

Product Summary

V_R (V)	I_{FM} (mA)	V_F MAX (V) @ 20mA, +25°C	I_R MAX (μ A) @ 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 (63)
- 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 (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	SD103AWSQ	SD103BWSQ	Unit
Peak Repetitive Reverse Voltage	V_{RRM}			
Working Peak Reverse Voltage	V_{RWM}	40	30	V
DC Blocking Voltage	V_R			
RMS Reverse Voltage	$V_{R(\text{RMS})}$	28	21	V
Forward Continuous Current (Note 5)	I_{FM}		350	mA
Non-Repetitive Peak Forward Surge Current @ 8.3ms Half Sine Waveform	I_{FSM}		1.5	A
Electrostatic Discharge	HBM		6000	V
Electrostatic Discharge	MM		400	V
Electrostatic Discharge	CDM		1000	V

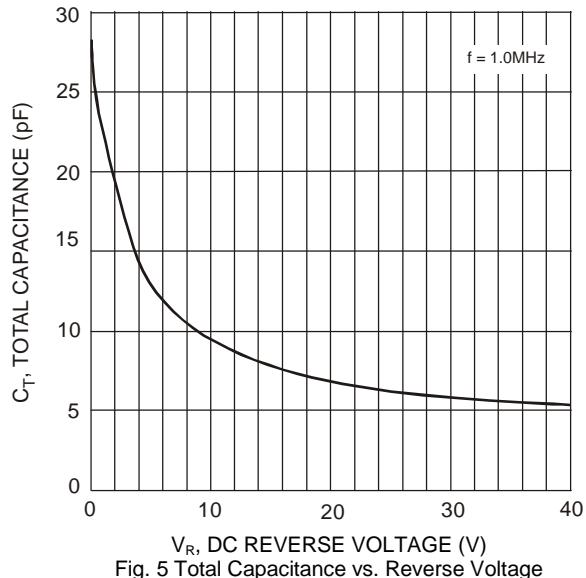
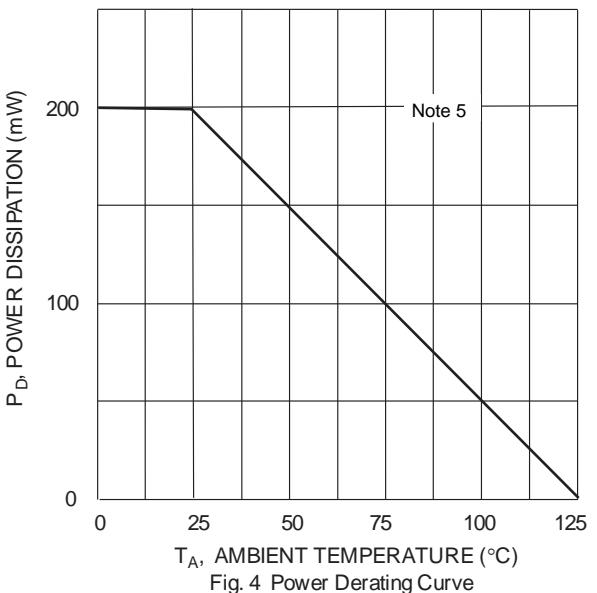
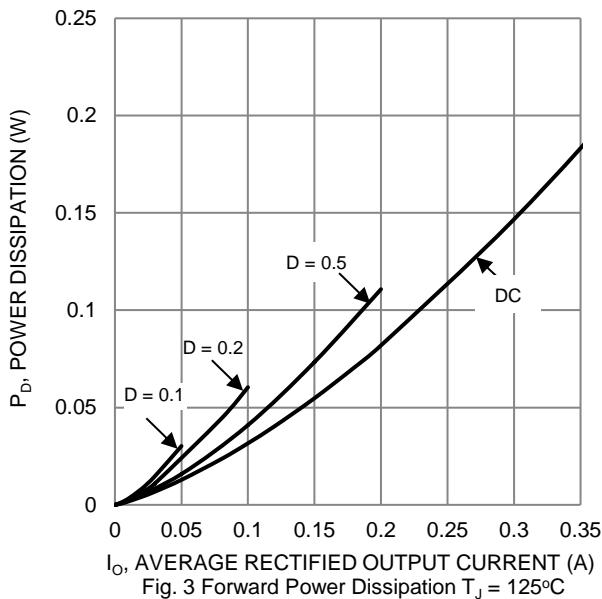
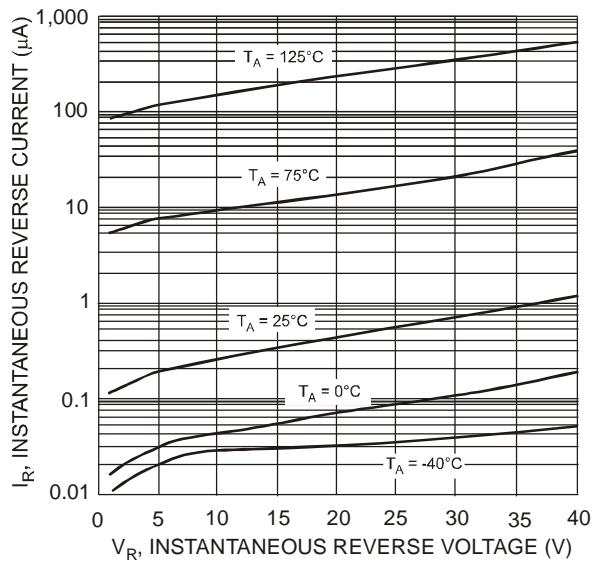
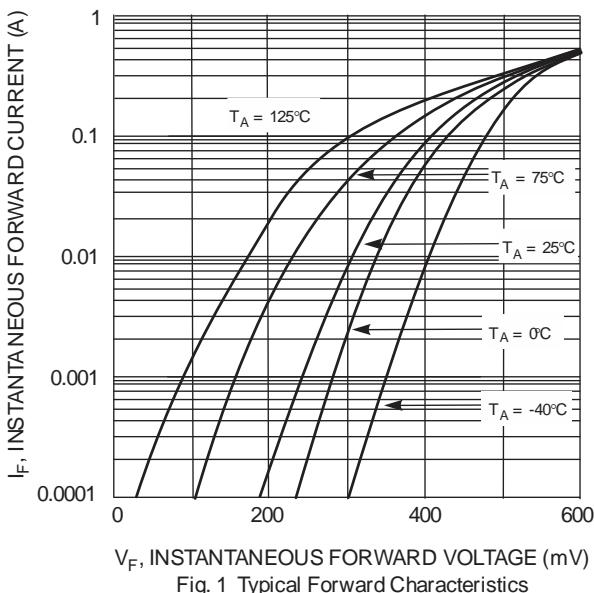
Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	200	mW
Thermal Resistance, Junction to Ambient Air (Note 5)	$R_{\theta JA}$	500	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +125	°C

Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Breakdown Voltage (Note 6)	$V_{(BR)R}$ SD103AWSQ SD103BWSQ	40 30	—	—	V	$I_R = 100\mu\text{A}$ $I_R = 100\mu\text{A}$
Forward Voltage Drop	V_F	—	—	0.37 0.60	V	$I_F = 20\text{mA}$ $I_F = 200\text{mA}$
Peak Reverse Current (Note 6)	I_R SD103AWSQ SD103BWSQ	—	—	5.0	μA	$V_R = 30\text{V}$ $V_R = 20\text{V}$
Total Capacitance	C_T	—	35	—	pF	$V_R = 0\text{V}$, $f = 1.0\text{MHz}$
Reverse-Recovery Time	t_{RR}	—	10	—	ns	$I_F = I_R = 200\text{mA}$, $I_{RR} = 0.1 \times I_R$, $R_L = 100\Omega$

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.



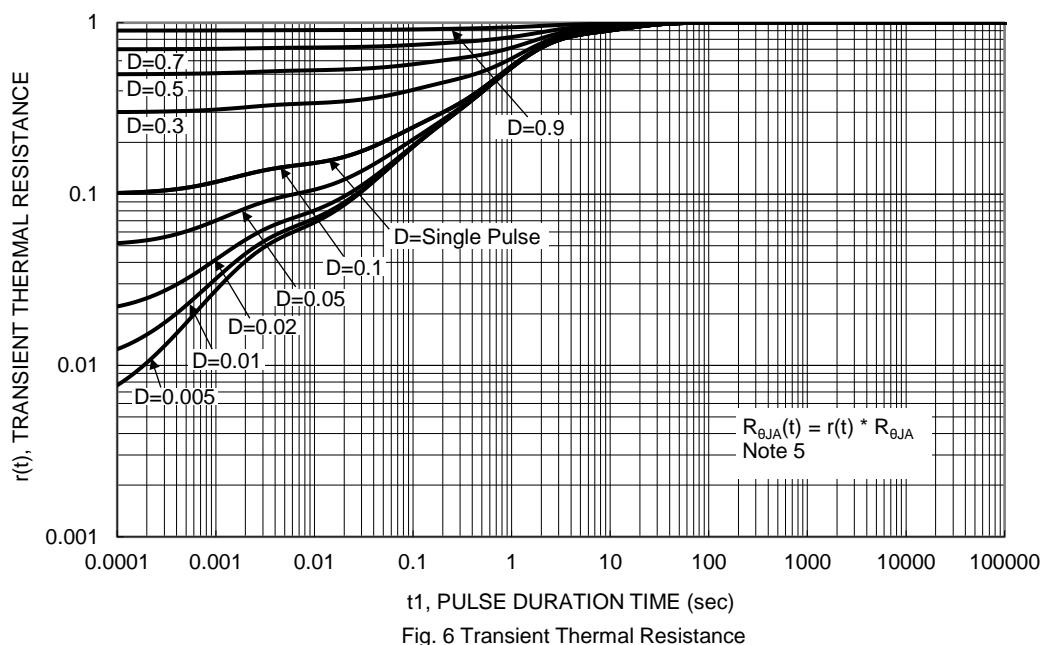
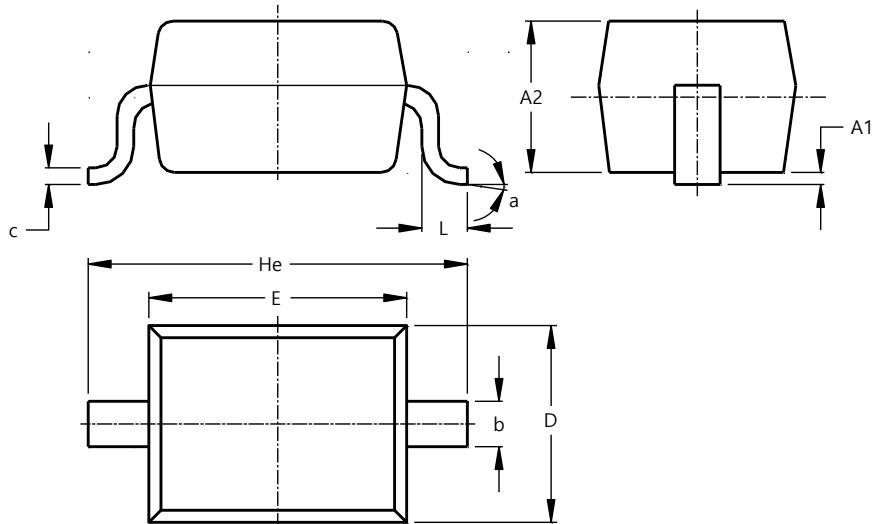


Fig. 6 Transient Thermal Resistance

Package Outline Dimensions

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

SOD323



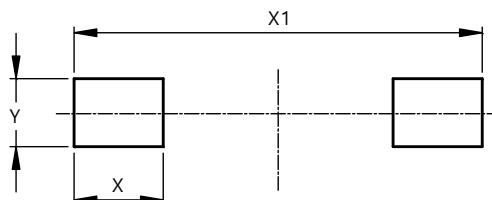
SOD323			
Dim	Min	Max	Typ
A1	--	0.10	0.05
A2	1.00	1.10	1.05
b	0.25	0.35	0.30
c	0.10	0.15	0.11
D	1.20	1.40	1.30
E	1.60	1.80	1.70
He	2.30	2.70	2.50
L	0.20	0.40	0.30
a	0°	8°	--

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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