LF2805A

RF Power MOSFET Transistor
5 W, 500 - 1000 MHz, 28 V

Rev. V1

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 1400 MHz
- RoHS Compliant

Absolute Maximum Ratings @ 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	14.4	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-65 to +150	°C
Thermal Resistance	θ_{JC}	12.1	°C/W

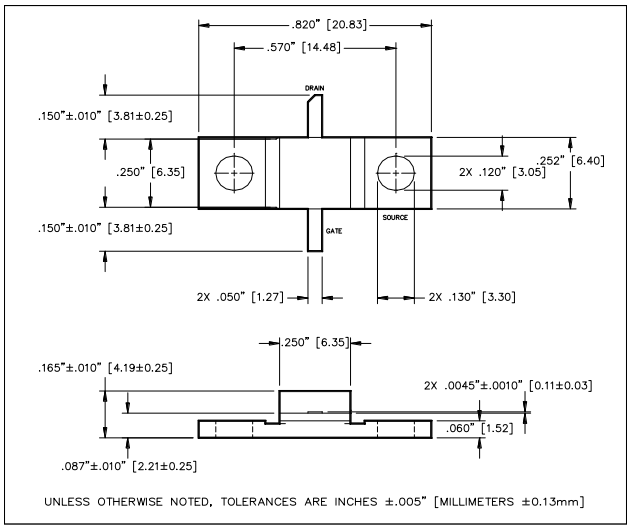
Typical Device Impedance

F (MHz)	Z_{IN} (Ω)	Z_{LOAD} (Ω)
500	4.3 - j29.0	27.3 +j28.6
1000	2.2 - j2.75	8.0 + j16.0
1400	2.8 - j3.0	9.4 + j10.6
V_{DD} = 28V, I_{DQ} = 50mA, P_{OUT} = 5.0 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 ground.

Package Outline



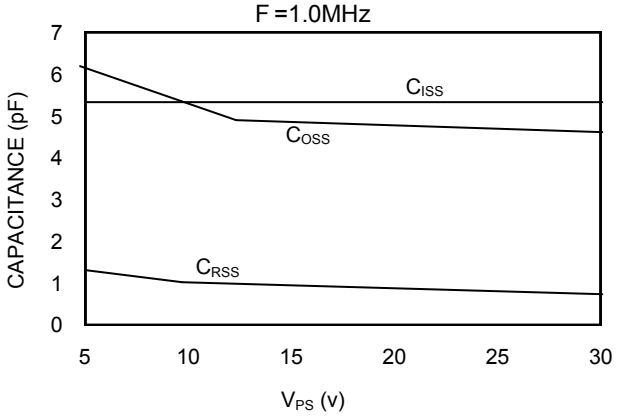
LETTER DIM.	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	20.70	20.96	.815	.825
B	14.35	14.61	.565	.575
C	13.72	14.22	.540	.560
D	6.27	6.53	.247	.257
E	6.22	6.48	.245	.255
F	6.22	6.48	.245	.255
G	1.14	1.40	.045	.055
H	2.92	3.18	.115	.125
J	1.40	1.65	.055	.065
K	1.96	2.46	.077	.097
L	3.61	4.37	.142	.172
M	.08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

Electrical Characteristics @ 25°C

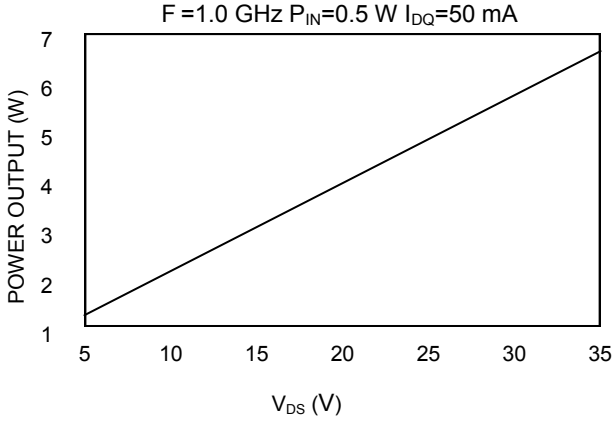
Parameter	Symbol	Min	Max	Units	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	65	-	V	V_{GS} = 0.0 V , I_{DS} = 2.0 mA
Drain-Source Leakage Current	I_{DSS}	-	1.0	mA	V_{GS} = 28.0 V , V_{GS} = 0.0 V
Gate-Source Leakage Current	I_{GSS}	-	1.0	µA	V_{GS} = 20.0 V , V_{DS} = 0.0 V
Gate Threshold Voltage	$V_{GS(TH)}$	2.0	6.0	V	V_{DS} = 10.0 V , I_{DS} = 10.0 mA
Forward Transconductance	G_M	80	-	mS	V_{DS} = 10.0 V , I_{DS} = 100.0 mA , Δ V_{GS} = 1.0V, 80 µs Pulse
Input Capacitance	C_{ISS}	-	7	pF	V_{DS} = 28.0 V , F = 1.0 MHz
Output Capacitance	C_{OSS}	-	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 =1.0 GHz
Drain Efficiency	η_D	50	-	%	V_{DD} = 28.0 V, I_{DQ} = 50 mA, P_{OUT} = 5.0 W F =1.0 GHz
Load Mismatch Tolerance	VSWR-T	-	20:1	-	V_{DD} = 28.0 V, I_{DQ} = 50 mA, P_{OUT} = 5.0 W F =1.0 GHz

Typical Broadband Performance Curves

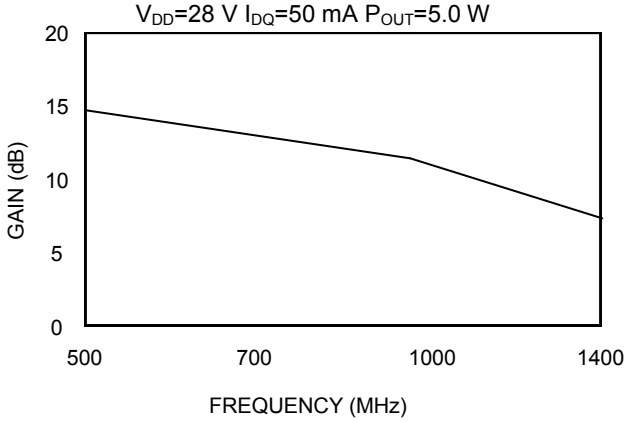
CAPACITANCES vs VOLTAGE
F =1.0MHz



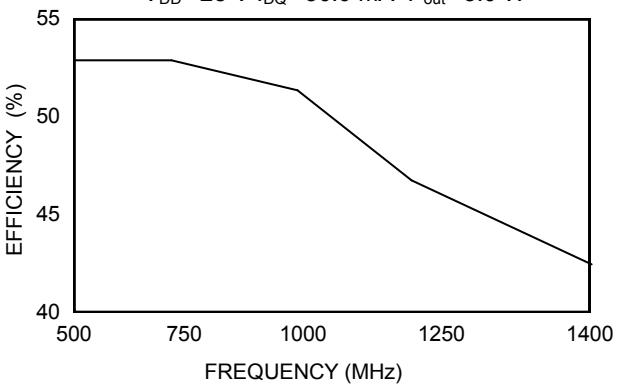
POWER OUTPUT vs VOLTAGE
F =1.0 GHz P_{IN}=0.5 W I_{DQ}=50 mA



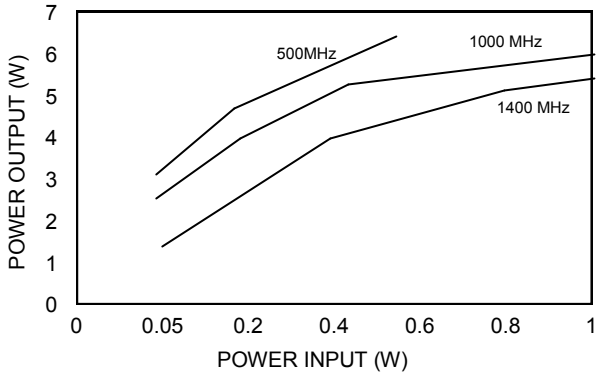
GAIN vs FREQUENCY
V_{DD}=28 V I_{DQ}=50 mA P_{OUT}=5.0 W



EFFICIENCY vs FREQUENCY
V_{DD} =28 V I_{DQ} =50.0 mA P_{out} =5.0 W



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



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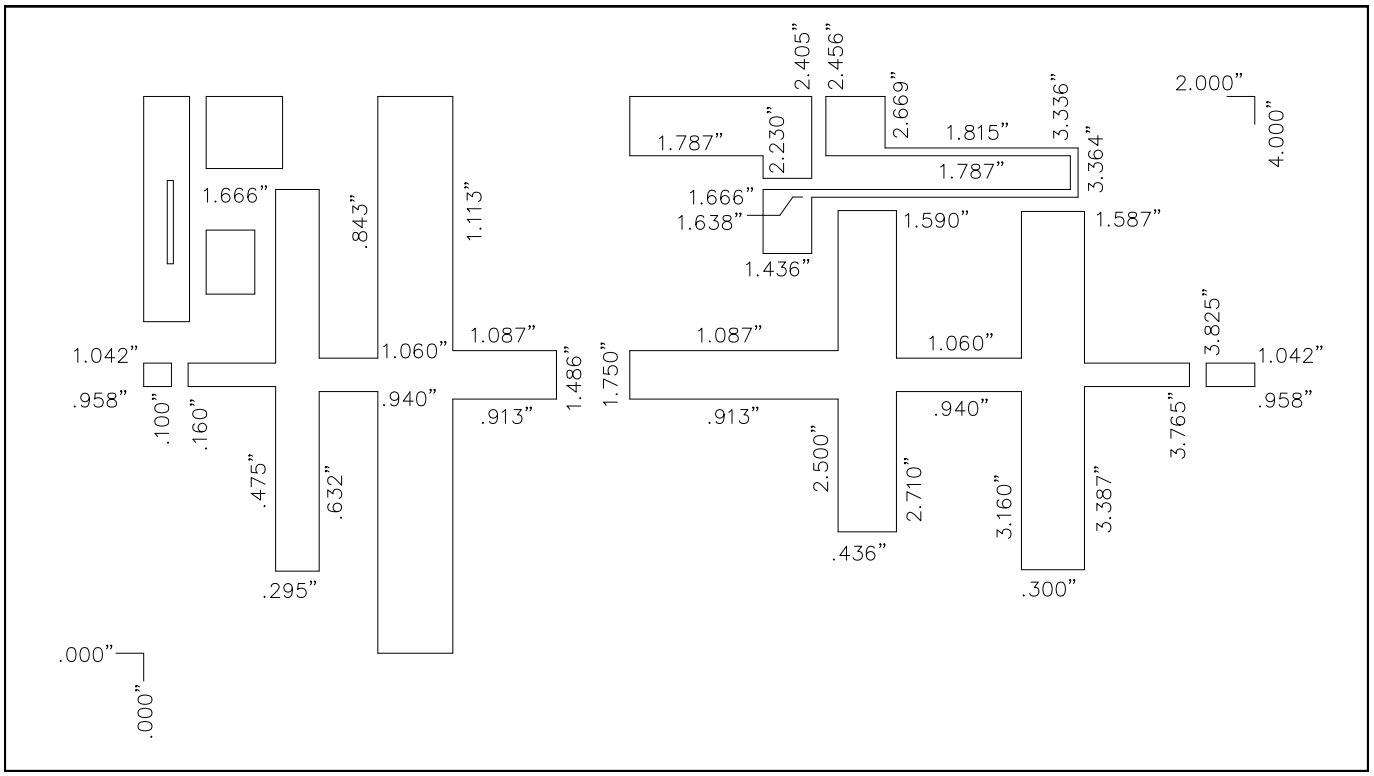
TEST FIXTURE CIRCUIT DIMENSIONS



TEST FIXTURE ASSEMBLY