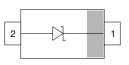


Small Signal Schottky Diode





LINKS TO ADDITIONAL RESOURCES



MECHANICAL DATA

Case: SOD-323

Weight: approx. 4 mg

Packaging codes/options:

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

FEATURES

- These diodes feature very low turn-on voltage and fast switching. These devices are protected by a PN junction guard ring against excessive voltage, such as electrostatic discharges
- AUTOMOTIVE GRADE Available Pb-free RoHS

COMPLIANT

- For general purpose applications
- AEC-Q101 qualified available
- Molding compound meets UL 94 V-0
 flammability rating
- Moisture Sensitivity Level (MSL) 1
- Base P/N-E3 RoHS-compliant, commercial grade
- Base P/N-HE3_A RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

PARTS TABLE							
PART	ORDERING CODE	AEC-Q101 QUALIFIED	TYPE MARKING	CIRCUIT CONFIGURATION	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY	
BAT42WS	BAT42WS-E3-08	No			3000	15 000	
	BAT42WS-HE3_A-08	Yes	L1	Single	(8 mm tape on 7" reel)	13 000	
	BAT42WS-E3-18	No		Single	10 000	10 000	
	BAT42WS-HE3_A-18	Yes			(8 mm tape on 13" reel)	10 000	
BAT43WS	BAT43WS-E3-08	No			3000	15 000	
	BAT43WS-HE3_A-08	Yes	L6	Single	(8 mm tape on 7" reel)	10 000	
	BAT43WS-E3-18	No		Single	10 000		
	BAT43WS-HE3_A-18	Yes			(8 mm tape on 13" reel)	10 000	

PACKAGE						
PACKAGE NAME WEIGHT		MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS		
SOD-323	4 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}	30	V		
Forward continuous current ⁽¹⁾		I _F	200	mA		
Repetitive peak forward current ⁽¹⁾		I _{FRM}	500	mA		
Surge forward current ⁽¹⁾	Duty cycle $t_p / T < 0.5$	I _{FSM}	4	А		
Power dissipation ⁽¹⁾		P _{tot}	150	mW		

Note

(1) Infinite heatsink

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THERMAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT		
Thermal resistance junction lead	Infinite heatsink	R _{thJL}	650	K/W		
Maximum junction temperature		Тj	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	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage $I_R = 100 \ \mu A \ (pulsed)$			V _(BR)	30			V
Leakage current (1)	V _R = 25 V		I _R			0.5	μA
Leakage current	V _R = 25 V, T _j = 100 °C		I _R			100	μA
	I _F = 200 mA		V _F			1000	mV
	I _F = 10 mA	BAT42WS	V _F			400	mV
Forward voltage ⁽¹⁾	I _F = 50 mA	BAT42WS	V _F			650	mV
	I _F = 2 mA	BAT43WS	V _F	260		330	mV
	l _F = 15 mA	BAT43WS	V _F			450	mV
Diode capacitance	V _R = 1 V, f = 1 MHz		CD		7		pF
Reverse recovery time	$I_F = 10 \text{ mA}, I_R = 10 \text{ mA}, \\ i_R = 1 \text{ mA}, R_L = 100 \Omega$		t _{rr}			5	ns

Note (1) Pulse test; $t_p \le 300 \ \mu s$, duty cycle $t_p/T < 0.02$





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

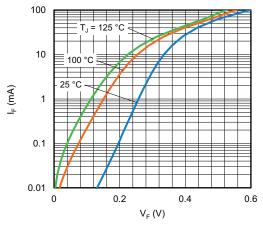


Fig. 1 - Typical Forward Current vs. Forward Voltage

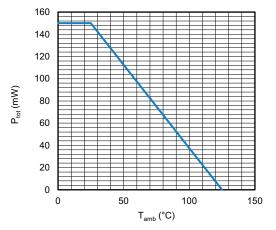


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

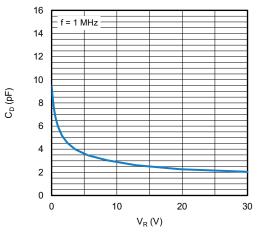


Fig. 3 - Typical Capacitance vs. Reverse Voltage

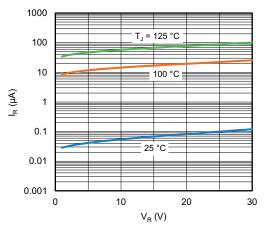
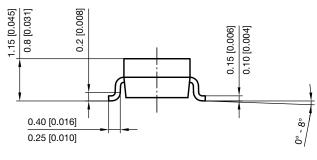
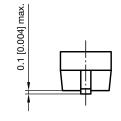


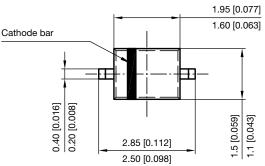
Fig. 4 - Typical Reverse Leakage Current vs. Reverse Voltage



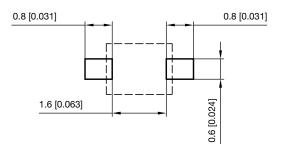
PACKAGE DIMENSIONS in millimeters (inches) SOD-323







Footprint recommendation:



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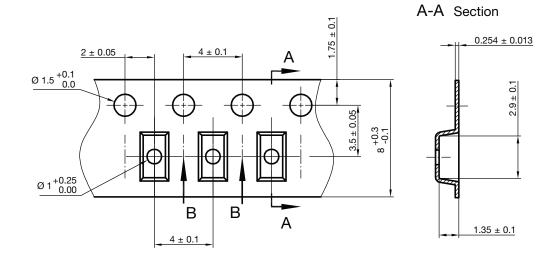
Rev. 1.1, 12-May-2025 **4** Document Number: 86464 For technical questions within your region: <u>DiodesAmericas@vishay.com</u>, <u>DiodesAsia@vishay.com</u>, <u>DiodesEurope@vishay.com</u> THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT <u>www.vishay.com/doc?91000</u>



BAT42WS, BAT43WS

Vishay Semiconductors

CARRIER TAPE SOD-323

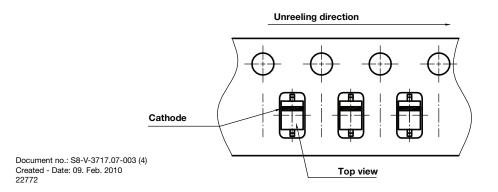


B-B Section



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ORIENTATION IN CARRIER TAPE SOD-323





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