Product Summary (@T_A = +25°C)

Name	V_{RRM} (V)	I_O (A)	V_F Max (V)	I_R Max (µA)
SD103AW	40	0.2	0.60	5.0µA@30V
SD103BW	30	0.2	0.60	5.0µA@20V
SD103CW	20	0.2	0.60	5.0µA@10V

Description

These are 0.2A, 20V/30V/40V Schottky rectifiers packaged in SOD123 package.

Applications

Providing low V_F and low reserve leakage, this device is ideal for use in general rectification applications such as:

- Low voltage rectifications
- High-efficiency DC-DC conversions
- Switch mode power supplies
- Inverse polarity protections

Features and Benefits

- Low Forward Voltage Drop (VF)
- Better Efficiency and Cooler Operation
- Guard Ring Construction for Transient Protection
- **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 contact us or your local Diodes representative.**
  https://www.diodes.com/quality/product-definitions/

Mechanical Data

- Package: SOD123
- Package Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Alloy 42 Leadframe. Solderable per MIL-STD-202, Method 208 e3
- Polarity: Cathode Band
- Weight: 0.01 grams (Approximate)

SOD123

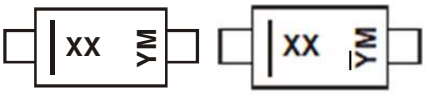
Top View

Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
SD103AW-7-F	SOD123	3000	Tape and Reel
SD103BW-7-F	SOD123	3000	Tape and Reel
SD103CW-7-F	SOD123	3000	Tape and Reel
SD103CW-13-F	SOD123	10,000	Tape and 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/.

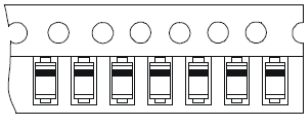
Marking Information



Bar Denotes Cathode Pin

XX = Product Type Marking Code
S4 = SD103AW
S5 or S4 = SD103BW
S6 or S5 or S4 = SD103CW

YM & $\overline{Y}$M = Date Code Marking
Y& $\overline{Y}$ = Year (ex: J = 2022)
M = Month (ex: 9 = September)



Date Code Key

Year	2003	…	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Code	P	…	J	K	L	M	N	O	P	R	S	T

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	SD103AW	SD103BW	SD103CW	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	40	30	20	V
RMS Reverse Voltage	$V_{R(RMS)}$	28	21	14	V
Forward Continuous Current (Note 5)	I_{FM}	350			mA
Non-Repetitive Peak Forward Surge Current @ t ≤ 1.0s	I_{FSM}	1.5			A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P_D	367	mW
Typical Thermal Resistance Junction to Ambient (Note 5)	$R_{\theta JA}$	340	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

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

Characteristic		Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	SD103AW SD103BW SD103CW	$V_{(BR)R}$	40 30 20	—	—	V	I_R = 100μA
Forward Voltage Drop		V_{FM}	—	—	0.37 0.60	V	I_F = 20mA I_F = 200mA
Peak Reverse Current (Note 6)	SD103AW SD103BW SD103CW	I_{RM}	—	—	5.0	μA	V_R = 30V V_R = 20V V_R = 10V
Total Capacitance		C_T	—	28	—	pF	V_R = 0V, f = 1.0MHz
Reverse Recovery Time		t_{RR}	—	10	—	ns	I_F = I_R = 200mA, I_{RR} = 0.1 x I_R, R_L = 100Ω

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

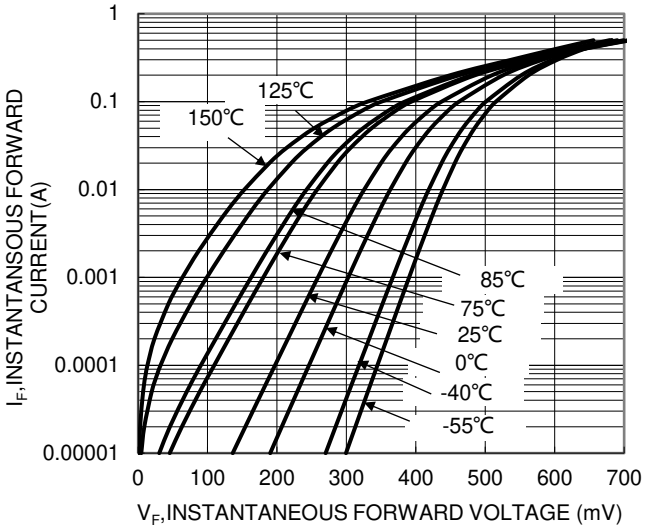


Fig. 1 Typical Forward Characteristics

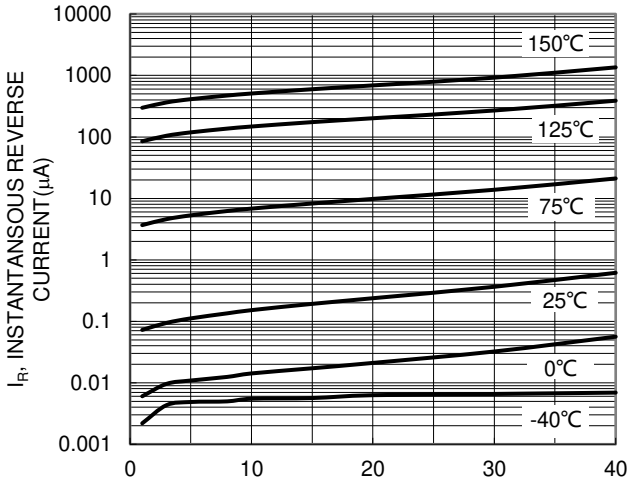


Fig. 2 Typical Reverse Characteristics

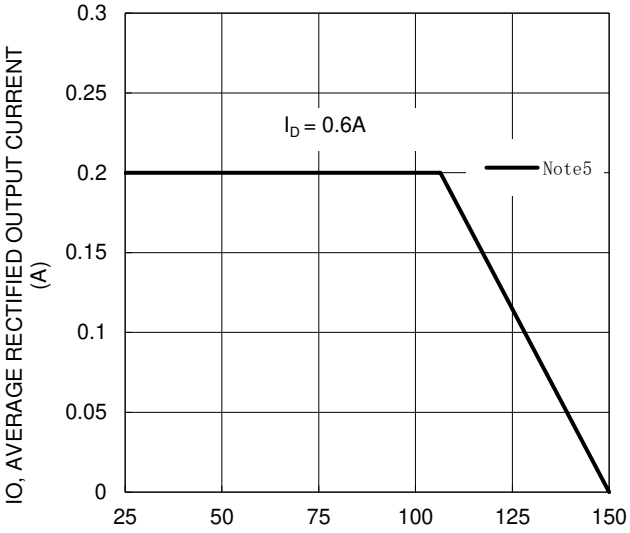


Fig 4. DC Forward Current Derating

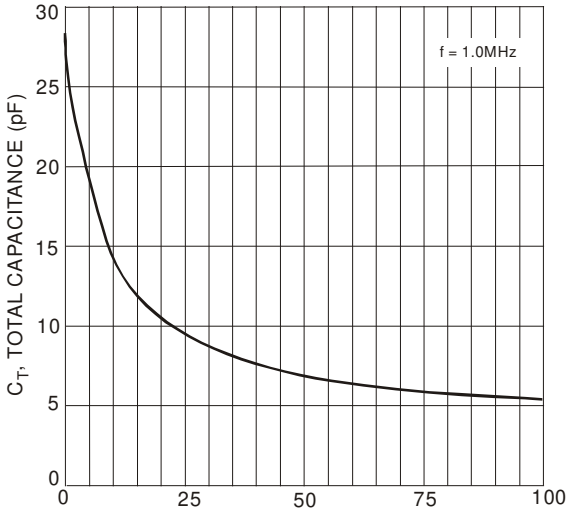
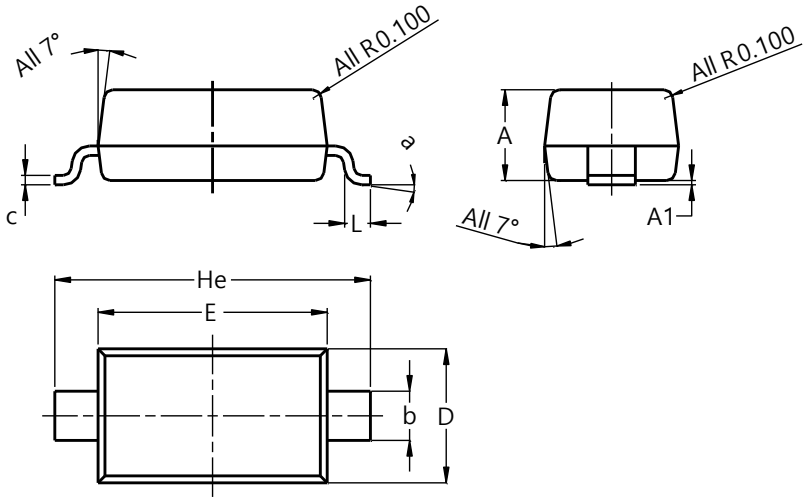


Fig. 3 Total Capacitance vs. Reverse Voltage

Package Outline Dimensions

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

SOD123

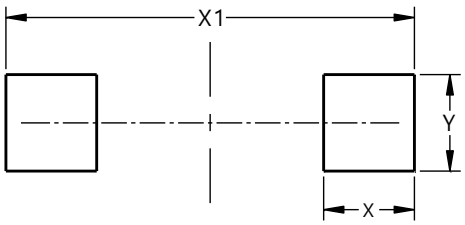


SOD123			
Dim	**Min**	**Max**	**Typ**
A	1.00	1.35	1.05
A1	0.00	0.10	0.05
b	0.52	0.62	0.57
c	0.10	0.15	0.11
D	1.40	1.70	1.55
E	2.55	2.85	2.65
He	3.55	3.85	3.65
L	0.25	0.40	0.30
a	0º	8º	--
All Dimensions in mm			

Suggested Pad Layout

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

SOD123



Dimensions	Value (in mm)
X	0.900
X1	4.050
Y	0.950

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