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Vishay Semiconductors

RoHS

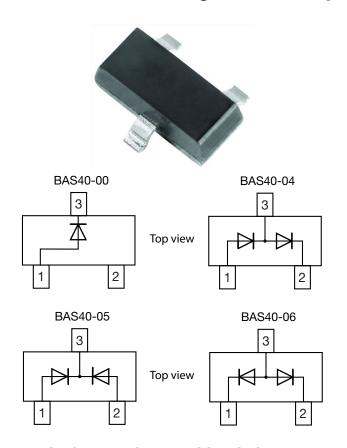
HALOGEN

FREE

GREEN

(5-2008)

Small Signal Schottky Diodes, Single and Dual



FEATURES

- These diodes feature very low turn-on voltage and fast switching
- These devices are protected by a PN junction guardring against excessive voltage, such as electrostatic discharges
- AEC-Q101 qualified available (part number on request)
- Molding compound meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level (MSL) 1
- Base P/N-G3 green, commercial grade
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

MECHANICAL DATA

Case: SOT-23

Weight: approx. 9.2 mg
Packaging codes / options:

18/10K per 13" reel (8 mm tape), 10K/box 08/3K per 7" reel (8 mm tape), 15K/box

LINKS TO ADDITIONAL RESOURCES











PARTS TABLE							
PART	ORDERING CODE	AEC-Q101 QUALIFIED	TYPE MARKING	CIRCUIT CONFIGURATION	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY	
BAS40-00-G	BAS40-00-G3-08	no	43G	Single	3 000 (8 mm tape on 7" reel)	15 000	
	BAS40-00-G3-18	no	430	Sirigle	10 000 (8 mm tape on 13" reel)	10 000	
BAS40-04-G	BAS40-04-G3-08	no	44G	Dual serial	3 000 (8 mm tape on 7" reel)	15 000	
	BAS40-04-G3-18	no			10 000 (8 mm tape on 13" reel)	10 000	
BAS40-05-G	BAS40-05-G3-08	no	- 45G	Common cathode	3 000 (8 mm tape on 7" reel)	15 000	
	BAS40-05-G3-18	no		430 0	Common camode	10 000 (8 mm tape on 13" reel)	10 000
BAS40-06-G	BAS40-06-G3-08	no	- 46G	Common anode	3 000 (8 mm tape on 7" reel)	15 000	
	BAS40-06-G3-18	no		40G Common anode	10 000 (8 mm tape on 13" reel)	10 000	

BAS40-00-G to BAS40-06-G

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PACKAGE					
PACKAGE NAME WEIGHT		MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS	
SOT-23	9.2 mg	UL 94 V-0	MSL 1 (according J-STD-020)	Peak temperature max. 260 °C	

ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT		
Repetitive peak reverse voltage		$V_{RRM} = V_{RWM} = V_{R}$	40	V		
Forward continuous current (1)		I _F	200	mA		
Surge forward current (1)	t _p < 1 s	I _{FSM}	600	mA		
Power dissipation	on FR-4 board with recommended soldering footprint	В	220	mW		
rower dissipation	Infinite heatsink	P _{tot} 310		mW		

Note

(1) Infinite heatsink

THERMAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT		
Thermal resistance junction to ambient air	according to JEDEC® 51-3 on FR-4 board with recommended soldering footprint	R _{thJA}	460	K/W		
Thermal resistance junction lead	Infinite heatsink	R _{thJL}	320	K/W		
Maximum junction temperature		T _j	125	°C		
Storage temperature range		T _{stg}	-65 to +150	°C		
Operating temperature range		T _{op}	-55 to +125	°C		

ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	I _R = 10 μA (pulsed)	V _{BR}	40			V
Leakage current	V _R = 30 V	I _R		20	100	nA
Forward voltage	I _F = 1 mA	V _F			380	mV
Forward voltage (1)	I _F = 50 mA	V _F			1	V
Diode capacitance	V _R = 0; f = 1 MHz	C _D		2.5	5	pF
Reverse recovery time	$I_F = I_R = 10 \text{ mA},$ $i_R = 1 \text{ mA}, R_L = 100 \Omega$	t _{rr}			5	ns

Note

 $^{(1)}$ Pulse test $t_p < 300 \mu s$

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TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

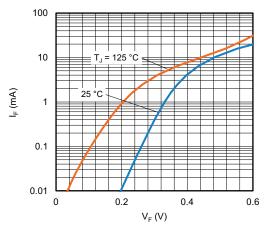


Fig. 1 - Typical Forward Current vs. Forward Voltage

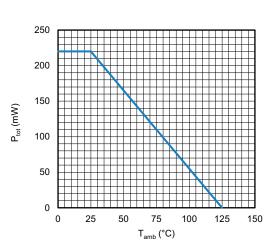


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

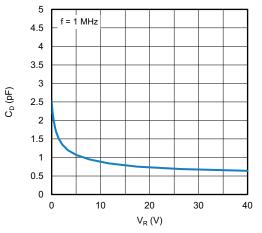


Fig. 3 - Typical Capacitance vs. Reverse Voltage

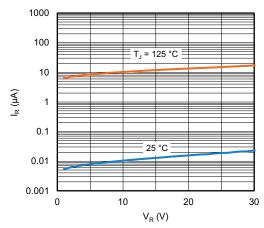


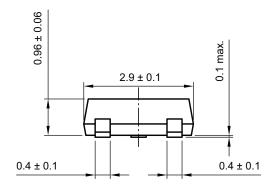
Fig. 4 - Typical Reverse Leakage Current vs. Reverse Voltage

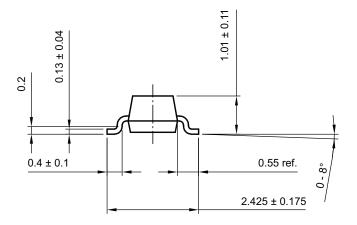


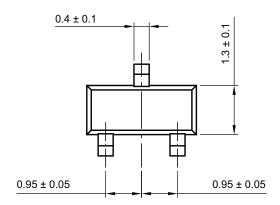
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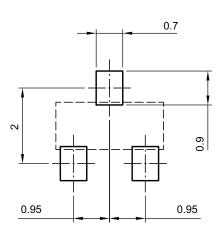
PACKAGE DIMENSIONS in millimeters: **SOT-23**







footprint recommendation:



Created - Date: 18-Oct-2021 Rev. 01 - Date: 18-Jan-2022 S8-V-3929.01-009 (4)

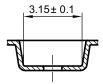


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CARRIER TAPE SOT-23

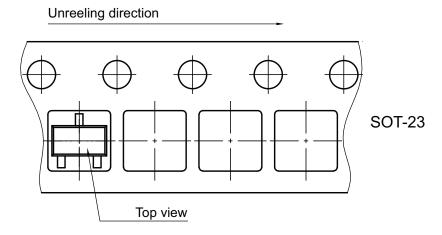
A-A Section 0.229 ± 0.013 0.229 ± 0.013 0.229 ± 0.013 0.229 ± 0.013

B-B Section



Created Date: 04-Feb-2010 Rev. Date: 07-Feb-2022 S8-V-3929.01-005 (4)

ORIENTATION IN CARRIER TAPE SOT-23



Created Date: 04-Feb-2010 Rev. Date: 07-Nov-2022 S8-V-3929.01-005 (4)



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