MACOM an AMP company

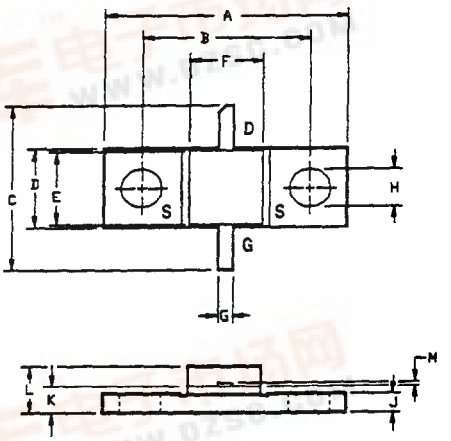
RF MOSFET Power Transistor, 5W, 28V 500 - 1000 MHz

LF2805A

V2.00

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



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

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	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

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}=2.0 mA
Drain-Source Leakage Current	I_{DSS}	-	1.0	mA	V_{DS}=28.0 V, V_{GS}=0.0 V
Gate-Source Leakage Current	I_{GSS}	-	1.0	µA	V_{GS}=20 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, ΔV_{GS}=1.0 V, 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

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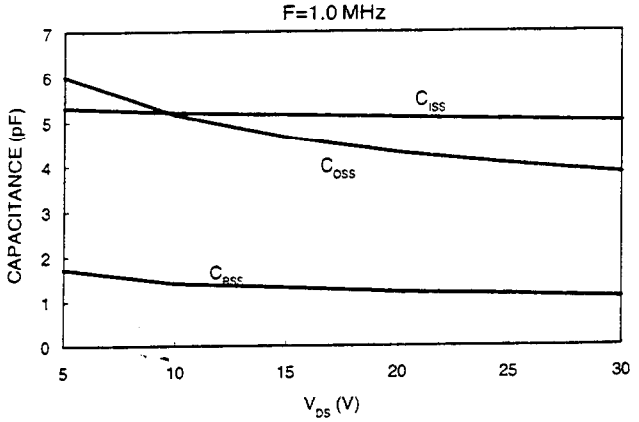
Typical Broadband Performance Curves

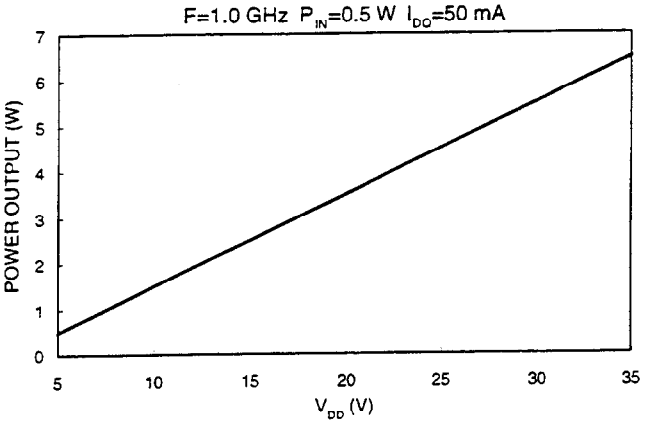
CAPACITANCES vs VOLTAGE

F=1.0 MHz



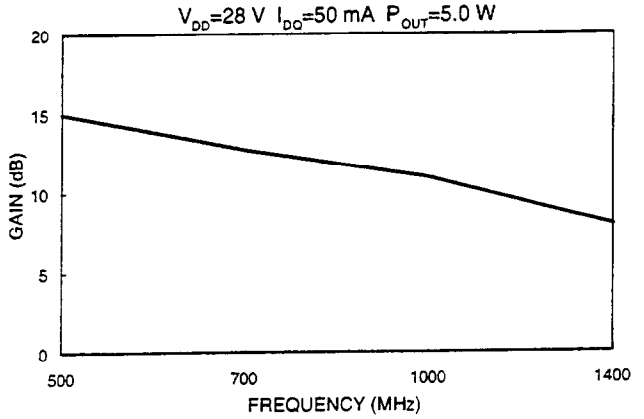
POWER OUTPUT vs VOLTAGE

F=1.0 GHz P_{IN}=0.5 W I_{DQ}=50 mA



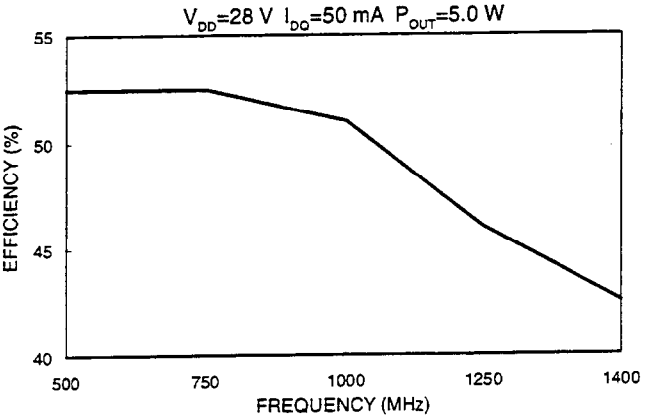
GAIN vs FREQUENCY

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



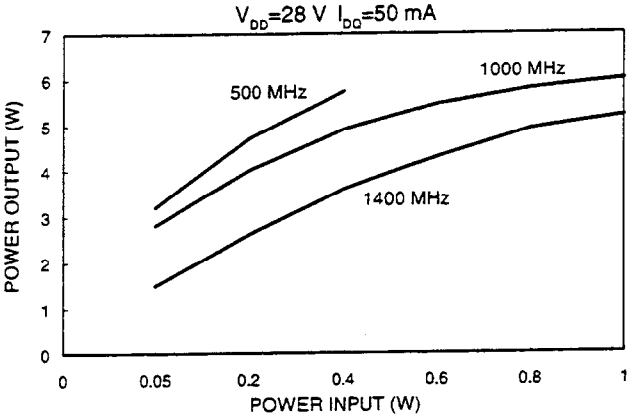
EFFICIENCY vs FREQUENCY

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



POWER OUTPUT vs POWER OUTPUT

V_{DD}=28 V I_{DQ}=50 mA



Typical Device Impedance

Frequency (MHz)	Z_{IN} (OHMS)	Z_{LOAD} (OHMS)
500	4.3 - j 29.0	27.3 + j 28.6
1000	2.2 - j 2.75	8.0 + j 16.0
1400	2.8 + j 3.0	9.4 + j 10.6

V_{DD}=28 V, I_{DQ}=50 mA, P_{OUT}=5.0 Watts

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.

RF Test Fixture