# **UF2840P**



# RF Power MOSFET Transistor 40W, 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

#### **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 <sub>DS</sub>	4*	Α
Power Dissipation	P <sub>D</sub>	116	W
Junction Temperature	TJ	200	°C
Storage Temperature	T <sub>STG</sub>	-55 to 150	°C
Thermal Resistance	$\theta_{JC}$	1.5	°C/W

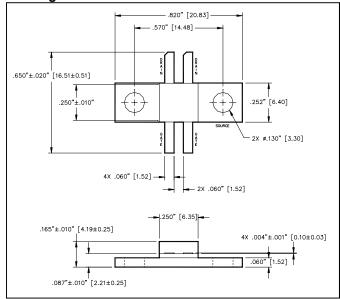
### **TYPICAL DEVICE IMPEDANCES**

F (MHz)	Z <sub>IN</sub> (Ω)	Z <sub>LOAD</sub> (Ω)			
100	6.0-j20.0	25.0j27.0			
300	2.5-j5.5	13.0+j13.0			
500	4.0+j3.0	12.0j5.0			
V <sub>DD</sub> =28V, I <sub>DQ</sub> =500 mA, P <sub>OUT</sub> =40.0 W					

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

Z<sub>LOAD</sub> is the optimum series equivalent load impedance as measured from drain to ground.

# **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 <sub>DSS</sub>	65	-	V	$V_{GS} = 0.0 \text{ V}$ , $I_{DS} = 5.0 \text{ mA}$
Drain-Source Leakage Current	I <sub>DSS</sub>	-	1.0	mA	V <sub>GS</sub> = 28.0 V , V <sub>GS</sub> = 0.0 V
Gate-Source Leakage Current	I <sub>GSS</sub>	-	1.0	μA	V <sub>GS</sub> = 20.0 V , V <sub>DS</sub> = 0.0 V
Gate Threshold Voltage	V <sub>GS(TH)</sub>	2.0	6.0	V	V <sub>DS</sub> = 10.0 V , I <sub>DS</sub> = 100.0 mA
Forward Transconductance	G <sub>M</sub>	.5	-	S	$V_{DS}$ = 10.0 V , $I_{DS}$ 1.0 A , $\Delta$ $V_{GS}$ = 1.0V, 80 $\mu$ s Pulse
Input Capacitance	C <sub>ISS</sub>	-	45	pF	V <sub>DS</sub> = 28.0 V , F = 1.0 MHz
Output Capacitance	Coss	-	30	pF	V <sub>DS</sub> = 28.0 V , F = 1.0 MHz
Reverse Capacitance	C <sub>RSS</sub>	-	8	pF	V <sub>DS</sub> = 28.0 V , F = 1.0 MHz
Power Gain	G <sub>P</sub>	10	-	dB	V <sub>DD</sub> = 28.0 V, I <sub>DQ</sub> = 500.0 mA, P <sub>OUT</sub> = 40.0 W F =500 MHz
Drain Efficiency	ŋ <sub>D</sub>	50	-	%	V <sub>DD</sub> = 28.0 V, I <sub>DQ</sub> = 500.0 mA, P <sub>OUT</sub> = 40.0 W F =500 MHz
Load Mismatch Tolerance	VSWR-T	-	20:1	-	$V_{DD} = 28.0 \text{ V}, I_{DQ} = 500.0 \text{ mA}, P_{OUT} = 40.0 \text{ W F} = 500 \text{ MHz}$

<sup>\*</sup>Per side

Commitment to produce in volume is not guar

**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.

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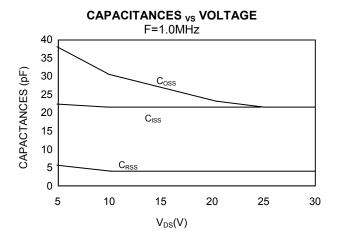
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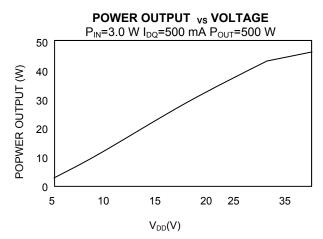


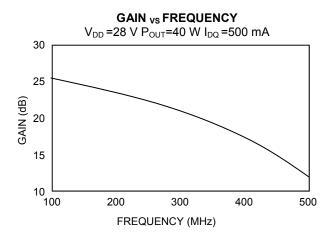
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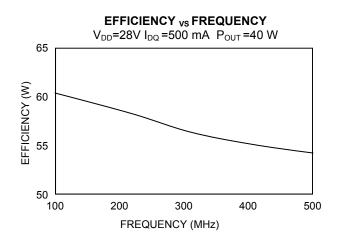
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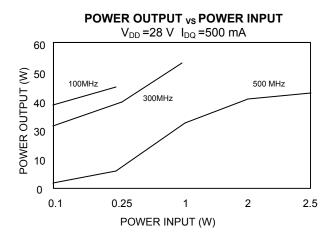
## **Typical Broadband Performance Curves**











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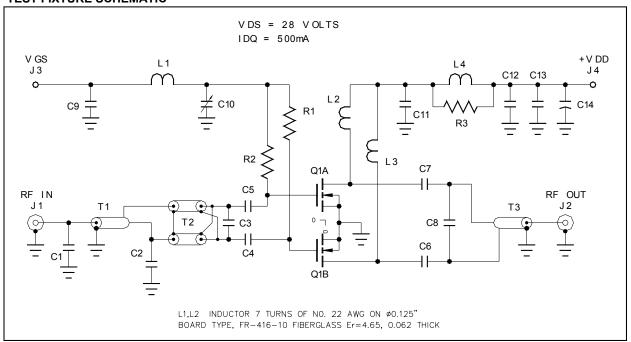
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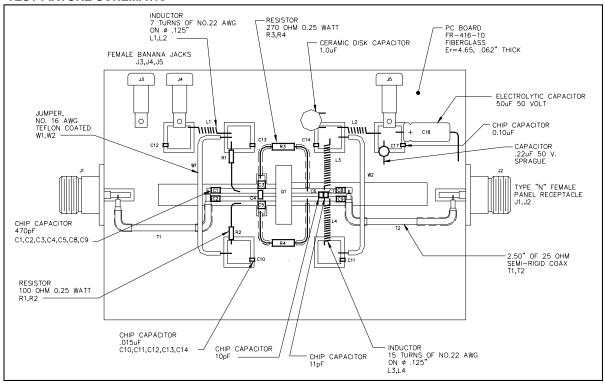
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# **TEST FIXTURE SCHEMATIC**



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