Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

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UF28100H

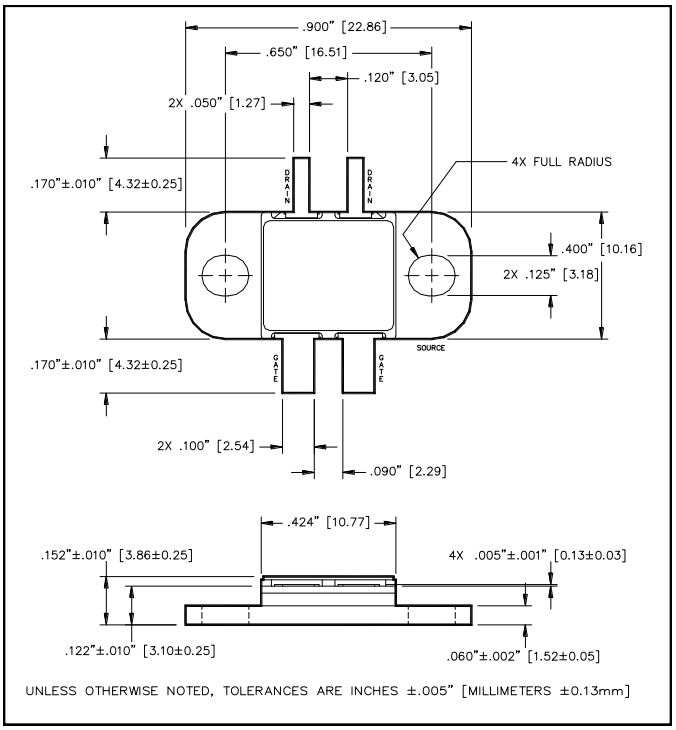
RF Power MOSFET Transistor
100W, 100-500 MHz, 28V

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
- RoHS Compliant

PACKAGE OUTLINE



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}	12*	A
Power Dissipation	P_D	250	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-55 to +150	°C
Thermal Resistance	θ_{JC}	0.7	°C/W

TYPICAL DEVICE IMPEDANCES

F (MHz)	Z_{IN} (Ω)	Z_{LOAD} (Ω)
100	4.5-j6.0	14.5+j0.5
300	2.25-j1.75	7.5j1.0
500	1.5+j5.5	3.5+j3.5
V_{DD}=28V, I_{DQ}=600 Ma, P_{OUT} =100.0 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

ELECTRICAL CHARACTERISTICS AT 25°C

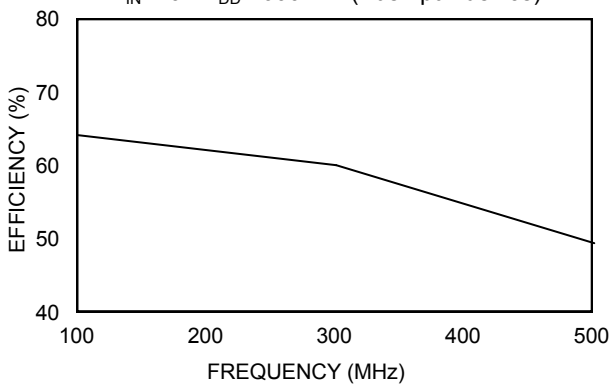
Parameter	Symbol	Min	Max	Units	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	65	-	V	V_{GS} = 0.0 V , I_{DS} = 15.0 mA
Drain-Source Leakage Current	I_{DSS}	-	3.0	mA	V_{GS} = 28.0 V , V_{GS} = 0.0 V
Gate-Source Leakage Current	I_{GSS}	-	3.0	µA	V_{GS} = 20.0 V , V_{DS} = 0.0 V
Gate Threshold Voltage	$V_{GS(TH)}$	2.0	6.0	V	V_{DS} = 10.0 V , I_{DS} = 300.0 mA
Forward Transconductance	G_M	1.5	-	S	V_{DS} = 10.0 V , I_{DS} 3000.0 mA , Δ V_{GS} = 1.0V, 80 µs Pulse
Input Capacitance	C_{ISS}	-	135	pF	V_{DS} = 28.0 V , F = 1.0 MHz
Output Capacitance	C_{OSS}	-	90	pF	V_{DS} = 28.0 V , F = 1.0 MHz
Reverse Capacitance	C_{RSS}	-	24	pF	V_{DS} = 28.0 V , F = 1.0 MHz
Power Gain	G_P	10	-	dB	V_{DD} = 28.0 V, I_{DQ} = 600.0 mA, P_{OUT} = 100.0 W F =500 MHz
Drain Efficiency	η_D	50	-	%	V_{DD} = 28.0 V, I_{DQ} = 600.0 mA, P_{OUT} = 100.0 W F =500 MHz
Return Loss	R_L	10	-	dB	V_{DD} = 28.0 V, I_{DQ} = 600.0 mA, P_{OUT} = 100.0 W F =500 MHz
Load Mismatch Tolerance	VSWR-T	-	30:1	-	V_{DD} = 28.0 V, I_{DQ} = 600.0 mA, P_{OUT} = 100.0 W F =500 MHz

*Per side

Typical Broadband Performance Curves

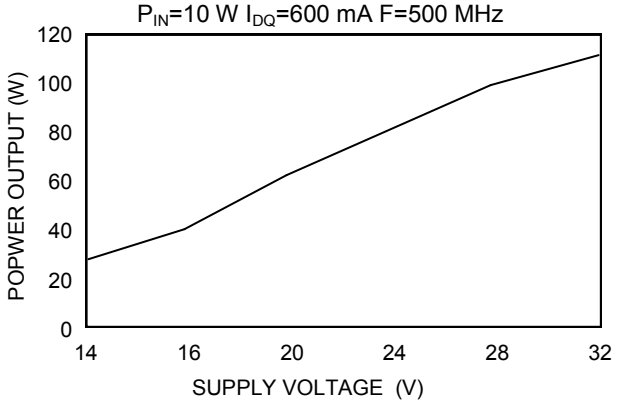
EFFICIENCY vs FREQUENCY

P_{IN}=10W I_{DD} =600 mA (Push pull device)



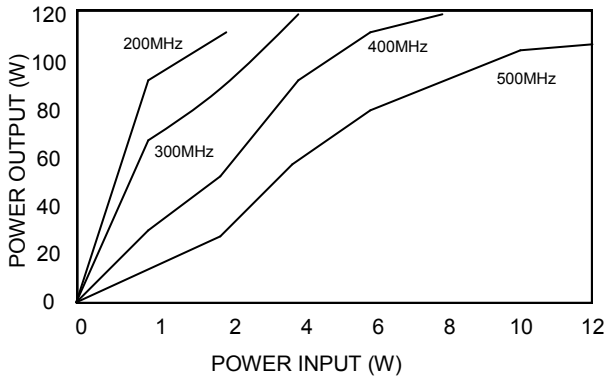
POWER OUTPUT vs SUPPLY VOLTAGE

P_{IN}=10 W I_{DQ}=600 mA F=500 MHz



POWER OUTPUT vs POWER INPUT

V_{DD} =28 V I_{DQ} =600 mA (Push pull device)



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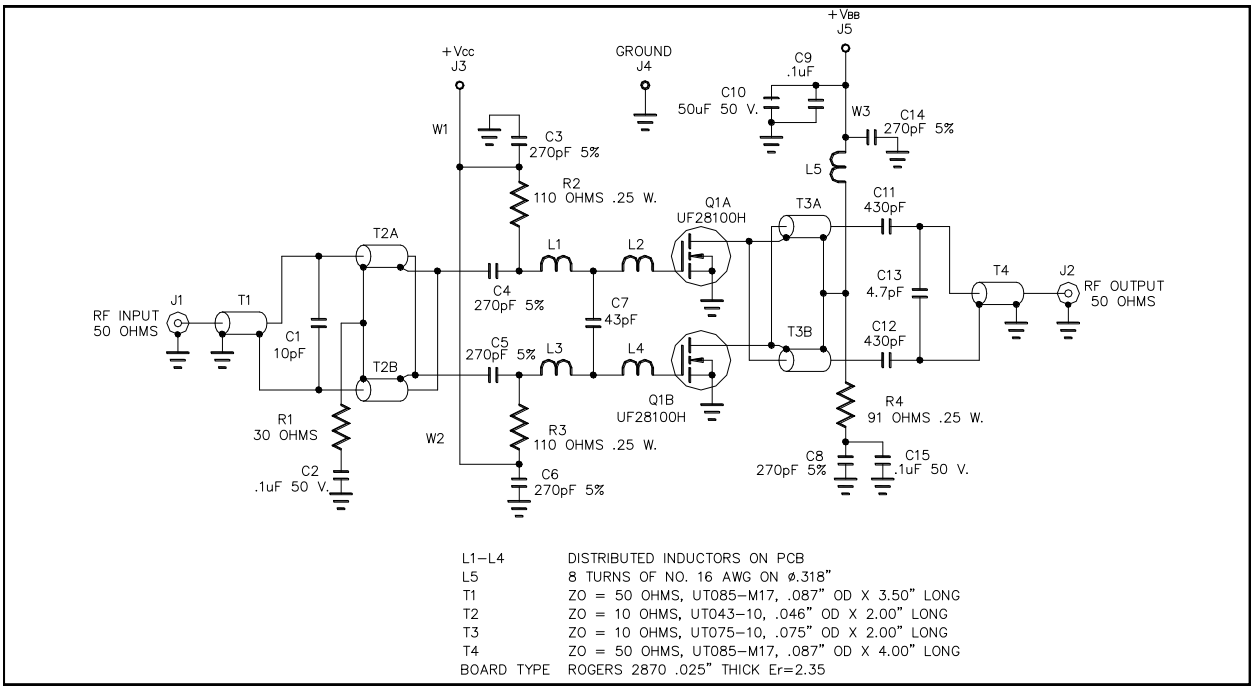
TEST FIXTURE SCHEMATIC



L1–L4	DISTRIBUTED INDUCTORS ON PCB
L5	8 TURNS OF NO. 16 AWG ON ø.318"
T1	ZO = 50 OHMS, UT085–M17, .087" OD X 3.50" LONG
T2	ZO = 10 OHMS, UT043–10, .046" OD X 2.00" LONG
T3	ZO = 10 OHMS, UT075–10, .075" OD X 2.00" LONG
T4	ZO = 50 OHMS, UT085–M17, .087" OD X 4.00" LONG
BOARD TYPE	ROGERS 2870 .025" THICK Er=2.35

TEST FIXTURE ASSEMBLY