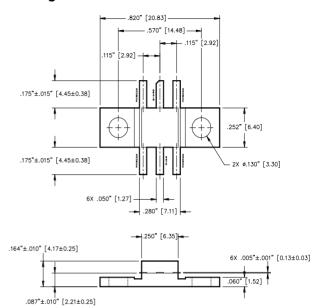
TYPICAL DEVICE IMPEDANCES

F (MHz)	Z _{IN} (Ω)	Z _{LOAD} (Ω)			
100	15.0-j8.0	35.0+j55.0			
300	8.0-j43.0	29.0+j40.0			
500	4.0-j29.0	28.0-j29.0			
V _{DD} =28V, I _{DQ} =50 Ma, P _{OUT} =100.0 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 drain.

Package Outline



UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES ±.005" [MILLIMETERS ±0.13MM]

FLECTRICAL CHARACTERISTICS AT 25°C

Parameter	Symbol	Min	Max	Units	Test Conditions
Drain-Source Breakdown Voltage	BV _{DSS}	65	-	V	$V_{GS} = 0.0 \text{ V}$, $I_{DS} = 2.0 \text{ mA}$
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	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} = 10.0 mA
Forward Transconductance	G _M	80	-	S	V_{DS} = 10.0 V , I_{DS} 1.0 mA , Δ V_{GS} = 1.0V, 80 μ s Pulse
Input Capacitance	C _{ISS}	-	7.0	pF	V _{DS} = 28.0 V , F = 1.0 MHz
Output Capacitance	Coss	-	5	pF	V _{DS} = 28.0 V , F = 1.0 MHz
Reverse Capacitance	C _{RSS}	-	2.4	pF	V _{DS} = 28.0 V , F = 1.0 MHz
Power Gain	G _P	10	-	dB	V_{DD} = 28.0 V, I_{DQ} = 50 mA, P_{OUT} = 5.0 W F =500 MHz
Drain Efficiency	ŋ _D	50	-	%	V_{DD} = 28.0 V, I_{DQ} = 50 mA, P_{OUT} = 5.0 W F =500 MHz
Load Mismatch Tolerance	VSWR-T	-	20:1	-	$V_{DD} = 28.0 \text{ V}, I_{DQ} = 50 \text{ mA}, P_{OUT} = 5.0 \text{ W F} = 500 \text{MHz}$

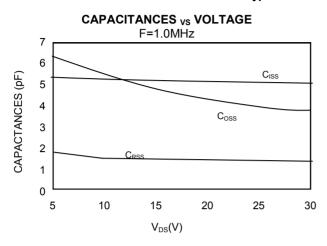
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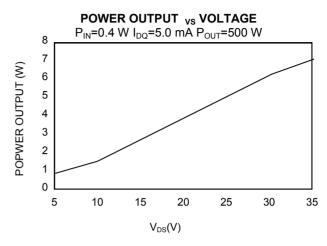


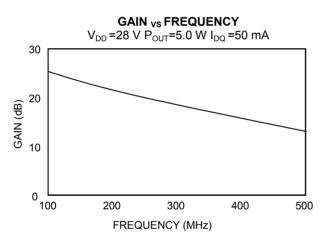
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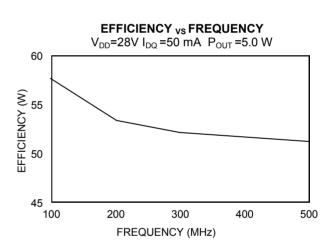
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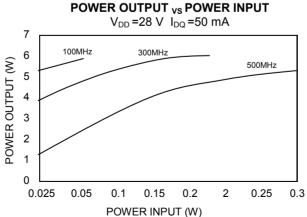
Typical Broadband Performance Curves









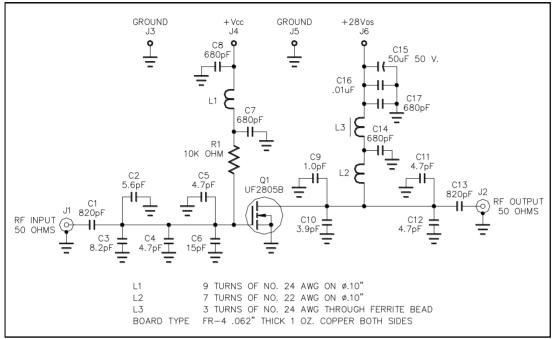




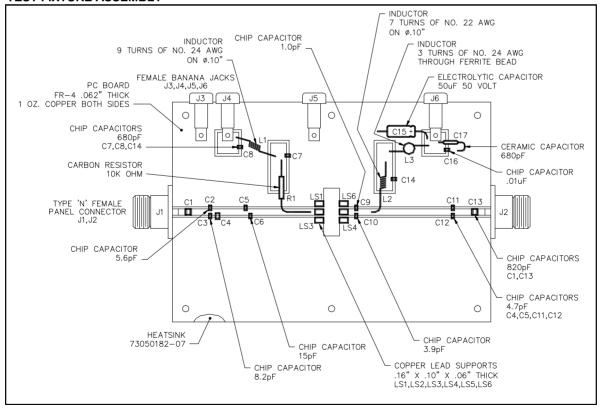
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TEST FIXTURE SCHEMATIC



TEST FIXTURE ASSEMBLY



UF2805B



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