

# RF MOSFET Power Transistor, 10W, 28V

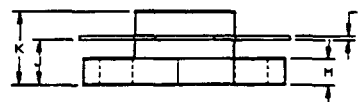
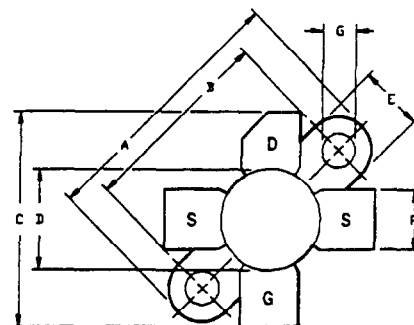
## 2 - 175 MHz

# DU2810S

V2.00

### Features

- N-Channel Enhancement Mode Device
- DMOS Structure
- Lower Capacitances for Broadband Operation
- Common Source Configuration
- Low Noise Floor



### 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	$P_D$	35	W
Junction Temperature	$T_J$	200	°C
Storage Temperature	$T_{STG}$	-65 to +150	°C
Thermal Resistance	$\theta_{JC}$	2	°C/W

LETTER DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	24.64	24.89	.970	.980
B	18.29	18.54	.720	.730
C	20.07	20.83	.790	.820
D	9.47	9.73	.373	.383
E	6.22	6.48	.245	.255
F	5.64	5.79	.222	.228
G	2.92	3.30	.115	.130
H	2.29	2.67	.090	.105
J	4.04	4.55	.159	.179
K	6.58	7.39	.259	.291
L	.10	.15	.004	.006

### Electrical Characteristics at 25°C

Parameter	Symbol	Min	Max	Units	Test Conditions
Drain-Source Breakdown Voltage	$BV_{DSS}$	65	-	V	$V_{GS}=0.0\text{ V}, I_{DS}=4.0\text{ mA}$
Drain-Source Leakage Current	$I_{DSS}$	-	2.0	mA	$V_{DS}=28.0\text{ V}, V_{GS}=0.0\text{ V}$
Gate-Source Leakage Current	$I_{GSS}$	-	2.0	$\mu\text{A}$	$V_{GS}=20.0\text{ V}, V_{DS}=0.0\text{ V}$
Gate Threshold Voltage	$V_{GS(TH)}$	2.0	6.0	V	$V_{DS}=10.0\text{ V}, I_{DS}=20\text{ mA}$
Forward Transconductance	$G_M$	160	-	mS	$V_{DS}=10.0\text{ V}, I_{DS}=200\text{ mA}$ , Pulsed 80-300 $\mu\text{s}$
Input Capacitance	$C_{ISS}$	-	14	pF	$V_{DS}=28.0\text{ V}, F=1.0\text{ MHz}$
Output Capacitance	$C_{OSS}$	-	10	pF	$V_{DS}=28.0\text{ V}, F=1.0\text{ MHz}$
Reverse Capacitance	$C_{RSS}$	-	4.6	pF	$V_{DS}=28.0\text{ V}, F=1.0\text{ MHz}$
Power Gain	$G_p$	13	-	dB	$V_{DD}=28.0\text{ V}, I_{DQ}=100\text{ mA}, P_{OUT}=10\text{ W}, F=175\text{ MHz}$
Drain Efficiency	$\eta_D$	55	-	%	$V_{DD}=28.0\text{ V}, I_{DQ}=100\text{ mA}, P_{OUT}=10\text{ W}, F=175\text{ MHz}$
Load Mismatch Tolerance	VSWR-T	-	20:1	-	$V_{DD}=28.0\text{ V}, I_{DQ}=100\text{ mA}, P_{OUT}=10\text{ W}, F=175\text{ MHz}$

## Typical Device Impedance

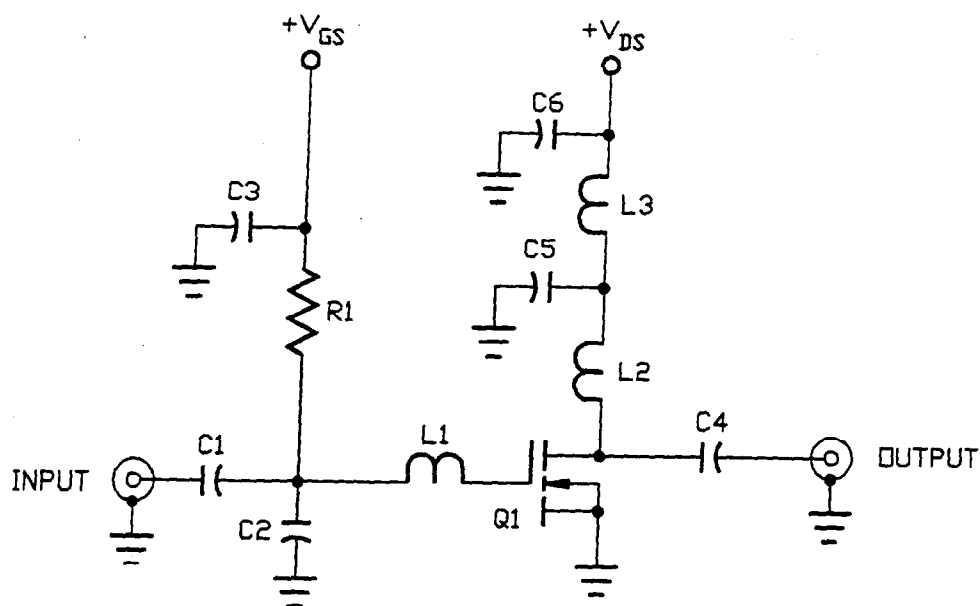
Frequency (MHz)	$Z_{IN}$ (OHMS)	$Z_{LOAD}$ (OHMS)
30	27.0 - j 11.0	23.0 - j 3.0
50	24.0 - j 15.0	19.0 - j 5.0
100	18.0 - j 18.0	14.0 - j 6.0
200	12.0 - j 19.0	9.0 - j 5.0

$$V_{DD}=28 \text{ V, } I_{DQ}=100 \text{ mA, } P_{OUT}=10.0 \text{ Watts}$$

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

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

## RF Test Fixture



- C2      20 pF, UNELCO
- C1 C3    500 pF, UNELCO
- C4 C5    1000 pF, UNELCO
- C6      5  $\mu$ F ELECTROLYTIC
- R1      12K OHM
- L2      4 TURNS OF NO. 16 AWG ON .10" ID
- L1      2 TURNS OF NO. 16 AWG ON .35" ID
- L3      5 TURNS OF NO. 16 AWG ON .35" ID
- Q1      DU2810S

Specifications Subject to Change Without Notice.