LF2810A

M/A-COM Technology Solutions

RF Power MOSFET Transistor
10W, 500-1000MHz, 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
- Applications
  Broadband linear operation
  500 MHz to 1200 MHz

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}	2.8	A
Power Dissipation	P_D	26.5	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-55 to +150	°C
Thermal Resistance	θ_{JC}	6.6	°C/W

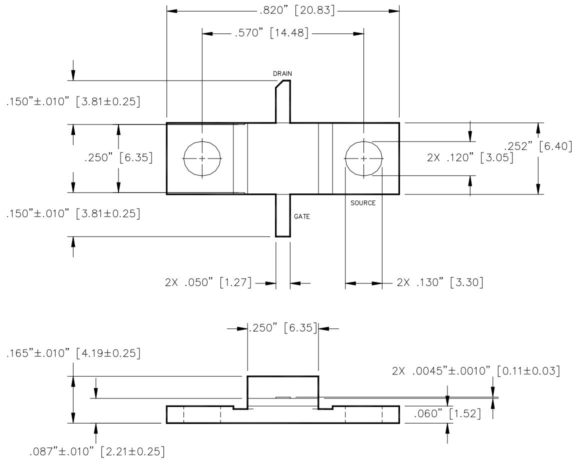
TYPICAL DEVICE IMPEDANCE

F (MHz)	Z_{IN} (Ω)	Z_{LOAD} (Ω)
500	0.60 - j9.5	10.0 +j17.0
1000	1.4 - j1.0	4.85 + j7.9
1200	1.5 - j3.5	5.7 + j5.7
V_{DD} = 28V, I_{DQ} = 100 mA, P_{OUT} = 10 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



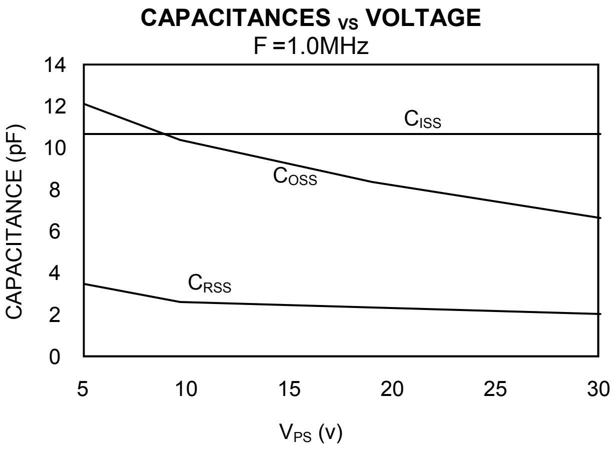
UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES ±.005" [MILLIMETERS ±0.13mm]

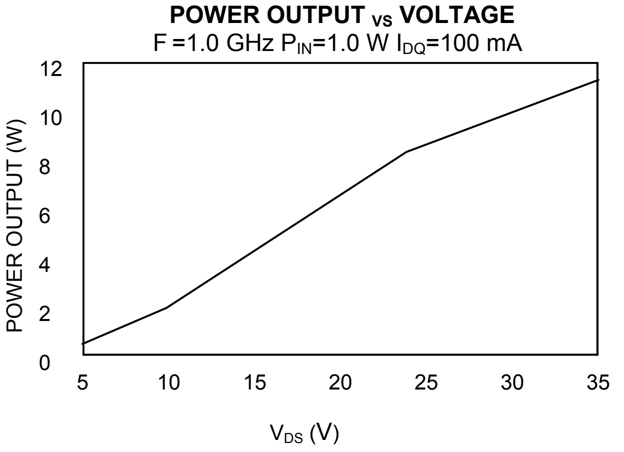
LETTER	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	20.70	20.96	.815	.825
B	14.35	14.61	.565	.575
C	13.72	14.22	.540	.560
D	6.27	6.53	.247	.257
E	6.22	6.48	.245	.255
F	6.22	6.48	.245	.255
G	1.14	1.40	.045	.055
H	2.92	3.18	.115	.125
J	1.40	1.65	.055	.065
K	1.96	2.46	.077	.097
L	3.61	4.37	.142	.172
M	.08	.15	.003	.006

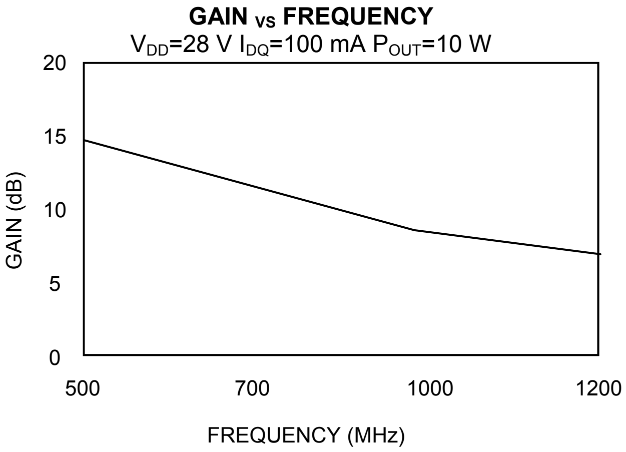
ELECTRICAL CHARACTERISTICS AT 25°C

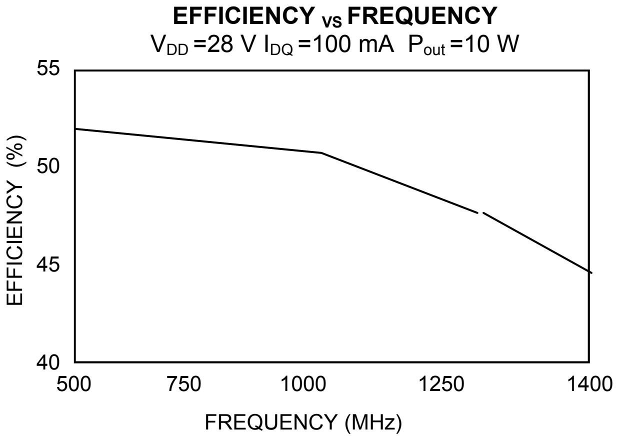
Parameter	Symbol	Min	Max	Units	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	65	-	V	V_{GS} = 0.0 V , I_{DS} = 4.0 mA
Drain-Source Leakage Current	I_{DSS}	-	2.0	mA	V_{GS} = 28.0 V , V_{GS} = 0.0 V
Gate-Source Leakage Current	I_{GSS}	-	2.0	μA	V_{GS} = 20.0 V , V_{DS} = 0.0 V
Gate Threshold Voltage	$V_{GS(TH)}$	2.0	6.0	V	V_{DS} = 10.0 V , I_{DS} = 20.0 mA
Forward Transconductance	G_M	160	-	mS	V_{DS} = 10.0 V , I_{DS} 200.0 mA , 80-30 μs Pulse
Input Capacitance	C_{ISS}	-	14	pF	V_{DS} = 28.0 V , F = 1.0 MHz
Output Capacitance	C_{OSS}	-	10	pF	V_{DS} = 28.0 V , F = 1.0 MHz
Reverse Capacitance	C_{RSS}	-	4.8	pF	V_{DS} = 28.0 V , F = 1.0 MHz
Power Gain	G_P	10	-	dB	V_{DD} = 28.0 V, I_{DQ} = 100 mA, P_{OUT} = 10.0 W, F =1.0 GHz
Drain Efficiency	η_D	50	-	%	V_{DD} = 28.0 V, I_{DQ} = 100 mA, P_{OUT} = 10.0 W, F =1.0 GHz
Load Mismatch Tolerance	VSWR-T	-	20:1	-	V_{DD} = 28.0 V, I_{DQ} = 100 mA, P_{OUT} = 10.0 W, F =1.0 GHz

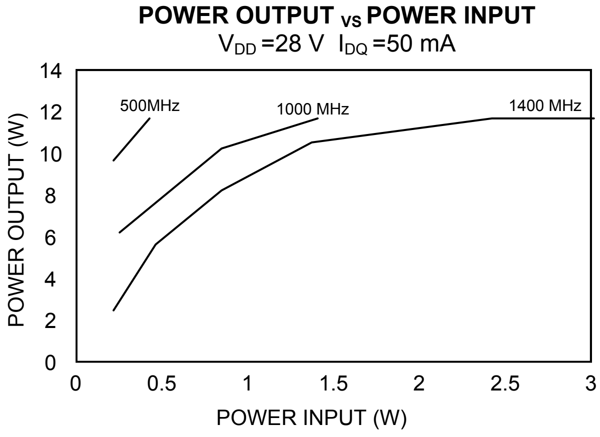
Typical Broadband Performance Curves


CAPACITANCES vs VOLTAGE
F =1.0MHz


POWER OUTPUT vs VOLTAGE
F =1.0 GHz P_{IN}=1.0 W I_{DQ}=100 mA


GAIN vs FREQUENCY
V_{DD}=28 V I_{DQ}=100 mA P_{OUT}=10 W


EFFICIENCY vs FREQUENCY
V_{DD} =28 V I_{DQ} =100 mA P_{out} =10 W


POWER OUTPUT vs POWER INPUT
V_{DD} =28 V I_{DQ} =50 mA

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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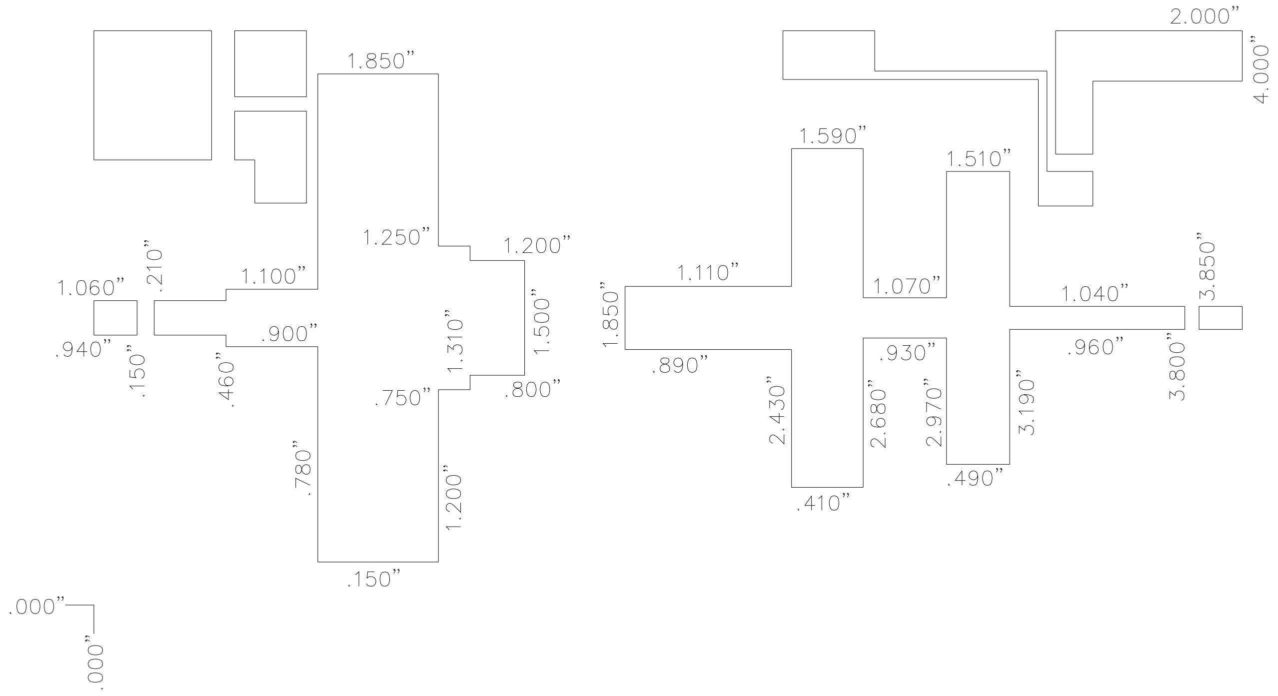
TEST FIXTURE CIRCUIT DIMENSIONS



TEST FIXTURE ASSEMBLY