

## Product Summary

$V_R$ (V)	$I_{FM}$ (mA)	$V_F$ MAX (V) @ 20mA, +25°C	$I_R$ MAX (μA) @ $V_R$ , +25°C
30	350	0.37	5.0
40			

## Description and Applications

These Schottky barrier rectifiers are designed to meet the stringent requirements of automotive applications. They are ideally suited to use as:

- Polarity protection diodes
- Recirculating diodes
- Switching diodes

## Features and Benefits

- 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)**
- The SD103AWSQ - SD103BWSQ are suitable for automotive applications requiring specific change control; these parts are AEC-Q101 qualified, PPAP capable, and manufactured in IATF 16949 certified facilities.

<https://www.diodes.com/quality/product-definitions/>

## 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 Annealed over Alloy 42 Leadframe. Solderable per MIL-STD-202, Method 208 Ⓔ3
- Polarity: Cathode Band
- Weight: 0.004 grams (Approximate)



Top View

## Ordering Information (Note 4)

Orderable Part Number	Package	Packing	
		Qty.	Carrier
SD103AWSQ-7-F	SOD323	3000	Tape & Reel
SD103BWSQ-7-F	SOD323	3000	Tape & Reel

- Notes:
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



XX = Product Type Marking Code  
S4 = SD103AWSQ  
S5 or S4 = SD103BWSQ

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

Characteristic	Symbol	SD103AWSQ	SD103BWSQ	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	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	28	21	V
Forward Continuous Current (Note 5)	I <sub>FM</sub>	350		mA
Non-Repetitive Peak Forward Surge Current @ 8.3ms Half Sine Waveform	I <sub>FSM</sub>	1.5		A
Electrostatic Discharge	HBM	6000		V
Electrostatic Discharge	MM	400		V
Electrostatic Discharge	CDM	1000		V

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P <sub>D</sub>	200	mW
Thermal Resistance, Junction to Ambient Air (Note 5)	R <sub>θJA</sub>	500	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 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 6)	V <sub>(BR)R</sub>	40 30	—	—	V	I <sub>R</sub> = 100μA I <sub>R</sub> = 100μA
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 6)	I <sub>R</sub>	—	—	5.0	μA	V <sub>R</sub> = 30V V <sub>R</sub> = 20V
Total Capacitance	C <sub>T</sub>	—	35	—	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 × I <sub>R</sub> , R <sub>L</sub> = 100Ω

Notes: 5. Device mounted on FR-4 PCB with minimum recommended pad layout per <http://www.diodes.com/package-outlines.html>.  
6. Short duration test pulse used to minimize self-heating effect.

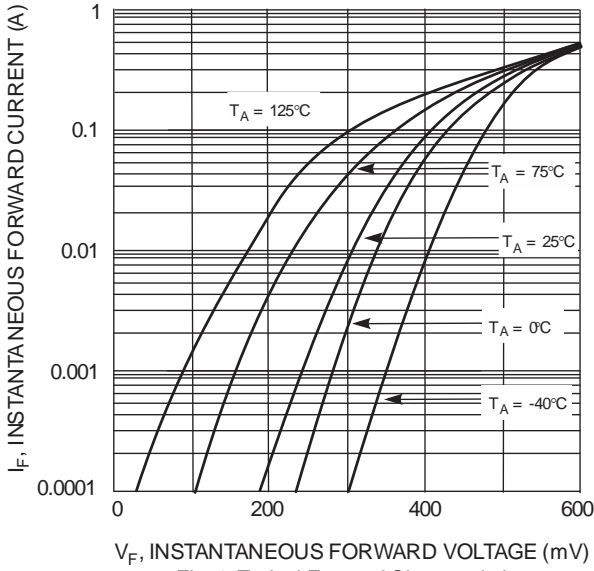


Fig. 1 Typical Forward Characteristics

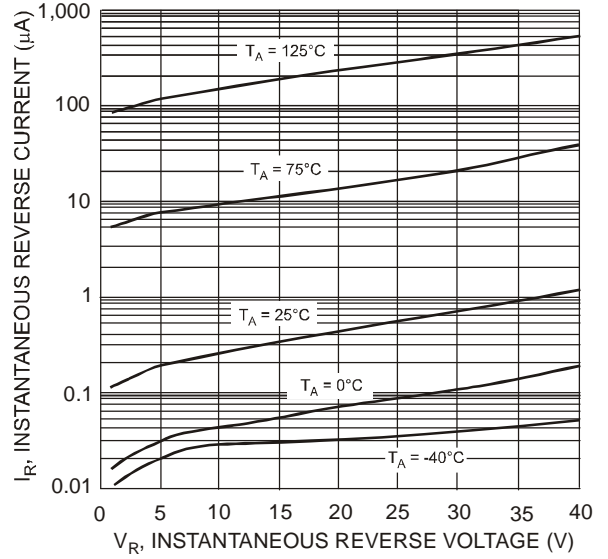


Fig. 2 Typical Reverse Characteristics

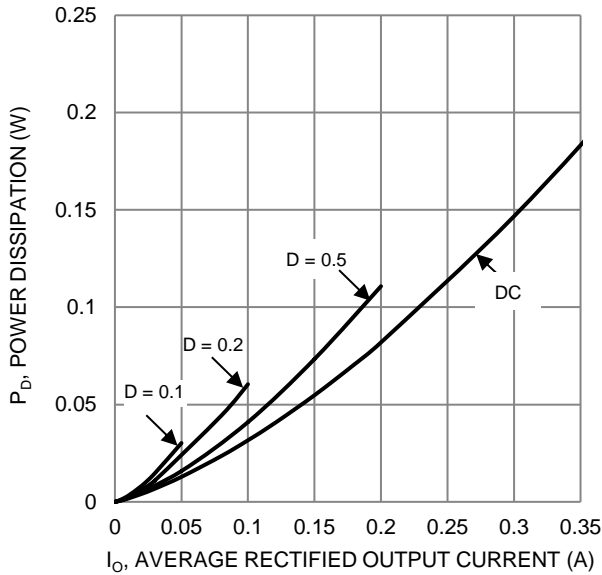


Fig. 3 Forward Power Dissipation  $T_J = 125^\circ\text{C}$

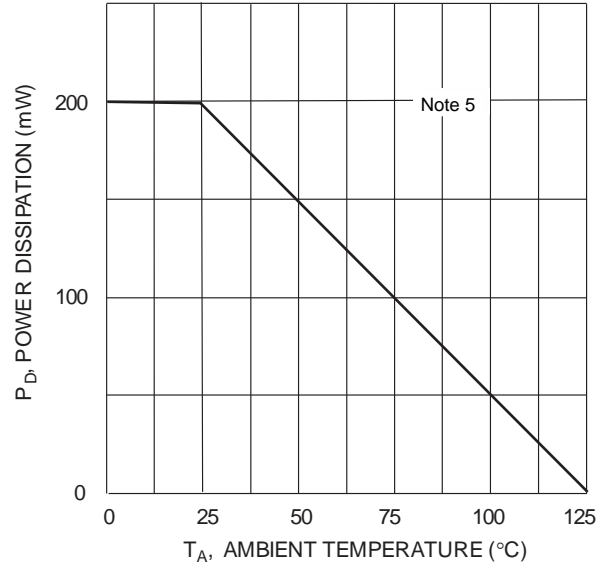


Fig. 4 Power Derating Curve

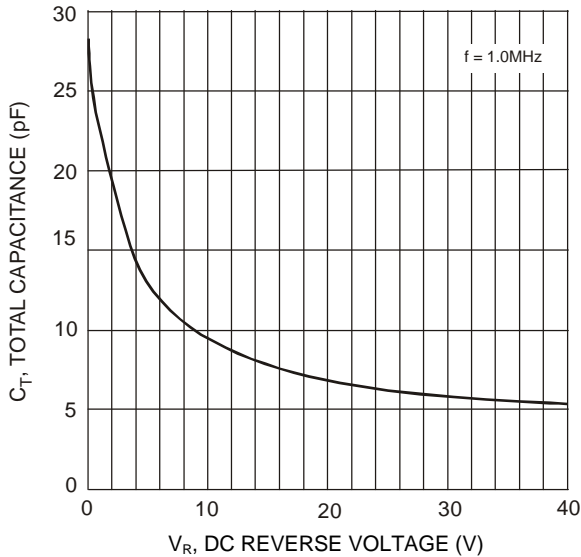
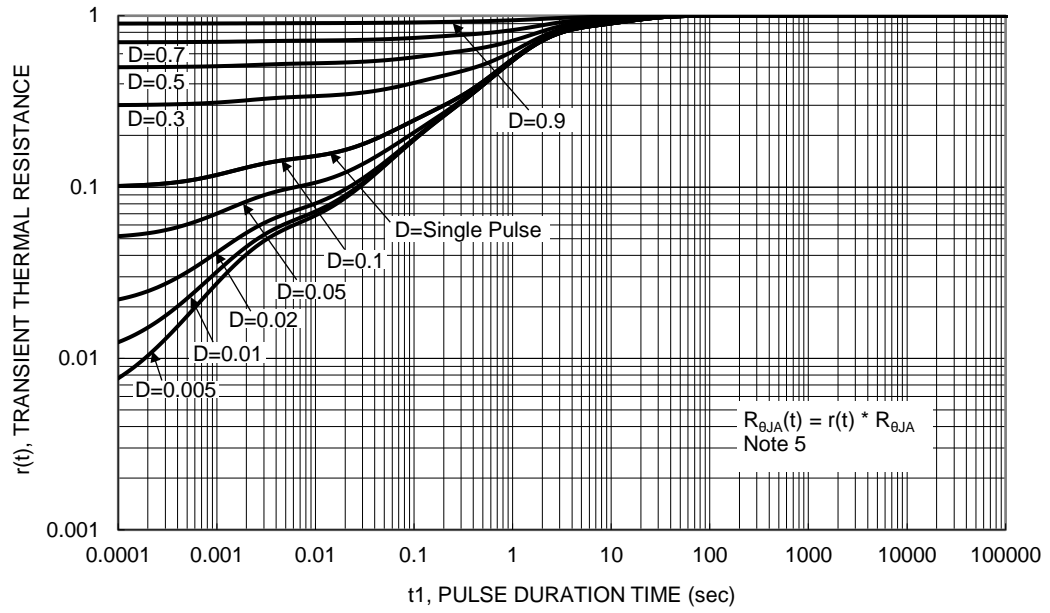


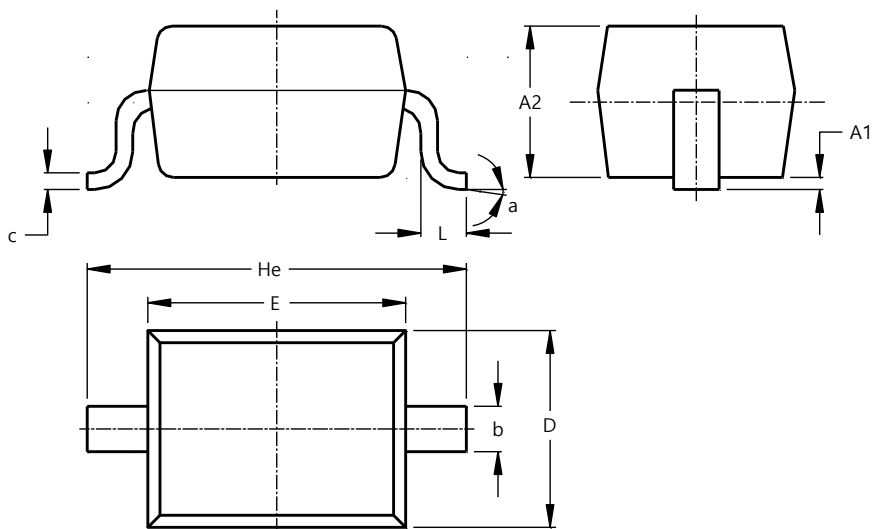
Fig. 5 Total Capacitance vs. Reverse Voltage



## Package Outline Dimensions

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

SOD323

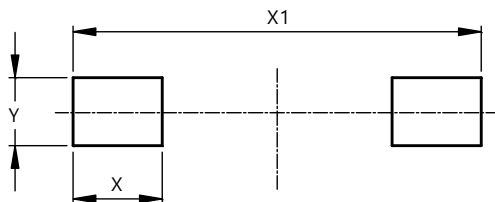


SOD323			
Dim	Min	Max	Typ
A1	--	0.10	0.05
A2	1.00	1.10	1.05
b	0.25	0.35	0.30
c	0.10	0.15	0.11
D	1.20	1.40	1.30
E	1.60	1.80	1.70
He	2.30	2.70	2.50
L	0.20	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

## Suggested Pad Layout

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

SOD323



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

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