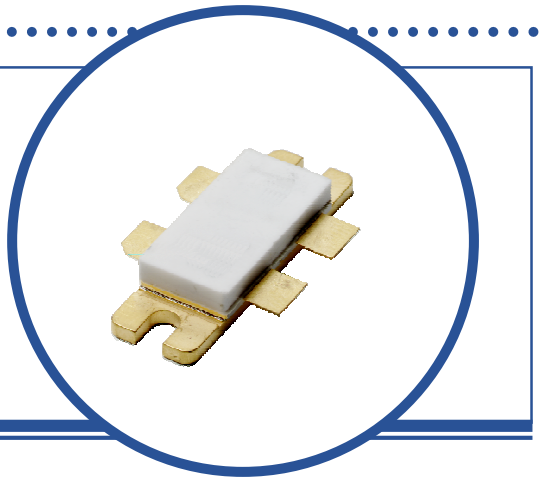
D5020UK

GOLD METALLISED MULTI-PURPOSE SILICON DMOS RF FET 150W—50V—400MHZ PUSH-PULL



FEATURES:

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

APPLICATIONS

- HF/VHF/UHF COMMUNICATIONS from 1MHz to 500MHz

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

P_D	Power Dissipation	389W
BV_{DSS}	Drain – Source Breakdown Voltage*	125V
BV_{GSS}	Gate – Source Breakdown Voltage*	±20V
$I_{D(SAT)}$	Drain Current*	15A
T_{stg}	Storage Temperature Range	-65 to +150°C
T_J	Maximum Operating Junction Temperature	200°C

* Per Side

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

Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units
		PER SIDE				
BV_{DSS}	Drain – Source Breakdown Voltage	V_{GS} = 0V I_D = 100mA	125			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 50V V_{GS} = 0V			5	mA
I_{GSS}	Gate Leakage Current	V_{GS} = 20V V_{DS} = 0V			1	µA
$V_{GS(th)}$	Gate Threashold Voltage *	I_D = 10mA V_{DS} = V_{GS}	1		7	V
g_{fs}	Forward Transconducatnce*	V_{DS} = 10V I_D = 5A	4			S

* Pulse Width ≤ 380us, δ ≤ 2%

DYNAMIC CHARACTERISTICS

Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units
		Per Side				
C_{iss}	Input Capacitance	V_{DS} = 50V V_{GS} = -5V f = 1.0MHz			300	pF
C_{oss}	Output Capacitance	V_{DS} = 50V V_{GS} = 0V f = 1.0MHz			125	
C_{rss}	Reverse Transfer Capacitance	V_{DS} = 50V V_{GS} = 0V f = 1.0MHz			7.5	
		Total Device				
G_{PS}	Common Source Power Gain	P_O = 150W V_{DS} = 50V I_{DQ} = 2A f = 400MHz	10			dB
η	Drain Efficiency		50			%
VSWR	Load Mismatch Tolerance		20:1			

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 Properties

Symbols	Parameters	Max.	Units
$R_{THj\text{-}case}$	Thermal Resistance, Junction To Case	0.45	°C/W

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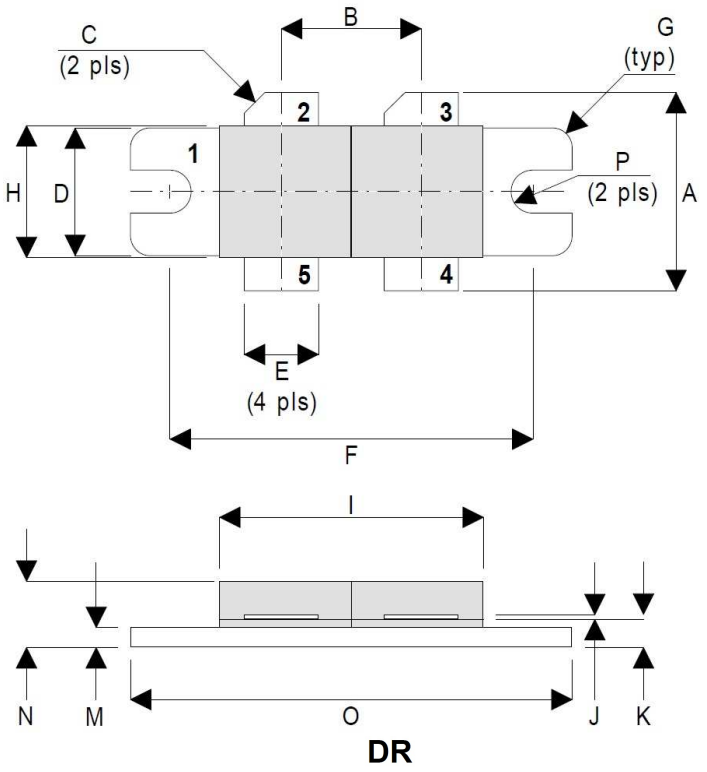
ROHS COMPLIANT METAL GATE RF SILICON FET

MECHANICAL DATA



DR

PIN 1	SOURCE (COMMON)	PIN 2	DRAIN 1
PIN 3	DRAIN 2	PIN 4	GATE 2
PIN 5	GATE 1		

DIM	Millimetres	Tol.	Inches	Tol.
A	19.05	0.50	0.75	0.020
B	10.77	0.13	0.424	0.005
C	45°	5°	45°	5°
D	9.78	0.13	0.385	0.005
E	5.71	0.13	0.225	0.005
F	27.94	0.13	1.100	0.005
G	1.52R	0.13	0.060R	0.005
H	10.16	0.13	0.400	0.005
I	22.22	MAX	0.875	MAX
J	0.13	0.02	0.005	0.001
K	2.72	0.13	0.107	0.005
M	1.70	0.13	0.067	0.005
N	5.08	0.50	0.200	0.020
O	34.03	0.13	1.340	0.005
P	1.61R	0.08	0.064R	0.003