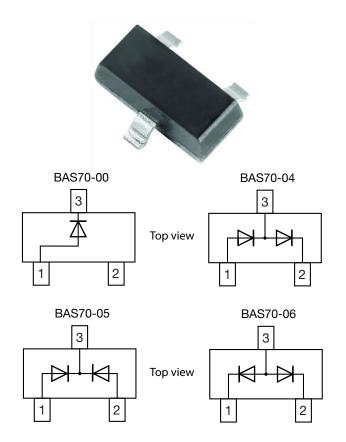


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## Vishay Semiconductors

# **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
- Molding compound meets UL 94 V-0 flammability rating
  - 4 V-0 RoHS COMPLIANT

AUTOMOTIVE GRADE

- Moisture Sensitivity Level (MSL) 1
- Base P/N-E3 RoHS-compliant, commercial grade
- Base P/N-HE3 RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see <a href="https://www.vishay.com/doc?99912">www.vishay.com/doc?99912</a>

#### **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	
BAS70-00	BAS70-00-E3-08	no		Single	3 000	15 000	
	BAS70-00-HE3_A-08	yes	73G		(8 mm tape on 7" reel)		
	BAS70-00-E3-18	no	730		10 000	10 000	
	BAS70-00-HE3_A-18	yes			(8 mm tape on 13" reel)	10 000	
	BAS70-04-E3-08	no	74G	Dual serial	3 000	15 000	
BAS70-04	BAS70-04-HE3_A-08	yes			(8 mm tape on 7" reel)		
	BAS70-04-E3-18	no			10 000	10 000	
	BAS70-04-HE3_A-18	yes			(8 mm tape on 13" reel)	10 000	
	BAS70-05-E3-08	no		Common cathode	3 000	15 000	
BAS70-05	BAS70-05-HE3_A-08	yes	75G		(8 mm tape on 7" reel)	15 000	
DA370-03	BAS70-05-E3-18	no	730		10 000	10 000	
	BAS70-05-HE3_A-18	yes			(8 mm tape on 13" reel)		
	BAS70-06-E3-08	no		76G Common anode	3 000	15 000	
BAS70-06	BAS70-06-HE3_A-08	yes	76G		(8 mm tape on 7" reel)	13 000	
	BAS70-06-E3-18	no		700   0011	Common anode	10 000	10 000
	BAS70-06-HE3_A-18	yes			(8 mm tape on 13" reel)	10 000	

Rev. 1.2, 21-Feb-2024 1 Document Number: 86402



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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 <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT		
Repetitive peak reverse voltage		$V_{RRM} = V_{RWM} = V_{R}$	70	V		
Forward continuous current (1)		I <sub>F</sub>	200	mA		
Surge forward current (1)	t <sub>p</sub> < 1 s	I <sub>FSM</sub>	600	mA		
Power dissipation	on FR-4 board with recommended soldering footprint	В	220	mW		
rowei dissipation	Infinite heatsink	P <sub>tot</sub>	310	mW		

#### Note

(1) Infinite heatsink

<b>THERMAL CHARACTERISTICS</b> (T <sub>amb</sub> = 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 <sub>thJA</sub>	460	K/W		
Thermal resistance junction lead	Infinite heatsink	$R_{thJL}$	320	K/W		
Maximum junction temperature		T <sub>j</sub>	125	°C		
Storage temperature range		T <sub>stg</sub>	-65 to +150	°C		
Operating temperature range		T <sub>op</sub>	-55 to +125	°C		

<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	$I_R = 10 \mu A \text{ (pulsed)}$	$V_{BR}$	70			V
Leakage current	V <sub>R</sub> = 50 V	I <sub>R</sub>		20	100	nA
Forward voltage	I <sub>F</sub> = 1 mA	$V_{F}$			410	mV
Forward voltage (1)	I <sub>F</sub> = 50 mA	V <sub>F</sub>			1	V
Diode capacitance	V <sub>R</sub> = 0; f = 1 MHz	C <sub>D</sub>		1.5	2	pF
Reverse recovery time	$I_F = I_R = 10 \text{ mA},$ $I_R = 1 \text{ mA}, R_L = 100 \Omega$	t <sub>rr</sub>			5	ns

#### Note

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

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## TYPICAL CHARACTERISTICS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

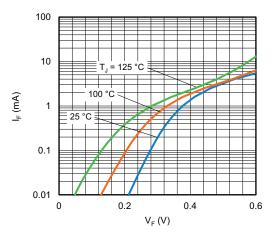


Fig. 1 - Typical Forward Current vs. Forward Voltage

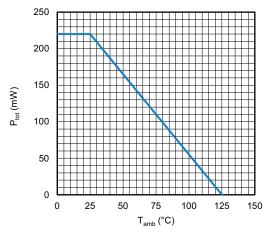


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

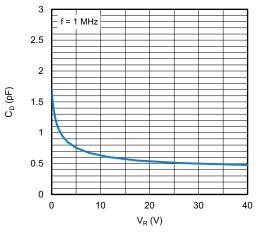


Fig. 3 - Typical Capacitance vs. Reverse Voltage

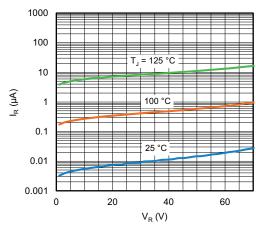


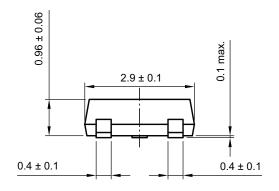
Fig. 4 - Typical Reverse Leakage Current vs. Reverse Voltage

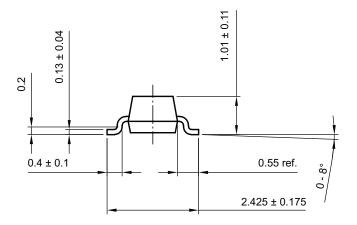


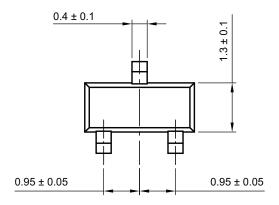
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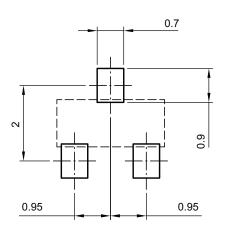
### **PACKAGE DIMENSIONS** in millimeters: **SOT-23**







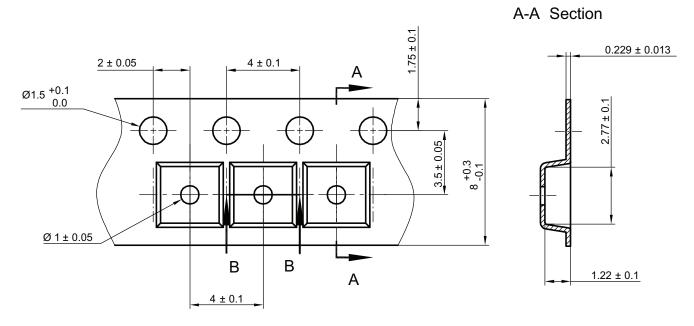
#### footprint recommendation:



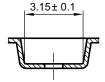
Created - Date: 18-Oct-2021 Rev. 01 - Date: 18-Jan-2022 S8-V-3929.01-009 (4)

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### **CARRIER TAPE SOT-23**

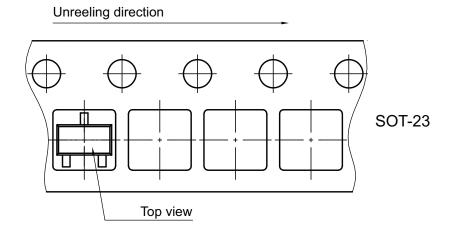


**B-B Section** 



Created Date: 04-Feb-2010 Rev. Date: 07-Feb-2022

#### **ORIENTATION IN CARRIER TAPE SOT-23**



Created Date: 04-Feb-2010 Rev. Date: 07-Nov-2022



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