

## Product Summary (@T<sub>A</sub> = +25°C)

Name	V <sub>RRM</sub> (V)	I <sub>O</sub> (A)	V <sub>F</sub> Max (V)	I <sub>R</sub> 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 rectifier packaged in SOD123 package.

## Applications

Providing low V<sub>F</sub> and low reverse leakage, this device is ideal for use in general rectification applications such as:

- Low Voltage Rectification
- High-Efficiency DC-DC Conversion
- Switch Mode Power Supply
- Inverse Polarity Protection

## Features and Benefits

- Low Forward Voltage Drop (V<sub>F</sub>)
- 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)**

## Mechanical Data

- Case: SOD123
- Case 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
- Polarity: Cathode Band
- Weight: 0.01 grams (Approximate)

SOD123



Top View

## Ordering Information (Note 4)

Part Number	Case	Packaging
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) 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. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

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

Characteristic	Symbol	SD103AW	SD103BW	SD103CW	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>				V
Working Peak Reverse Voltage	V <sub>RWM</sub>	40	30	20	V
DC Blocking Voltage	V <sub>R</sub>				V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	28	21	14	V
Forward Continuous Current (Note 5)	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 5)	$P_D$	367	mW
Typical Thermal Resistance Junction to Ambient (Note 5)	$R_{\theta JA}$	340	$^{\circ}C/W$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^{\circ}C$

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

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

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.

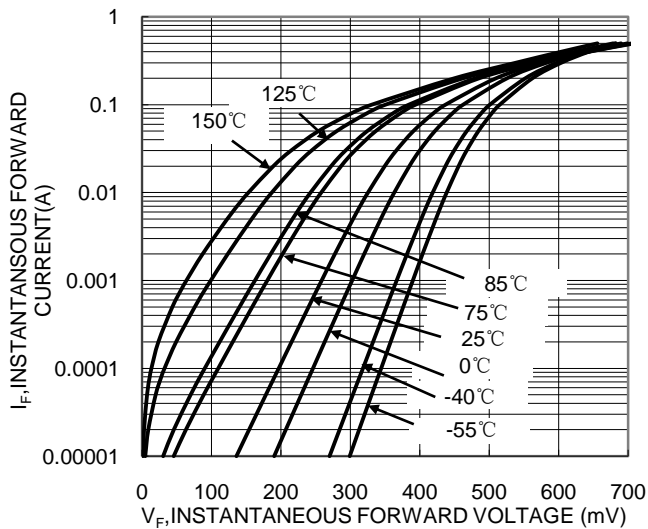


Fig. 1 Typical Forward Characteristics

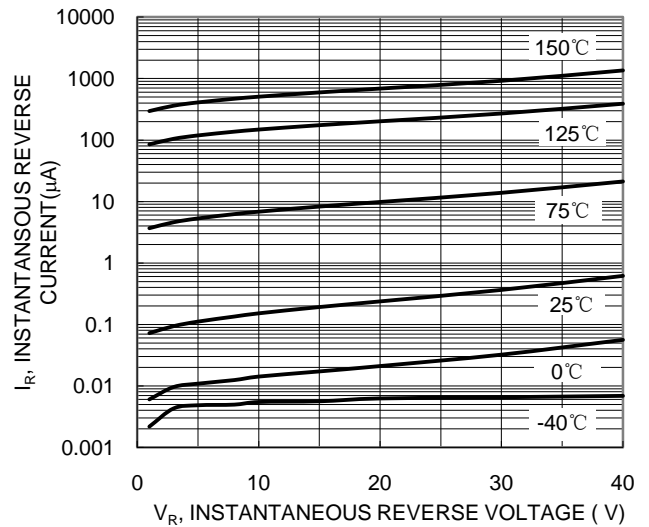


Fig. 2 Typical Reverse Characteristics

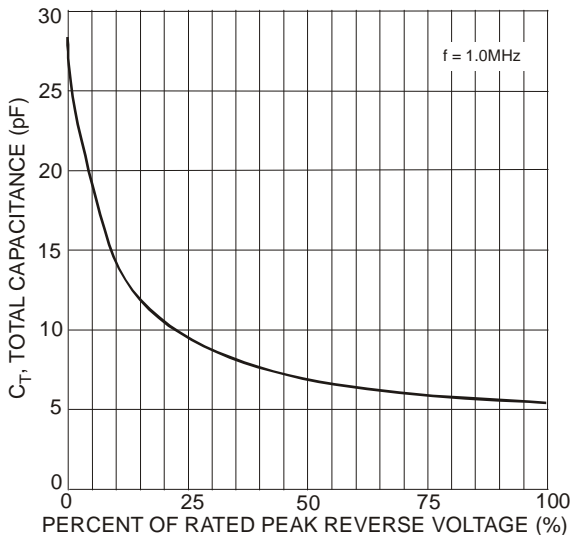


Fig. 3 Total Capacitance vs. Reverse Voltage

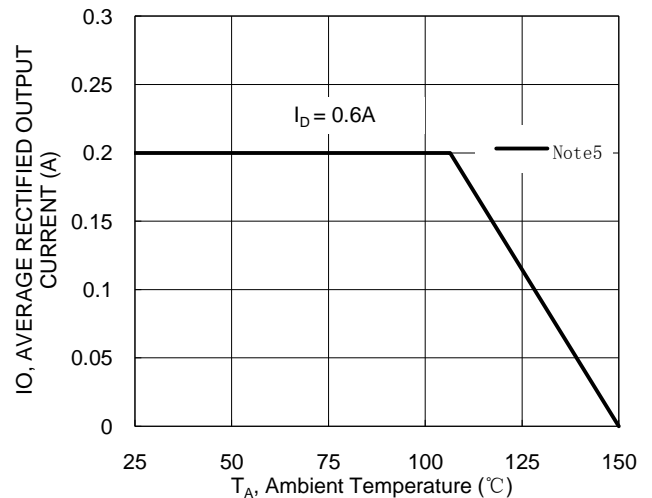
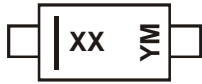
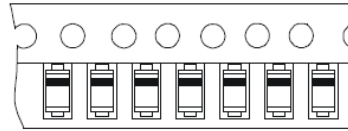


Fig. 4. DC Forward Current Derating

### Marking Information



XX= Product Type Marking Code  
 S4 = SD103AW  
 S5 or S4 = SD103BW  
 S6 or S5 or S4 = SD103CW  
 Y = Year (ex: D = 2016)  
 M = Month (ex: 9 = September)  
 Bar Denotes Cathode Pin



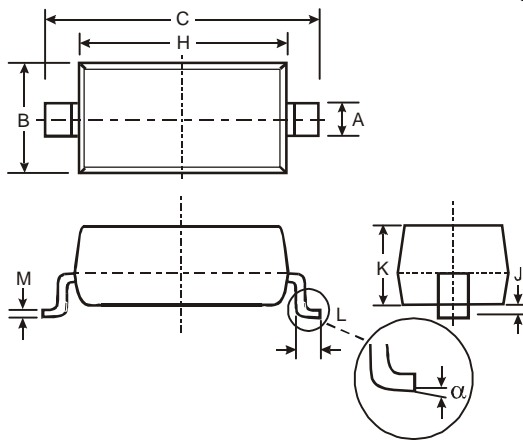
Year	2013	2014	2015	2016	2017	2018	2019	2020
Code	A	B	C	D	E	F	G	H

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

### Package Outline Dimensions

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

SOD123

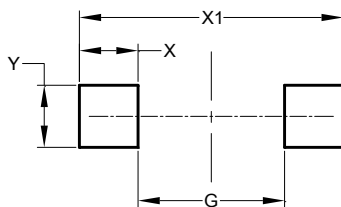


SOD123		
Dim	Min	Max
A	0.55 Typ	
B	1.40	1.70
C	3.55	3.85
H	2.55	2.85
J	0.00	0.10
K	1.00	1.35
L	0.25	0.40
M	0.10	0.15
$\alpha$	0	8°
All Dimensions in mm		

### Suggested Pad Layout

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

SOD123



Dimensions	Value(in mm)
G	2.250
X	0.900
X1	4.050
Y	0.950

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