

## Features

- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- Negligible Reverse Recovery Time
- Low Reverse Capacitance
- Ultra-Small Surface Mount Package
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**
- **PPAP Capable (Note 4)**

## Mechanical Data

- Case: SOD323
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Leads: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Polarity: Cathode Band
- Marking Information: See Below
- Ordering Information: See Below
- Weight: 0.004 grams (approximate)



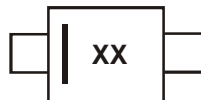
Top View

## Ordering Information (Note 5)

Part Number	Compliance	Case	Packaging
SD103AWS-7-F	AEC-Q101	SOD323	3000/Tape & Reel
SD103BWS-7-F	AEC-Q101	SOD323	3000/Tape & Reel
SD103CWS-7-F	AEC-Q101	SOD323	3000/Tape & Reel
SD103BWSQ-7-F	Automotive	SOD323	3000/Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) 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. Automotive products are AEC-Q101 qualified and are PPAP capable. Automotive, AEC-Q101 and standard products are electrically and thermally the same, except where specified. For more information, please refer to [http://www.diodes.com/quality/product\\_compliance\\_definitions/](http://www.diodes.com/quality/product_compliance_definitions/).
  5. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

## Marking Information



- xx = Product Type Marking Code  
 S4 = SD103AWS  
 S5 or S4 = SD103BWS  
 S6 or S5 or S4 = SD103CWS

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

Characteristic	Symbol	SD103AWS	SD103BWS	SD103CWS	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	40	30	20	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	28	21	14	V
Forward Continuous Current (Note 6)	I <sub>FM</sub>	350			mA
Non-Repetitive Peak Forward Surge Current @ t ≤ 1.0s	I <sub>FSM</sub>	1.5			A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P <sub>D</sub>	200	mW
Thermal Resistance, Junction to Ambient Air (Note 6)	R <sub>θJA</sub>	625	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +125	°C

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic		Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Breakdown Voltage (Note 7)	SD103AWS	V <sub>(BR)R</sub>	40	—	—	V	I <sub>R</sub> = 100μA
	SD103BWS		30				
	SD103CWS		20				
Forward Voltage Drop		V <sub>F</sub>	—	—	0.37 0.60	V	I <sub>F</sub> = 20mA I <sub>F</sub> = 200mA
Peak Reverse Current (Note 7)	SD103AWS SD103BWS SD103CWS	I <sub>R</sub>	—	—	5.0	μA	V <sub>R</sub> = 30V V <sub>R</sub> = 20V V <sub>R</sub> = 10V
Total Capacitance		C <sub>T</sub>	—	28	—	pF	V <sub>R</sub> = 0V, f = 1.0MHz
Reverse Recovery Time		t <sub>rr</sub>	—	10	—	ns	I <sub>F</sub> = I <sub>R</sub> = 200mA, I <sub>rr</sub> = 0.1 x I <sub>R</sub> , R <sub>L</sub> = 100Ω

Notes: 6. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.  
7. Short duration test pulse used to minimize self-heating effect.

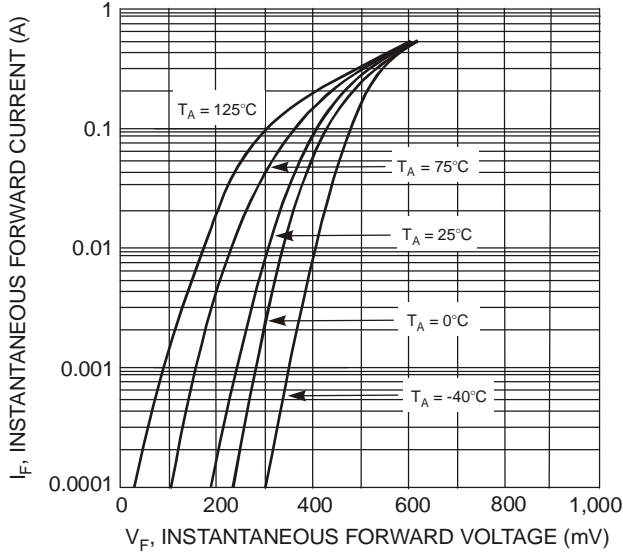


Fig. 1 Typical Forward Characteristics

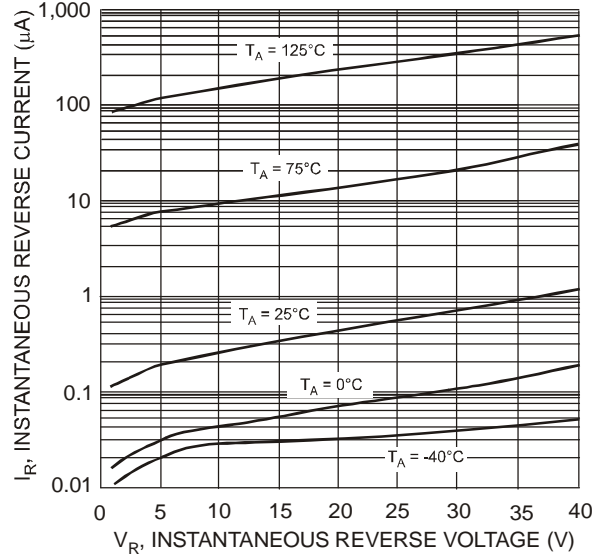


Fig. 2 Typical Reverse Characteristics

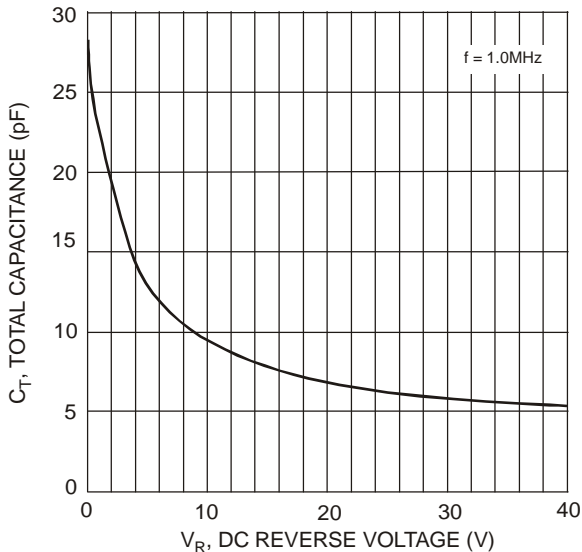


Fig. 3 Total Capacitance vs. Reverse Voltage

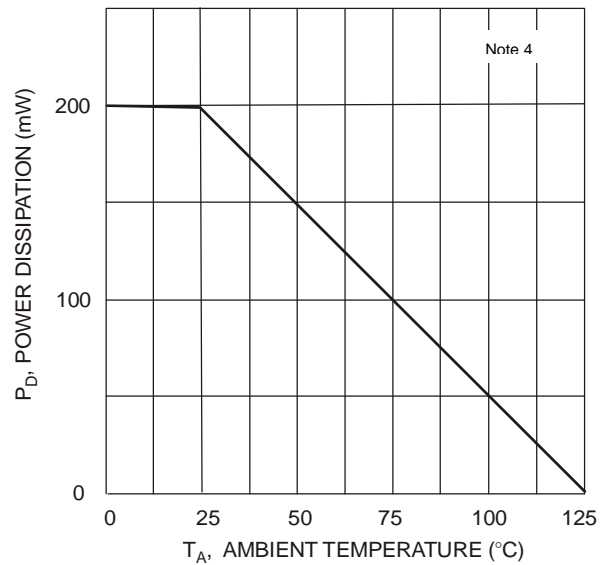
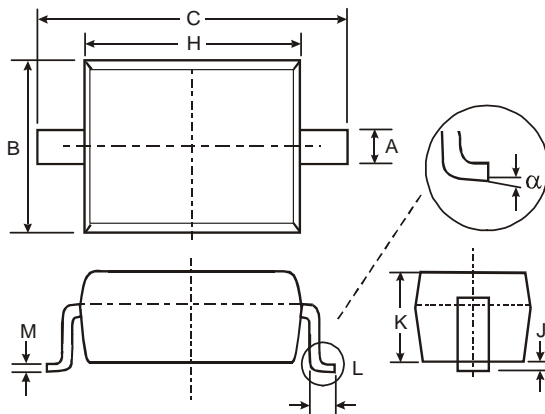


Fig. 4 Power Derating Curve

**Package Outline Dimensions**

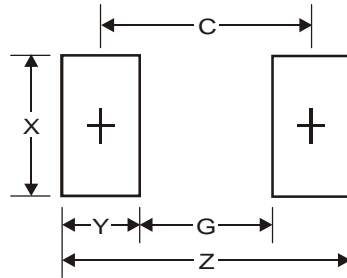
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



SOD323		
Dim	Min	Max
A	0.25	0.35
B	1.20	1.40
C	2.30	2.70
H	1.60	1.80
J	0.00	0.10
K	1.0	1.1
L	0.20	0.40
M	0.10	0.15
α	0°	8°
<b>All Dimensions in mm</b>		

## Suggested Pad Layout

Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



Dimensions	Value (in mm)
Z	3.75
G	1.05
X	0.65
Y	1.35
C	2.40

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