M/A-COM
an AMP company

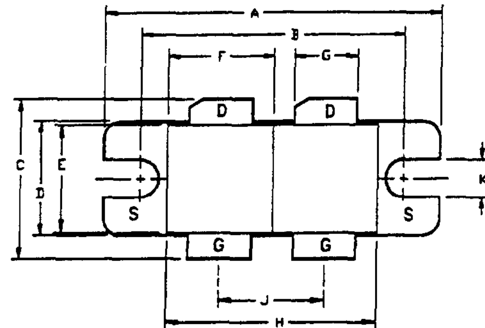
RF MOSFET Power Transistor, 200W, 28V
2 - 175 MHz

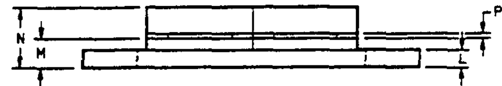
DU28200M

V2.00

Features

- N-Channel Enhancement Mode Device
- DMOS Structure
- Lower Capacitances for Broadband Operation
- High Saturated Output Power
- Lower Noise Figure Than Competitive Devices





LETTER DIM	MILLIMETERS MIN	MILLIMETERS MAX	INCHES MIN	INCHES MAX
A	30.35	30.61	1.195	1.205
B	23.65	23.90	.931	.941
C	13.72	14.22	.540	.560
D	9.63	9.88	.379	.389
E	9.40	9.65	.370	.380
F	9.40	9.65	.370	.380
G	5.59	5.84	.220	.230
H	18.80	19.30	.740	.760
J	9.40	9.65	.370	.380
K	3.12	3.38	.123	.133
L	1.47	1.57	.058	.062
M	2.39	2.74	.094	.108
N	5.03	5.69	.198	.224
P	.05	.13	.002	.005

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}	20	A
Power Dissipation	P_D	389	W
Junction Temperature	T_J	200	°C
Storage Temperature	T_{STG}	-65 to +150	°C
Thermal Resistance	θ_{JC}	0.45	°C/W

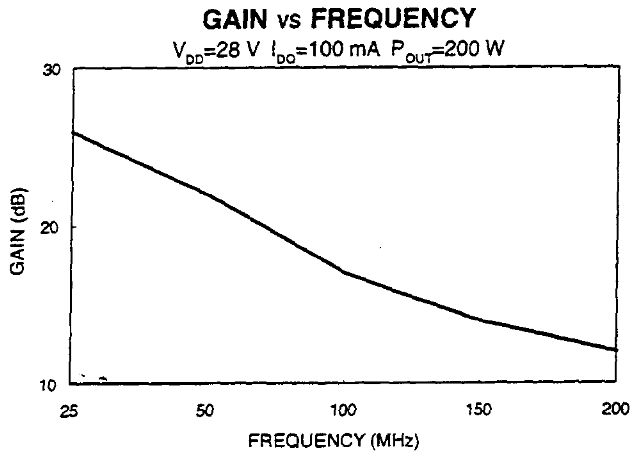
Electrical Characteristics at 25°C

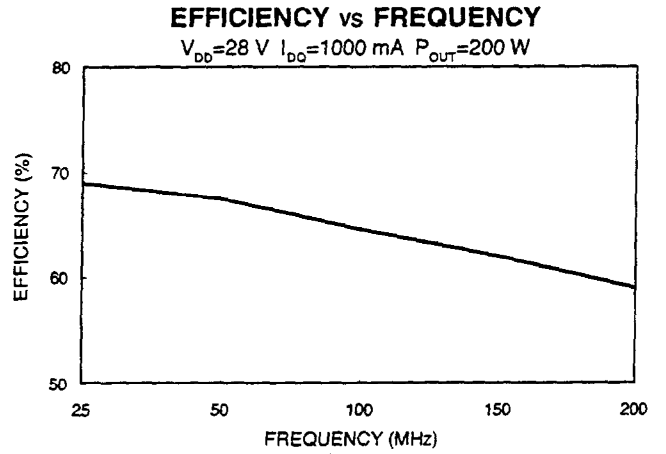
Parameter	Symbol	Min	Max	Units	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	65	-	V	V_{GS}=0.0 V, I_{DS}=25.0 mA*
Drain-Source Leakage Current	I_{DSS}	-	5.0	mA	V_{DS}=28.0 V, V_{GS}=0.0 V*
Gate-Source Leakage Current	I_{GSS}	-	5.0	μA	V_{GS}=20.0 V, V_{DS}=0.0 V*
Gate Threshold Voltage	$V_{GS(TH)}$	2.0	6.0	V	V_{DS}=10.0 V, I_{DS}=500.0 mA*
Forward Transconductance	G_M	2.5	-	S	V_{DS}=10.0 V, I_{DS}=5.0 A, ΔV_{GS}=1.0 V, 80 μs Pulse*
Input Capacitance	C_{ISS}	-	225	pF	V_{DS}=28.0 V, F=1.0 MHz*
Output Capacitance	C_{OSS}	-	200	pF	V_{DS}=28.0 V, F=1.0 MHz*
Reverse Capacitance	C_{RSS}	-	40	pF	V_{DS}=28.0 V, F=1.0 MHz*
Power Gain	G_P	13	-	dB	V_{DD}=28.0 V, I_{DQ}=1000 mA, P_{OUT}=200.0 W, F=175 MHz
Drain Efficiency	η_D	55	-	%	V_{DD}=28.0 V, I_{DQ}=1000 mA, P_{OUT}=200.0 W, F=175 MHz
Load Mismatch Tolerance	VSWR-T	-	10:1	-	V_{DD}=28.0 V, I_{DQ}=1000 mA, P_{OUT}=200.0 W, F=175 MHz

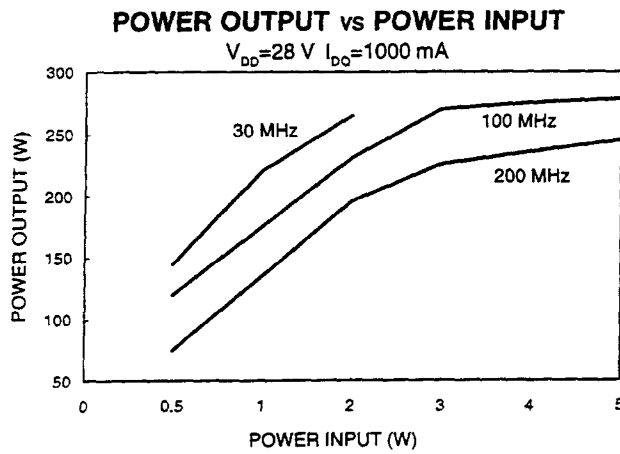
* Per Side

Specifications Subject to Change Without Notice.

Typical Broadband Performance Curves







Typical Device Impedance

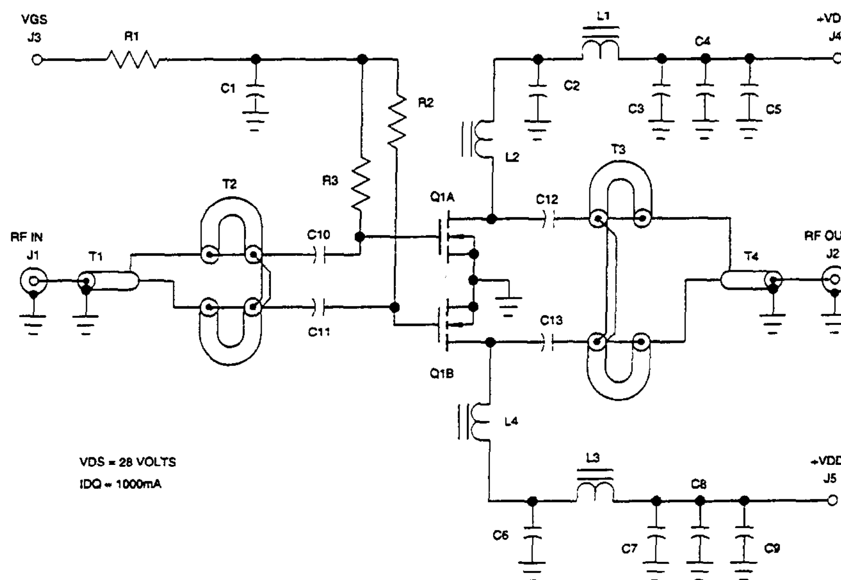
Frequency (MHz)	Z_{IN} (OHMS)	Z_{LOAD} (OHMS)
30	2.7 - j 4.8	7.2 - j 1.9
100	1.6 - j 3.0	5.25 - j 1.4
150	1.5 - j 2.0	5.0 - j 0.7
175	1.6 - j 1.0	5.2 - j 0.6
200	1.8 - j 0.5	5.5 - j 0.5

V_{DD}=28 V, I_{DQ}=1000 mA, P_{OUT}=200 Watts

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

Z_{LOAD} is the series optimum equivalent load impedance as measured from drain to drain.

RF Test Fixture



PARTS LIST

C1,C2,C5, C6,C9	UNELCO CAPACITOR 1000pF
C3	CAPACITOR 50uF
C4,C8	CAPACITOR 0.1uF
C7	ELECTROLYTIC CAPACITOR 50uF 50 V.
C10,C11	CAPACITOR ATC 500pF
C12,C13	CAPACITOR 2X ATC 500pF
L1,L3	1 TURN OF NO. 14 AWG THROUGH BINOCULAR CORE
L2,L4	4 TURNS OF NO. 14 AWG THROUGH BINOCULAR CORE
R1	RESISTOR 6800 OHM 0.5 WATT
R2,R3	RESISTOR 2700 OHM 0.5 WATT
T1,T4	1:1 BALUN 50 OHM COAX X 4"
T2,T3	TWO SECTIONS, 4" EACH OF 25 OHM COAX, CONNECTED IN A 9:1 CONFIGURATION
Q1	DU28200M
BOARD	FR4 0.062"