



#### **Features**

- Low Forward Voltage Drop
- Guard Ring Die Construction for Transient Protection
- High Conductance
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- For automotive applications requiring specific change control (i.e.: parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please refer to the related automotive grade (Qsuffix) part. A listing can be found at https://www.diodes.com/products/automotive/automotive

products/.

This part is qualified to JEDEC standards (as references in AEC-Q) for High Reliability.
<u>https://www.diodes.com/quality/product-definitions/</u>

#### SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

## **Mechanical Data**

- Package: SOD323
- Package Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 (3)
- Polarity: Cathode Band
- Weight: 0.004 grams (Approximate)



Top View

### Ordering Information (Note 4)

Part Number	Package	Packing	
Fait Nulliber		Qty.	Carrier
B0520WS-7-F	SOD323	3000	Tape & Reel

1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.

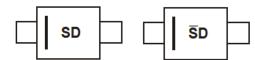
2. See https://www.diodes.com/quality/lead-free/ for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.

3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

4. For packaging details, go to our website at https://www.diodes.com/design/support/packaging/diodes-packaging/.

### **Marking Information**

Notes:



SD &  $\overline{SD}$  = Product Type Marking Code



# Maximum Ratings (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	Vrrm Vrwm Vr	20	V
RMS Reverse Voltage	VR(RMS)	14	V
Average Rectified Output Current	lo	0.5	А
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	2	А

# **Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	PD	235	mW
Typical Thermal Resistance Junction to Ambient (Note 5)	R <sub>0JA</sub>	426	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +125	O°

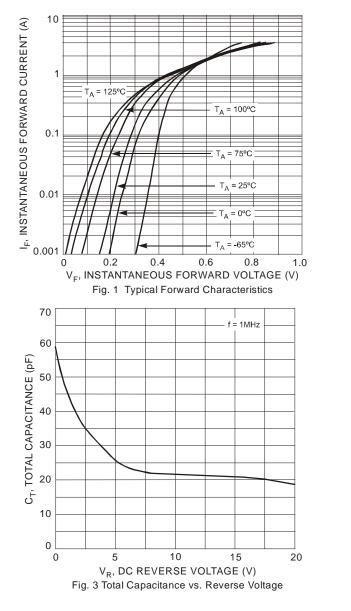
#### Electrical Characteristics (@TA = +25°C, unless otherwise specified.)

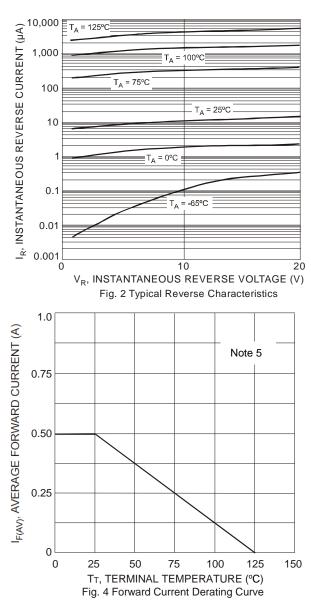
Characteristic	Symbol	Value	Unit	Test Conditions
Minimum Reverse Breakdown Voltage (Note 6)	V(BR)R	20	V	I <sub>R</sub> = 0.5mA
Maximum Forward Voltage Drop	VF	0.310 0.430	V	IF = 0.1A IF = 0.5A
Maximum Leakage Current (Note 6)	I <sub>R</sub>	100 250	μΑ	V <sub>R</sub> = 10V V <sub>R</sub> = 20V
Typical Total Capacitance	Ст	58	pF	f = 1MHz, V <sub>R</sub> = 0V <sub>DC</sub>

Notes: 5. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at http://www.diodes.com/package-outlines.html. 6. Short duration pulse test used to minimize self-heating effect.



# **B0520WS**

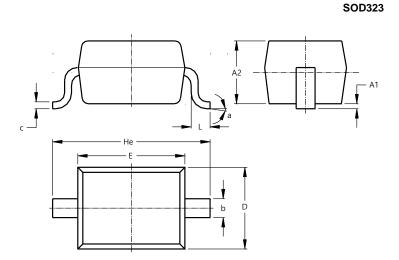






## **Package Outline Dimensions**

Please see http://www.diodes.com/package-outlines.html for the latest version.

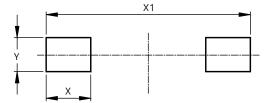


SOD323				
Dim	Min	Max	Тур	
A1		0.10	0.05	
A2	1.00	1.10	1.05	
b	0.25	0.35	0.30	
С	0.10	0.15	0.11	
D	1.20	1.40	1.30	
Е	1.60	1.80	1.70	
He	2.30	2.70	2.50	
L	0.20	0.40	0.30	
а	0°	8º		
All Dimensions in mm				

# Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.

SOD323



Dimensions	Value (in mm)
Х	0.590
X1	2.700
Y	0.450



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