

SD103CWS-7 Datasheet



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DiGi Electronics Part Number	SD103CWS-7-DG
Manufacturer	Diodes Incorporated
Manufacturer Product Number	SD103CWS-7
Description	DIODE SCHOTTKY 20V 350MA SOD323
Detailed Description	Diode 20 V 350mA Surface Mount SOD-323

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Purchase and inquiry

Manufacturer Product Number:

SD103CWS-7

Series:

-

Technology:

Schottky

Current - Average Rectified (Io):

350mA

Speed:

Fast Recovery =< 500ns, > 200mA (Io)

Current - Reverse Leakage @ Vr:

5 μ A @ 10 V

Mounting Type:

Surface Mount

Supplier Device Package:

SOD-323

Base Product Number:

SD103C

Manufacturer:

Diodes Incorporated

Product Status:

Discontinued at Digi-Key

Voltage - DC Reverse (Vr) (Max):

20 V

Voltage - Forward (Vf) (Max) @ If:

600 mV @ 200 mA

Reverse Recovery Time (trr):

10 ns

Capacitance @ Vr, F:

28pF @ 0V, 1MHz

Package / Case:

SC-76, SOD-323

Operating Temperature - Junction:

-65°C ~ 125°C

Environmental & Export classification

RoHS Status:

RoHS non-compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.10.0070

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99



SD103AWS - SD103CWS

SURFACE-MOUNT SCHOTTKY BARRIER DIODE

Product Summary

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

Description and Applications

This Schottky barrier device has been designed to meet the stringent requirements of automotive applications. The devices are ideally suited to use as:

- Polarity protection diodes
- Re-circulating 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)**
- **This part is qualified to JEDEC standards (as references in AEC-Q) for High Reliability.**
<https://www.diodes.com/quality/product-definitions/>
- **An automotive-compliant part is available under separate datasheet ([SD103AWSQ - SD103BWSQ](#))**

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 Plated Leads, Solderable per MIL-STD-202, Method 208 e3
- Polarity: Cathode Band
- Weight: 0.004 grams (Approximate)



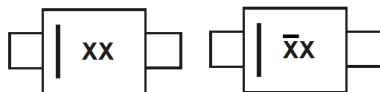
Top View

Ordering Information (Note 4)

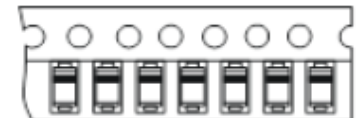
Part Number	Package	Packing	
		Qty.	Carrier
SD103AWS-7-F	SOD323	3,000	Tape & Reel
SD103BWS-7-F	SOD323	3,000	Tape & Reel
SD103CWS-7-F	SOD323	3,000	Tape & Reel

- 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 & $\bar{S}4$ = SD103AWS
 S5 or S4 & $\bar{S}5$ or $\bar{S}4$ = SD103BWS
 S6 or S5 or S4 & $\bar{S}6$ or $\bar{S}5$ or $\bar{S}4$ = SD103CWS





SD103AWS - SD103CWS

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

Characteristic	Symbol	SD103AWS	SD103BWS	SD103CWS	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	40	30	20	V
Working Peak Reverse Voltage	V _{RWM}				
DC Blocking Voltage	V _R				
RMS Reverse Voltage	V _{R(RMS)}	28	21	14	V
Forward Continuous Current	I _{FM}	350			mA
Non-Repetitive Peak Forward Surge Current @ 8.3ms Half Sine Waveform	I _{FSM}	1.5			A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P _D	200	mW
Thermal Resistance, Junction to Ambient Air (Note 5)	R _{θJA}	625	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +125	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Breakdown Voltage (Note 6)	V _{(BR)R}	40 30 20	—	—	V	I _R = 100μA I _R = 100μA I _R = 100μA
Forward Voltage Drop	V _F	—	—	0.37 0.60	V	I _F = 20mA I _F = 200mA
Peak Reverse Current (Note 6)	I _R	—	—	5.0	μA	V _R = 30V V _R = 20V V _R = 10V
Total Capacitance	C _T	—	35	—	pF	V _R = 0V, f = 1.0MHz
Reverse-Recovery Time	t _{RR}	—	6	—	ns	I _F = I _R = 10mA, I _{RR} = 0.1 x I _R , R _L = 100Ω

Notes: 5. Device mounted on Alumina ceramic PC board, single-sided, 2oz copper pad area 25mm².
6. Short duration test pulse used to minimize self-heating effect.

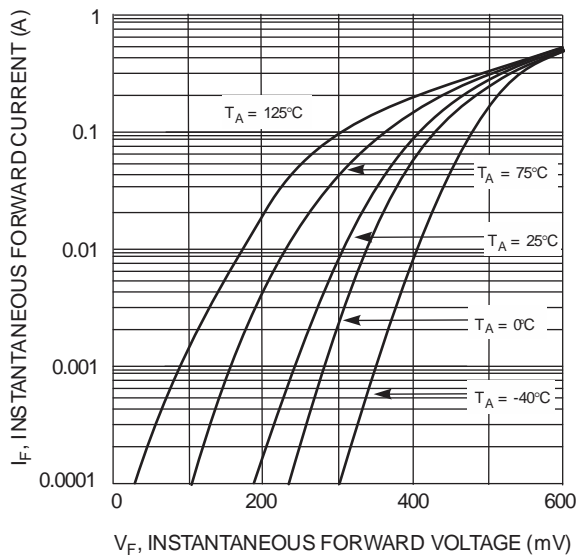


Fig. 1 Typical Forward Characteristics

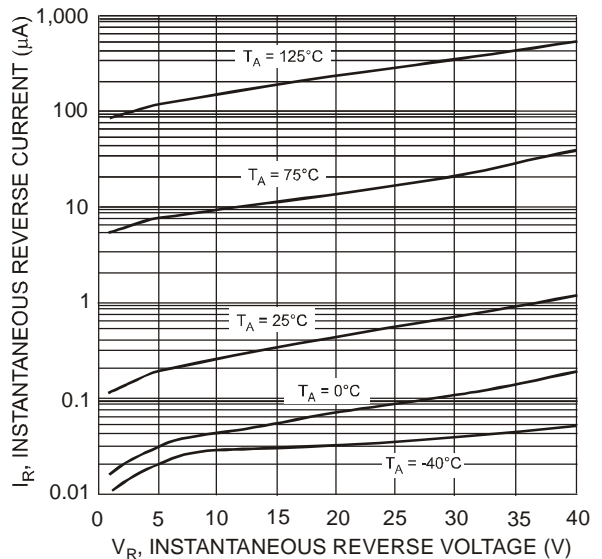


Fig. 2 Typical Reverse Characteristics



SD103AWS - SD103CWS

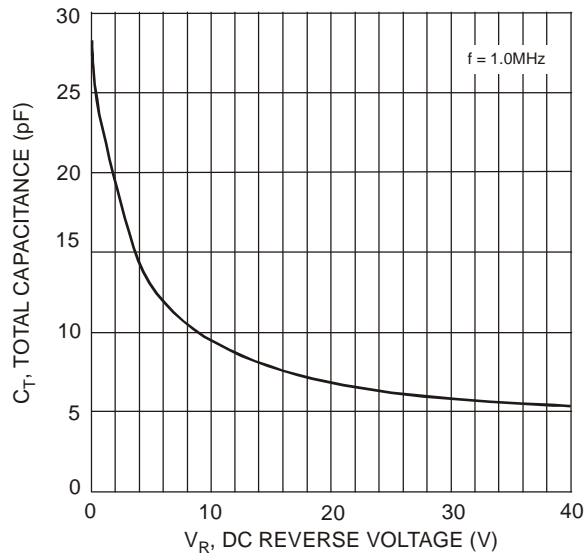


Fig. 3 Total Capacitance vs. Reverse Voltage

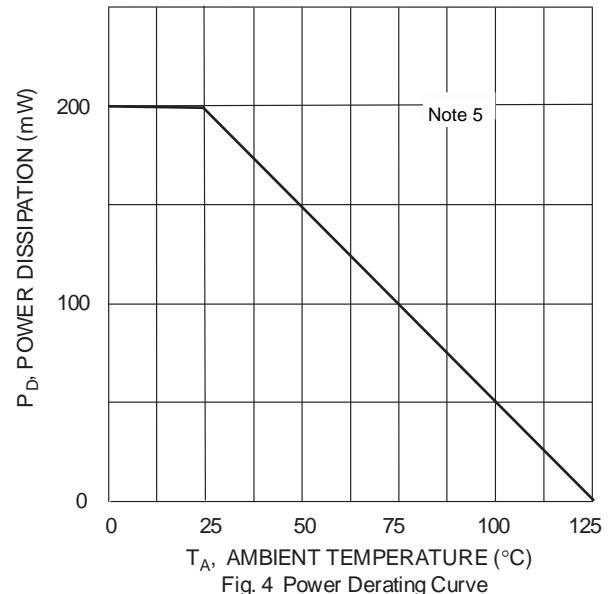
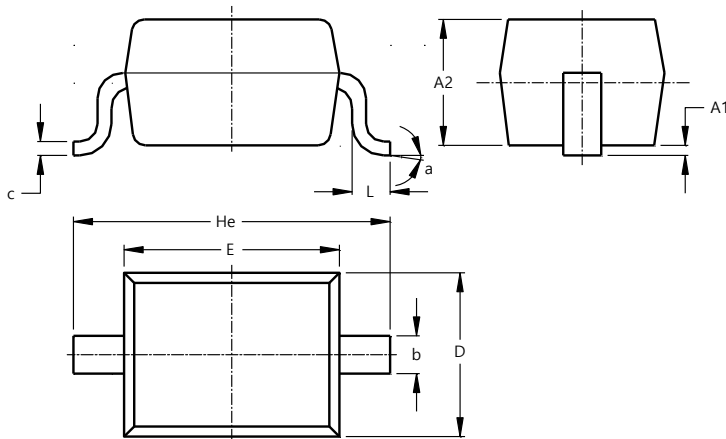


Fig. 4 Power Derating Curve

Package Outline Dimensions

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

SOD323

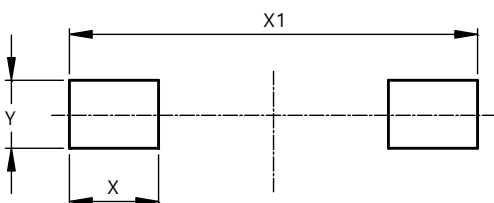


SOD323			
Dim	Min	Max	Typ
A1	--	0.10	0.05
A2	1.00	1.10	1.05
b	0.25	0.35	0.30
c	0.10	0.15	0.11
D	1.20	1.40	1.30
E	1.60	1.80	1.70
He	2.30	2.70	2.50
L	0.20	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

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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