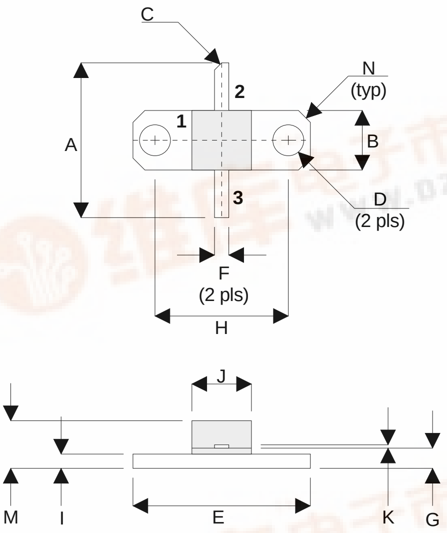
TetraFET

D2010UK

METAL GATE RF SILICON FET

MECHANICAL DATA



DP

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 – 28V – 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 50 MHz to 1 GHz

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C unless otherwise stated)

P_D	Power Dissipation	83W
BV_{DSS}	Drain – Source Breakdown Voltage	65V
BV_{GSS}	Gate – Source Breakdown Voltage	±20V
$I_{D(sat)}$	Drain Current	8A
T_{stg}	Storage Temperature	–65 to 150°C
T_j	Maximum Operating Junction Temperature	200°C

ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

Parameter		Test Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain–Source Breakdown Voltage	V_{GS} = 0 I_D = 10mA	65			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 28V V_{GS} = 0			8	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}	1		7	V
g_{fs}	Forward Transconductance*	V_{DS} = 10V I_D = 1.6A	1.44			S
G_{PS}	Common Source Power Gain	P_O = 20W V_{DS} = 28V I_{DQ} = 0.8A f = 1GHz	10			dB
η	Drain Efficiency		40			%
VSWR	Load Mismatch Tolerance		20:1			—
C_{iss}	Input Capacitance	V_{DS} = 0 V_{GS} = –5V f = 1MHz			96	pF
C_{oss}	Output Capacitance	V_{DS} = 28V V_{GS} = 0 f = 1MHz			48	pF
C_{rss}	Reverse Transfer Capacitance	V_{DS} = 28V V_{GS} = 0 f = 1MHz			4	pF

* Pulse Test: Pulse Duration = 300 µs , Duty Cycle ≤ 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. 2.1°C / W