

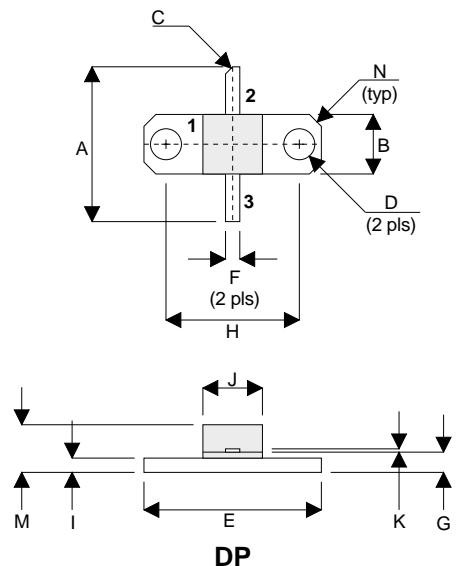
**SEME  
LAB**

TetraFET

**D2210UK**

METAL GATE RF SILICON FET

### MECHANICAL DATA



PIN 1 SOURCE                                    PIN 2 DRAIN  
PIN 3 GATE

DIM	mm	Tol.	Inches	Tol.
A	16.51	0.25	0.650	0.010
B	6.35	0.13	0.250	0.005
C	45°	5°	45°	5°
D	3.30	0.13	0.130	0.005
E	18.92	0.08	0.745	0.003
F	1.52	0.13	0.060	0.005
G	2.16	0.13	0.085	0.005
H	14.22	0.08	0.560	0.003
I	1.52	0.13	0.060	0.005
J	6.35	0.13	0.250	0.005
K	0.13	0.03	0.005	0.001
M	5.08	0.51	0.200	0.020
N	1.27 x 45°	0.13	0.050 x 45°	0.005

## GOLD METALLISED MULTI-PURPOSE SILICON DMOS RF FET 20W – 12.5V – 1GHz 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

- VHF/UHF COMMUNICATIONS  
from DC to 1 GHz

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

$P_D$	Power Dissipation	70W
$BV_{DSS}$	Drain – Source Breakdown Voltage	40V
$BV_{GSS}$	Gate – Source Breakdown Voltage	$\pm 20\text{V}$
$I_{D(sat)}$	Drain Current	16A
$T_{stg}$	Storage Temperature	-65 to 150°C
$T_j$	Maximum Operating Junction Temperature	200°C



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

Parameter	Test Conditions		Min.	Typ.	Max.	Unit
$BV_{DSS}$	Drain–Source Breakdown Voltage	$V_{GS} = 0$	$I_D = 10\text{mA}$	40		V
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS} = 12.5\text{V}$	$V_{GS} = 0$		8	mA
$I_{GSS}$	Gate Leakage Current	$V_{GS} = 20\text{V}$	$V_{DS} = 0$		8	$\mu\text{A}$
$V_{GS(th)}$	Gate Threshold Voltage*	$I_D = 10\text{mA}$	$V_{DS} = V_{GS}$	0.5	7	V
$g_{fs}$	Forward Transconductance*	$V_{DS} = 10\text{V}$	$I_D = 0.8\text{A}$	1.44		S
$G_P S$	Common Source Power Gain	$P_O = 20\text{W}$		10		dB
$\eta$	Drain Efficiency	$V_{DS} = 12.5\text{V}$	$I_{DQ} = 1.6\text{A}$	40		%
VSWR	Load Mismatch Tolerance	$f = 1\text{GHz}$		20:1		—
$C_{iss}$	Input Capacitance	$V_{DS} = 0$	$V_{GS} = -5\text{V}$	$f = 1\text{MHz}$	96	pF
$C_{oss}$	Output Capacitance	$V_{DS} = 12.5\text{V}$	$V_{GS} = 0$	$f = 1\text{MHz}$	80	pF
$C_{rss}$	Reverse Transfer Capacitance	$V_{DS} = 12.5\text{V}$	$V_{GS} = 0$	$f = 1\text{MHz}$	8	pF

\* Pulse Test: Pulse Duration = 300  $\mu\text{s}$ , 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. 2.5°C / W
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