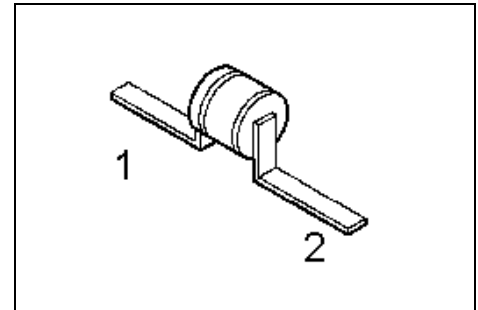


40V HiRel Silicon Schottky Diode

BAS40-T1(ES)

Features

- General-purpose diodes for high-speed switching
- Circuit protection
- Voltage clamping
- High-level detecting and mixing
- Hermetically sealed microwave package



Product validation

- **ESA Space Qualified**
 ESCC Detail Spec. No.: 5512/020
 Type Variant No. 03

Description

ESD: Electrostatic discharge sensitive device, observe handling precautions!

Table 1 Product information

Type	Comment	Pin Configuration
BAS40-T1(ES)	For flight use	
BAS40-T1(P) ¹	Not for flight use ¹	

¹ (P) parts have the same fit, form and function as (ES) parts, no screening acc. to Chart F3 in ESCC Generic Specification No. 5010

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Maximum ratings

1 Maximum ratings

Table 2 Maximum ratings

Parameter	Symbol	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
Reverse Voltage	V_R	-	-	40	V	
Forward Current	I_F	-	-	120	mA	
Surge Forward Current	I_{FSM}	-	-	170	mA	$t \leq 10\text{ms}$, Duty Cycle=10%
Power Dissipation ¹	P_{tot}	-	-	250	mW	$T_C \leq 125\text{ }^\circ\text{C}$
Operating and storage temperature	T_{op}	-55	-	150	$^\circ\text{C}$	
Junction temperature	T_j	-	-	150	$^\circ\text{C}$	

¹ For $T_C > 125^\circ\text{C}$ derating is required.

Thermal characteristics

2 Thermal characteristics

Table 3 Thermal characteristics

Parameter	Symbol	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
Thermal resistance, junction -case	$R_{th,jc}$	-	-	100	K/W	
Soldering temperature	T_{sol}	-	-	250	°C	Duration 5 seconds maximum and the same terminal shall not be resoldered until 3 minutes have elapsed.

Electrical characteristics

3 Electrical characteristics

at $T_A=25^\circ\text{C}$, unless otherwise specified

Table 4 Static characteristics

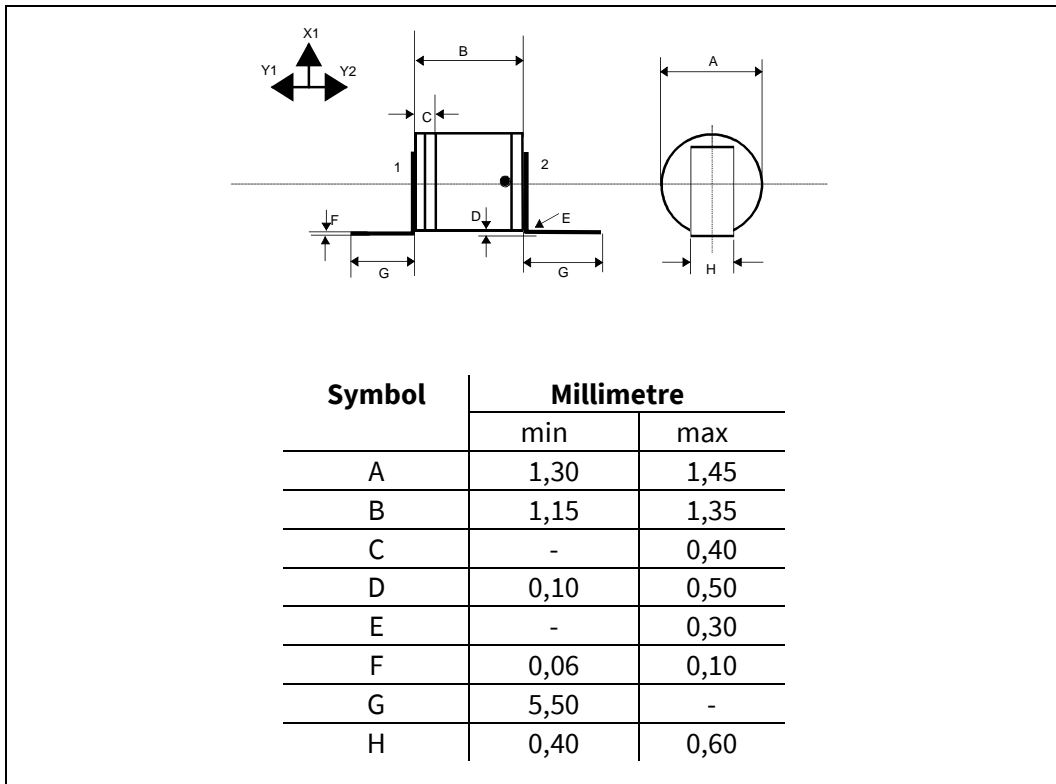
Parameter	Symbol	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
Reverse Current 1	I_{R1}	-	-	2	μA	$V_R=40\text{V}$
Reverse Current 2	I_{R2}	-	-	0.1	μA	$V_R=32\text{V}$
Forward Voltage 1	V_{F1}	0.29	0.33	0.39	V	$I_{F1}=1.0\text{mA}$
Forward Voltage 2	V_{F2}	0.41	0.45	0.54	V	$I_{F2}=10\text{mA}$
Forward Voltage 3	V_{F3}	0.65	0.7	0.85	V	$I_{F3}=40\text{mA}$
Differential Forward Resistance ¹	R_{FD}	8	10	12	Ω	$I_{F2}=10\text{mA}, I_{F3}=15\text{mA}$

Table 5 Dynamic characteristics

Parameter	Symbol	Values			Unit	Note / Test Condition
		Min.	Typ.	Max.		
Total Capacitance	C_T	2.4	2.9	4.0	pF	$V_R=0\text{V}, f=1.0\text{MHz}, V_{in}=15\text{mV}$

¹ $R_{FD} = \frac{\Delta V_F}{5 \cdot 10^{-3}\text{A}}$

4 Package outlines



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Edition 4, October 2020

Published by

Infineon Technologies AG

81726 München, Germany

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