



# **SD103AWS - SD103CWS**

### SURFACE MOUNT SCHOTTKY BARRIER DIODE

## **Features**

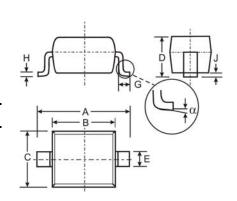
- Low Forward Voltage Drop
- **Guard Ring Construction for Transient Protection**
- Negligible Reverse Recovery Time
- Low Reverse Capacitance
- Ultra-Small Surface Mount Package
- Lead Free/RoHS Compliant (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability (Only for SD103AWS-7-F)

### **Mechanical Data**

- Case: SOD-323
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Leads: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe).
- Polarity: Cathode Band
- Type Codes: SD103AWS

SD103BWS S5 or S4 

- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.004 grams (approximate)



SOD-323				
Dim	Min	Max		
Α	2.30	2.70		
В	1.60	1.80		
С	1.20 1.40			
D	1.05 Typical			
Е	0.25	0.35		
G	0.20	0.40		
Н	0.10 0.15			
7	0.05 Typical			
α	0° 8°			
All Dimensions in mm				

### **Maximum Ratings** @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	SD103AWS	SD103BWS	SD103CWS	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$egin{array}{c} V_{RRM} \ V_{RWM} \ V_{R} \end{array}$	40	30	20	V
RMS Reverse Voltage	$V_{R(RMS)}$	28	21	14	V
Forward Continuous Current (Note 1)	I <sub>FM</sub>		350		mA
Non-Repetitive Peak Forward Surge Current @ $t \le 1.0s$	I <sub>FSM</sub>		1.5		Α
Power Dissipation (Note 1)	P <sub>d</sub>		200		mW
Thermal Resistance, Junction to Ambient Air (Note 1)	$R_{\theta JA}$		625		°C/W
Operating and Storage Temperature Range	$T_{j}$ , $T_{STG}$		-65 to +125		°C

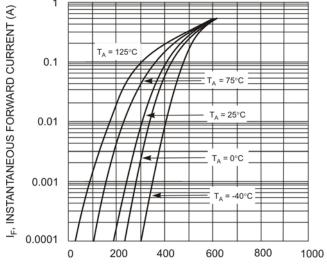
#### **Electrical Characteristics** @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic		Symbol	Min	Тур	Max	Unit	Test Conditions
Reverse Breakdown Voltage (Note 2)	SD103AWS SD103BWS SD103CWS	$V_{(BR)R}$	40 30 20	_	_	V	$\begin{split} I_R &= 100 \mu A \\ I_R &= 100 \mu A \\ I_R &= 100 \mu A \end{split}$
Forward Voltage Drop		V <sub>F</sub>	_	_	0.37 0.60	V	$I_F = 20$ mA $I_F = 200$ mA
Peak Reverse Current (Note 2)	SD103AWS SD103BWS SD103CWS	I <sub>R</sub>		_	5.0	μА	$V_R = 30V$ $V_R = 20V$ $V_R = 10V$
Total Capacitance		$C_T$	_	28	_	pF	$V_R = 0V, f = 1.0MHz$
Reverse Recovery Time		t <sub>rr</sub>	_	10	_	ns	$I_F = I_R = 200 \text{mA},$ $I_{rr} = 0.1 \times I_R, R_L = 100 \Omega$

Note: Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.

- Short duration test pulse used to minimize self-heating effect.
- No purposefully added lead.





V<sub>F</sub>, INSTANTANEOUS FORWARD VOLTAGE (mV) Fig. 1 Typical Forward Characteristics

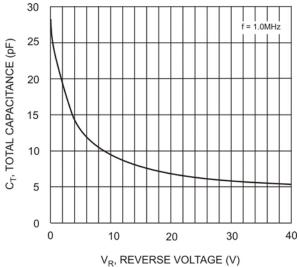
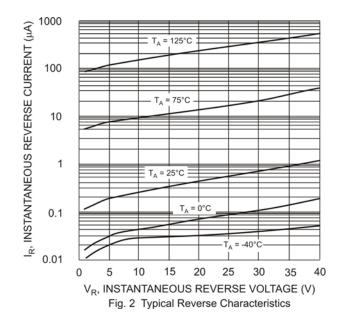
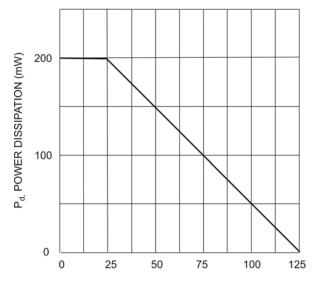


Fig. 3 Typ. Total Capacitance vs. Reverse Voltage





 $T_A$ , AMBIENT TEMPERATURE (°C) Fig. 4 Power Derating Curve



# Ordering Information (Note 4)

Device	Packaging	Shipping
SD103AWS-7-F	SOD-323	3000/Tape & Reel
SD103BWS-7-F	SOD-323	3000/Tape & Reel
SD103CWS-7-F	SOD-323	3000/Tape & Reel

Notes: 4. For Packaging Details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

# **Marking Information**



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