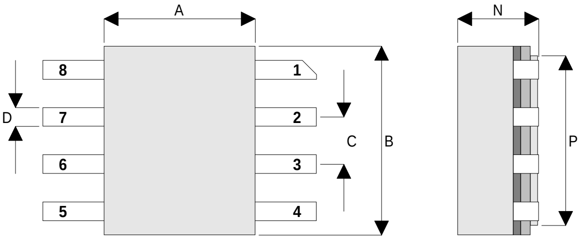
TetraFET

D2021UK

METAL GATE RF SILICON FET

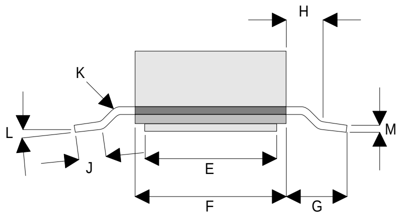
MECHANICAL DATA



GOLD METALLISED MULTI-PURPOSE SILICON DMOS RF FET

7.5W – 28V – 1GHz

SINGLE ENDED



SO8 PACKAGE

PIN 1 – SOURCE	PIN 5 – SOURCE
PIN 2 – DRAIN	PIN 6 – GATE
PIN 3 – DRAIN	PIN 7 – GATE
PIN 4 – SOURCE	PIN 8 – SOURCE

Dim.	mm	Tol.	Inches	Tol.
A	4.06	±0.08	0.160	±0.003
B	5.08	±0.08	0.200	±0.003
C	1.27	±0.08	0.050	±0.003
D	0.51	±0.08	0.020	±0.003
E	3.56	±0.08	0.140	±0.003
F	4.06	±0.08	0.160	±0.003
G	1.65	±0.08	0.065	±0.003
H	0.76	+0.25	0.030	+0.010
		-0.00		-0.000
J	0.51	Min.	0.020	Min.
	1.02	Max.	0.040	Max.
K	45°	Max.	45°	Max.
L	0°	Min.	0°	Min.
	7°	Max.	7°	Max.
M	0.20	±0.08	0.008	±0.003
N	2.18	Max.	0.086	Max.
P	4.57	±0.08	0.180	±0.003

FEATURES

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

APPLICATIONS

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

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

P_D	Power Dissipation	17.5W
BV_{DSS}	Drain – Source Breakdown Voltage	65V
BV_{GSS}	Gate – Source Breakdown Voltage	±20V
$I_{D(sat)}$	Drain Current	3A
T_{stg}	Storage Temperature	–65 to 150°C
T_j	Maximum Operating Junction Temperature	200°C

SEME LAB

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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	$V_{DS} = 28V$	$V_{GS} = 0$				3	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*	$V_{DS} = 10V$	$I_D = 0.6A$		0.54			S
G_{PS}	Common Source Power Gain	$P_O = 7.5W$			13			dB
η	Drain Efficiency	$V_{DS} = 28V$	$I_{DQ} = 0.3A$		40			%
VSWR	Load Mismatch Tolerance	f = 1GHz			20:1			—
C_{iss}	Input Capacitance	$V_{DS} = 0V$	$V_{GS} = -5V$	f = 1MHz			36	pF
C_{oss}	Output Capacitance	$V_{DS} = 28V$	$V_{GS} = 0$	f = 1MHz			18	pF
C_{rss}	Reverse Transfer Capacitance	$V_{DS} = 28V$	$V_{GS} = 0$	f = 1MHz			1.5	pF

* Pulse Test: Pulse Duration = 300 µs , Duty Cycle ≤ 2%

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THERMAL DATA

$R_{THj-case}$	Thermal Resistance Junction – Case	Max. 5°C / W