

RF Power MOSFET Transistor
10W, 100-500 MHz, 28V
M/A-COM Products
Released; RoHS Compliant
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*	A
Power Dissipation	P_D	26.9	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-55 to +150	°C
Thermal Resistance	θ_{JC}	6.5	°C/W

TYPICAL DEVICE IMPEDANCES

F (MHz)	Z_{IN} (Ω)	Z_{LOAD} (Ω)
100	30.0-j150.0	70.0+j110.0
300	15.0-j90.0	55.0+j80.0
500	4.2-j46.0	48.0+j50.0

 $V_{DD}=28V, I_{DQ}=100\text{ mA}, P_{OUT}=10.0\text{ W}$

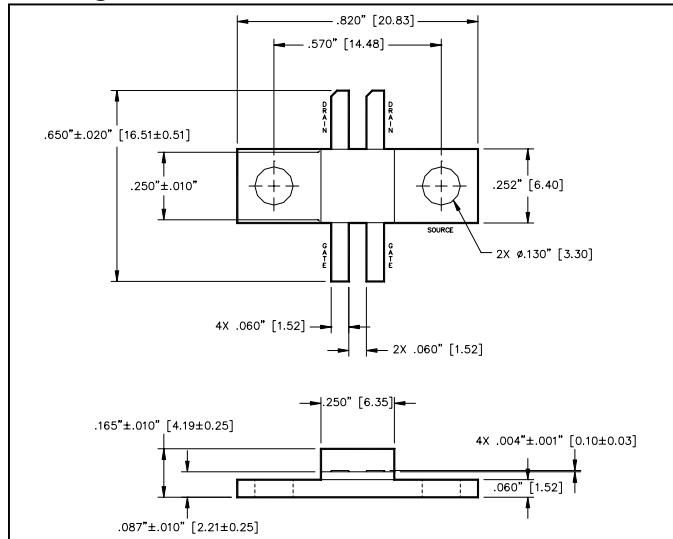
Z_{IN} is the series equivalent input impedance of the device from gate to gate.

Z_{LOAD} is the optimum series equivalent load impedance as measured from drain to drain.

ELECTRICAL 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	$V_{GS} = 28.0\text{ V}, V_{DS} = 0.0\text{ V}$
Gate-Source Leakage Current	I_{GSS}	-	1.0	μA	$V_{GS} = 20.0\text{ V}, V_{DS} = 0.0\text{ V}$
Gate Threshold Voltage	$V_{GS(TH)}$	2.0	6.0	V	$V_{DS} = 10.0\text{ V}, I_{DS} = 10.0\text{ mA}$
Forward Transconductance	G_M	80	-	S	$V_{DS} = 10.0\text{ V}, I_{DS} 100.0\text{ mA}, \Delta V_{GS} = 1.0\text{ V}, 80\text{ μs Pulse}$
Input Capacitance	C_{ISS}	-	7	pF	$V_{DS} = 28.0\text{ V}, F = 1.0\text{ MHz}$
Output Capacitance	C_{OSS}	-	5	pF	$V_{DS} = 28.0\text{ V}, F = 1.0\text{ MHz}$
Reverse Capacitance	C_{RSS}	-	2.4	pF	$V_{DS} = 28.0\text{ V}, F = 1.0\text{ MHz}$
Power Gain	G_P	10	-	dB	$V_{DD} = 28.0\text{ V}, I_{DQ} = 100.0\text{ mA}, P_{OUT} = 50.0\text{ W} F = 500\text{ MHz}$
Drain Efficiency	η_D	50	-	%	$V_{DD} = 28.0\text{ V}, I_{DQ} = 100.0\text{ mA}, P_{OUT} = 50.0\text{ W} F = 500\text{ MHz}$
Load Mismatch Tolerance	VSWR-T	-	20:1	-	$V_{DD} = 28.0\text{ V}, I_{DQ} = 100.0\text{ mA}, P_{OUT} = 50.0\text{ W} F = 500\text{ MHz}$

*Per side

Package Outline

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

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

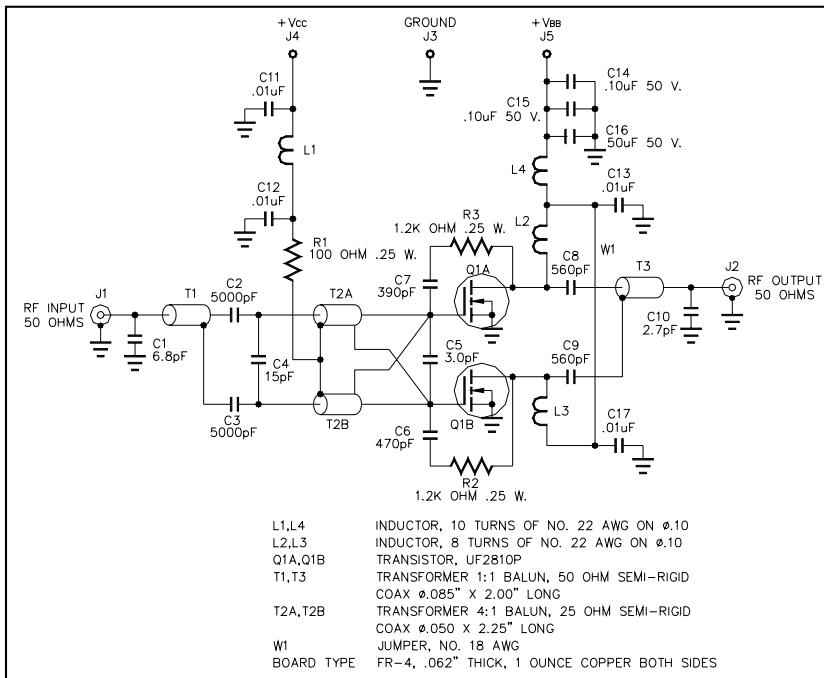
PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

• **North America** Tel: 800.366.2266 / Fax: 978.366.2266
 • **Europe** Tel: 44.1908.574.200 / Fax: 44.1908.574.300

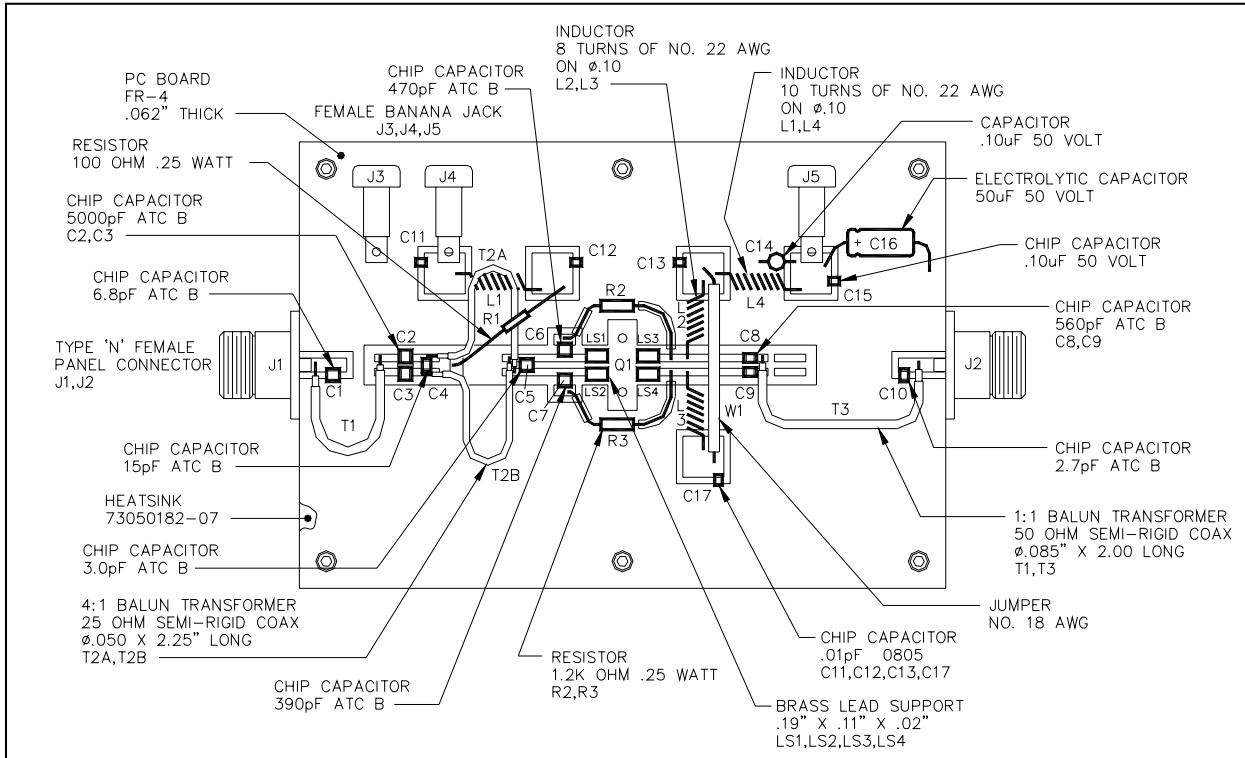
• **Asia/Pacific** Tel: 81.44.844.8296 / Fax: 81.44.844.8298

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TEST FIXTURE SCHEMATIC

L1,L4
 L2,L3
 Q1A,Q1B
 T1,T3
 TRANSISTOR, UF2810P
 T1,T2
 TRANSFORMER 1:1 BALUN, 50 OHM SEMI-RIGID
 COAX ϕ .085" X 2.00" LONG
 T2A,T2B
 TRANSFORMER 4:1 BALUN, 25 OHM SEMI-RIGID
 COAX ϕ .050 X 2.25" LONG
 W1
 JUMPER, NO. 18 AWG
 BOARD TYPE FR-4, .062" THICK, 1 OUNCE COPPER BOTH SIDES

TEST FIXTURE ASSEMBLY

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