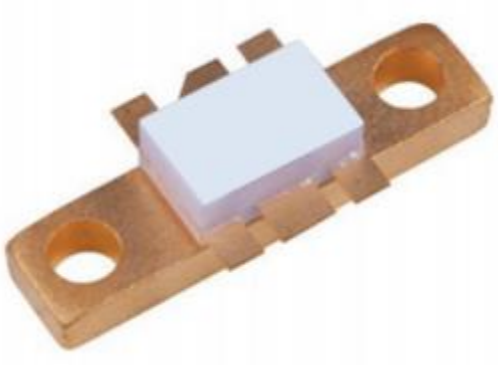
RF Silicon Mosfet

2.5W 500MHz 28V Single-Ended

D2014UK



Features:

- Simplified Amplifier Design
- Suitable for Broad Band Applications
- Low C_{rss}
- Simple Bias Circuits
- Low Noise
- High Gain – 13dB Minimum
- RoHS Compliant

Description:

Single-Ended RF Silicon Mosfet. 2.5W at 500MHz, 28V

Absolute Maximum Ratings (T_A = 25°C unless otherwise noted)

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	1A
T_{stg}	Storage Temperature	-65 to +150°C
T_j	Maximum Operating Junction Temperature	200°C

Thermal Properties

SYMBOL	PARAMETER	MAX	UNITS
$R_{\theta JC}$	Thermal Resistance, Junction to Case	10.0	°C/W

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Electrical Specifications

Electrical Characteristics (T_A = 25° C unless otherwise noted)

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS} = 0V, I_D = 10mA	65			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 28V, V_{GS} = 0V			1	mA
I_{GSS}	Gate leakage Current	V_{GS} = 20V, V_{DS} = 0V			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 = 0.2A	0.18			S
G_{PS}	Common Source Power Gain	P_O = 2.5W V_{DS} = 28V, I_{DQ} = 0.1A f = 500MHz	13			dB
η	Drain Efficiency		40			%
VSWR(1)	Load Mismatch Tolerance		20:1			-
C_{iss}(1)	Input Capacitance	V_{DS} = 28V, V_{GS} = -5V f = 1MHz			12	pF
C_{oss}(1)	Output Capacitance	V_{DS} = 28V, V_{GS} = 0V f = 1MHz			6	pF
C_{rss}(1)	Reverse Transfer Capacitance	V_{DS} = 28V, V_{GS} = 0V f = 1MHz			0.5	pF

Notes:

(1) By design only, not a production test

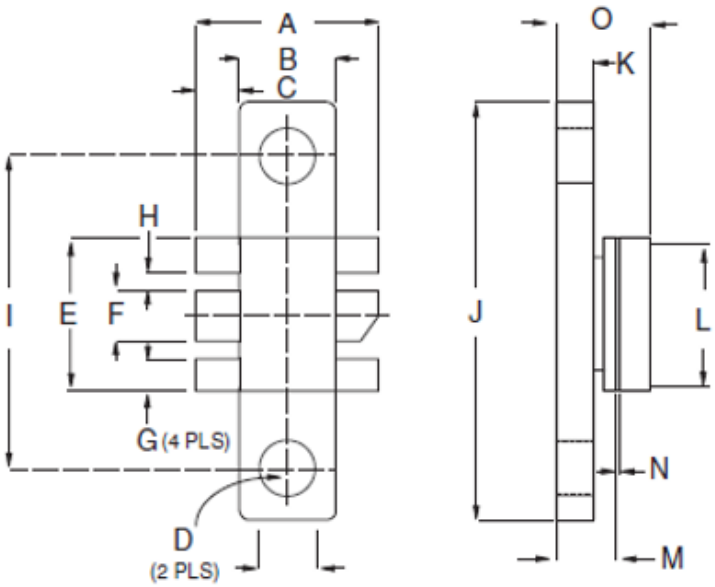
HAZARDOUS MATERIAL WARNING

The ceramic portion of the device between leads and metal flange is beryllium oxide. Beryllium oxide dust us 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

Packaging

Mechanical Data



SOT171

Top View

Pin 1 - Source	Pad 2 – Source
Pin 3 – Gate	Pin 4 – Drain
Pin 5 – Source	Pin 6 – Source

DIM	mm	Tol.	Inches	Tol.
A	10.92	0.38	0.430	0.015
B	5.84	0.13	0.230	0.005
C	2.54	0.13	0.100	0.005
D	3.30 dia	1.27	0.130 dia	0.050
E	9.14	0.13	0.360	0.005
F	3.05	0.13	0.120	0.005
G	2.01	0.13	0.079	0.005
H	1.07	0.13	0.042	0.005
I	18.42	0.13	0.725	0.005
J	24.77	0.13	0.975	0.005
K	2.79	0.13	0.110	0.005
L	9.14	0.13	0.360	0.005
M	4.22	0.25	0.166	0.010
N	0.13	0.05	0.005	0.002
O	7.37	MAX	0.290	MAX

Revision Control

ISSUE	CHANGE DESCRIPTION	APPROVAL	DATE
1	First issue	P.Smith	04-09-2001
2	Corrected test frequency from 1GHz to 500MHz	P.Smith	23-01-2003
3	Corrected dimension tolerances	P.Smith	25-06-2020