

**Features**

- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- Negligible Reverse Recovery Time
- Low Capacitance
- Ultra-small Surface Mount Package
- **Lead Free/RoHS Compliant Version (Note 1)**
- **“Green” Device (Note 2)**

**Mechanical Data**

- Case: SOD323
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Polarity: Cathode Band
- Leads: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Weight: 0.004 grams (approximate)



Top View

**Ordering Information** (Note 3)

Part Number	Case	Packaging
SD101AWS-7-F	SOD323	3000/Tape & Reel
SD101BWS-7-F	SOD323	3000/Tape & Reel
SD101CWS-7-F	SOD323	3000/Tape & Reel

- Notes:
1. No purposefully added lead.
  2. Diodes Inc.'s "Green" policy can be found on our website at <http://www.diodes.com/>
  3. For packaging details, go to our website at [http://www.diodes.com.](http://www.diodes.com/)

**Marking Information**



xx = Product Type Marking Code  
 S1 or SK = SD101AWS  
 S2 or SK = SD101BWS  
 S3 or SC or SK = SD101CWS

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

Characteristic	Symbol	SD101AWS	SD101BWS	SD101CWS	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>				
Working Peak Reverse Voltage	V <sub>RWM</sub>	60	50	40	V
DC Blocking Voltage	V <sub>R</sub>				
RMS Reverse Voltage	V <sub>R(RMS)</sub>	42	35	28	V
Forward Continuous Current (Note 4)	I <sub>FM</sub>		15		mA
Non-Repetitive Peak Forward Surge Current	I <sub>FSM</sub>		50		mA
	@ t ≤ 1.0s		2.0		
	@ t = 10μs				

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 4)	P <sub>D</sub>	200	mW
Thermal Resistance, Junction to Ambient Air (Note 4)	R <sub>θJA</sub>	625	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +125	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Breakdown Voltage (Note 5)	SD101AWS	60	—	—	V	I <sub>R</sub> = 10μA
	SD101BWS	50	—	—		I <sub>R</sub> = 10μA
	SD101CWS	40	—	—		I <sub>R</sub> = 10μA
Forward Voltage Drop	SD101AWS	—	—	0.41	V	I <sub>F</sub> = 1.0mA
	SD101BWS	—	—	0.40		I <sub>F</sub> = 1.0mA
	SD101CWS	—	—	0.39		I <sub>F</sub> = 1.0mA
	SD101AWS	—	—	1.00		I <sub>F</sub> = 15mA
	SD101BWS	—	—	0.95		I <sub>F</sub> = 15mA
	SD101CWS	—	—	0.90		I <sub>F</sub> = 15mA
Peak Reverse Current (Note 5)	SD101AWS	—	—	200	nA	V <sub>R</sub> = 50V
	SD101BWS	—	—	200		V <sub>R</sub> = 40V
	SD101CWS	—	—	200		V <sub>R</sub> = 30V
Total Capacitance	SD101AWS	—	—	2.0	pF	V <sub>R</sub> = 0V, f = 1.0MHz
	SD101BWS	—	—	2.1		V <sub>R</sub> = 0V, f = 1.0MHz
	SD101CWS	—	—	2.2		V <sub>R</sub> = 0V, f = 1.0MHz
Reverse Recovery Time	t <sub>rr</sub>	—	—	1.0	ns	I <sub>F</sub> = I <sub>R</sub> = 5.0mA, I <sub>rr</sub> = 0.1 x I <sub>R</sub> , R <sub>L</sub> = 100Ω

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

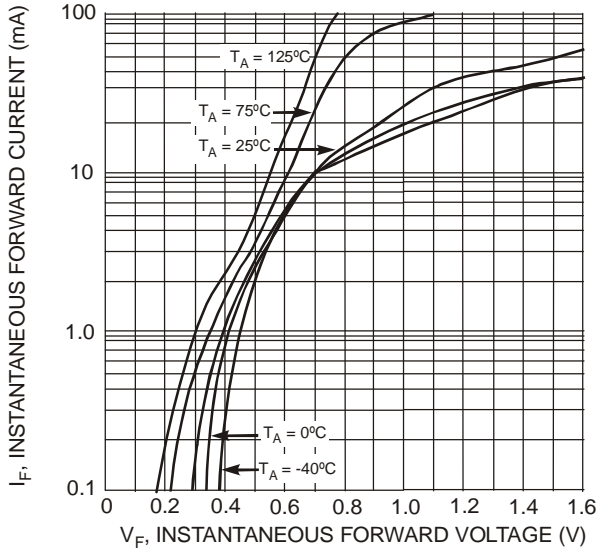


Fig. 1 Typical Forward Characteristics

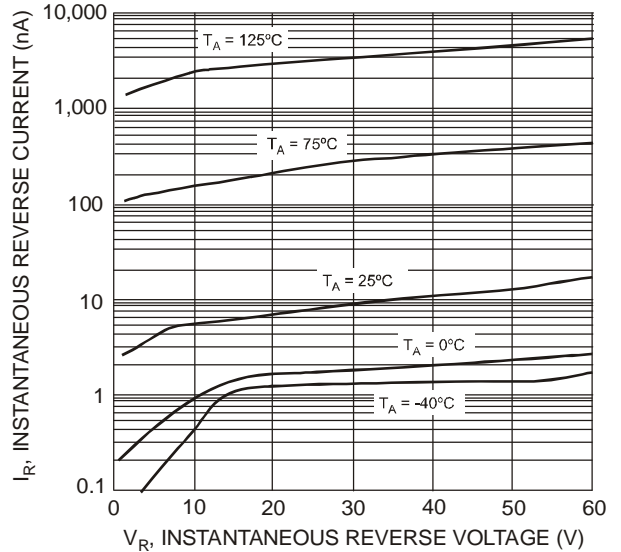


Fig. 2 Typical Reverse Characteristics

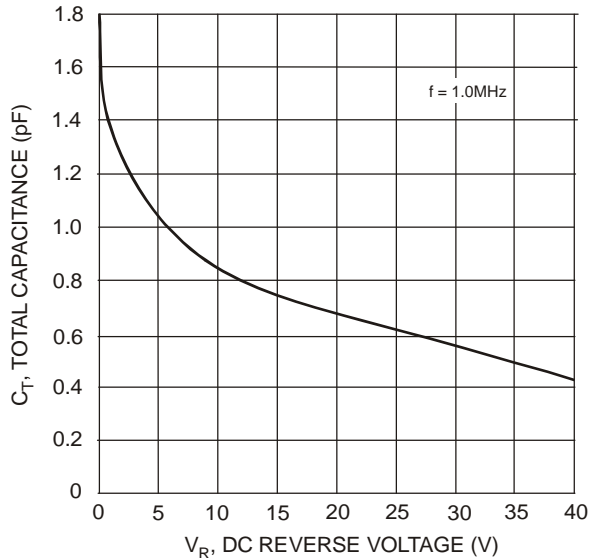


Fig. 3 Total Capacitance vs. Reverse Voltage

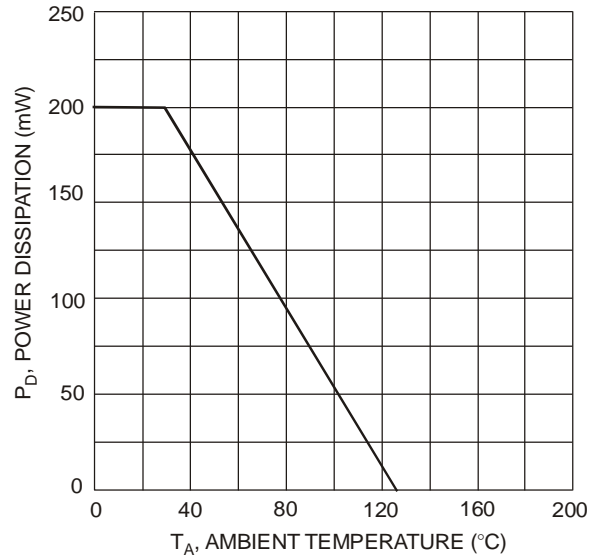
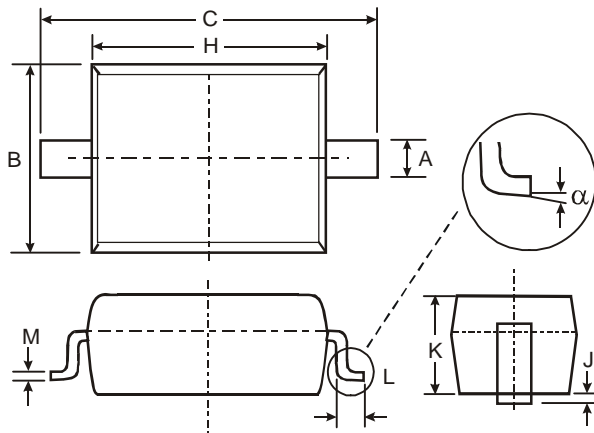


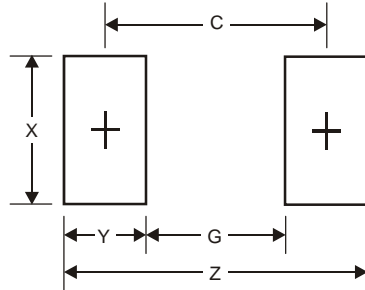
Fig. 4 Power Derating Curve

**Package Outline Dimensions**



SOD323		
Dim	Min	Max
A	0.25	0.35
B	1.20	1.40
C	2.30	2.70
H	1.60	1.80
J	0.00	0.10
K	1.0	1.1
L	0.20	0.40
M	0.10	0.15
$\alpha$	0°	8°
All Dimensions in mm		

## Suggested Pad Layout



Dimensions	Value (in mm)
Z	3.75
G	1.05
X	0.65
Y	1.35
C	2.40

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