



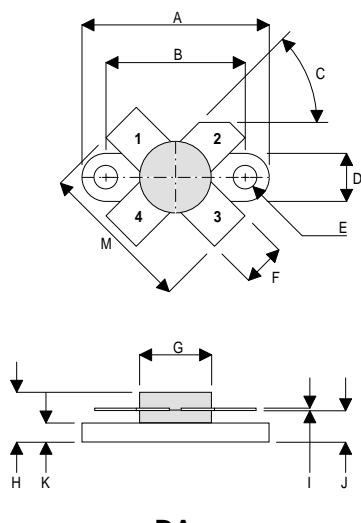
**SEME
LAB**

TetraFET

D1210UK

METAL GATE RF SILICON FET

MECHANICAL DATA



PIN 1	SOURCE	PIN 2	DRAIN
PIN 3	SOURCE	PIN 4	GATE

DIM	mm	Tol.	Inches	Tol.
A	24.76	0.13	0.975	0.005
B	18.42	0.13	0.725	0.005
C	45°	5°	45°	5°
D	6.35	0.13	0.25	0.005
E	3.17	0.13	0.125 DIA	0.005
F	5.71	0.13	0.225	0.005
G	9.52	0.13	0.375	0.005
H	6.60	REF	0.260	REF
I	0.13	0.02	0.005	0.001
J	4.32	0.13	0.170	0.005
K	2.54	0.13	0.100	0.005
M	20.32	0.25	0.800	0.010

GOLD METALLISED MULTI-PURPOSE SILICON DMOS RF FET 10W – 12.5V – 175MHz SINGLE ENDED

FEATURES

- SIMPLIFIED AMPLIFIER DESIGN
- SUITABLE FOR BROAD BAND APPLICATIONS
- LOW C_{rss}
- SIMPLE BIAS CIRCUITS
- LOW NOISE
- HIGH GAIN – 10 dB MINIMUM

APPLICATIONS

- HF/VHF/UHF COMMUNICATIONS
from 1 MHz to 175 MHz

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^\circ\text{C}$ unless otherwise stated)

P_D	Power Dissipation	50W
BV_{DSS}	Drain – Source Breakdown Voltage	40V
BV_{GSS}	Gate – Source Breakdown Voltage	$\pm 20\text{V}$
$I_{D(sat)}$	Drain Current	8A
T_{stg}	Storage Temperature	-65 to 150°C
T_j	Maximum Operating Junction Temperature	200°C

ELECTRICAL CHARACTERISTICS ($T_{case} = 25^\circ C$ unless otherwise stated)

Parameter	Test Conditions		Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS} = 0$	$I_D = 100mA$	40		V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 12.5V$	$V_{GS} = 0$		1	mA
I_{GSS}	Gate Leakage Current	$V_{GS} = 20V$	$V_{DS} = 0$		1	μA
$V_{GS(th)}$	Gate Threshold Voltage*	$I_D = 10mA$	$V_{DS} = V_{GS}$	0.5	7	V
g_{fs}	Forward Transconductance*	$V_{DS} = 10V$	$I_D = 1A$	0.8		S
G_{PS}	Common Source Power Gain	$P_O = 10W$		10		dB
η	Drain Efficiency	$V_{DS} = 12.5V$	$I_{DQ} = 0.4A$	50		%
VSWR	Load Mismatch Tolerance	$f = 175MHz$		20:1		—
C_{iss}	Input Capacitance	$V_{DS} = 0$	$V_{GS} = -5V$	$f = 1MHz$	60	pF
C_{oss}	Output Capacitance	$V_{DS} = 12.5V$	$V_{GS} = 0$	$f = 1MHz$	40	pF
C_{rss}	Reverse Transfer Capacitance	$V_{DS} = 12.5V$	$V_{GS} = 0$	$f = 1MHz$	4	pF

* Pulse Test: Pulse Duration = 300 μs , Duty Cycle $\leq 2\%$

HAZARDOUS MATERIAL WARNING

The ceramic portion of the device between leads and metal flange is beryllium oxide. Beryllium oxide dust is highly toxic and care must be taken during handling and mounting to avoid damage to this area.

THESE DEVICES MUST NEVER BE THROWN AWAY WITH GENERAL INDUSTRIAL OR DOMESTIC WASTE.

THERMAL DATA

$R_{THj-case}$	Thermal Resistance Junction – Case	Max. 3.5°C / W
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