

## Features

- 350 Watts Peak Pulse Power (tp = 8x20µs)
- IEC 61000-4-2 (ESD): Air – 30kV, Contact – 30kV
- IEC 61000-4-2 (ESD), HBM – 16kV
- IEC 61000-4-4, 40A
- IEC 61000-4-5 (Lightning), 15A
- Typically Used at Computer Interface Protection, Data Line and Power Line Protection
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. “Green” Device (Note 3)**

## Mechanical Data

- Case: SOD323
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Alloy 42 Leadframe (Lead-Free Plating). Solderable per MIL-STD-202, Method 208③
- Weight: 0.004 grams (Approximate)

SOD323



Top View



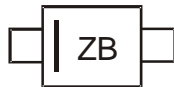
Device Schematic

## Ordering Information (Note 4)

Product	Compliance	Marking	Reel size(inches)	Tape width(mm)	Quantity per reel
SD12-7	Standard	ZB	7	8	3,000/Tape & 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>.

## Marking Information



ZB = Product Type Marking Code  
Line Denotes Pin 1

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

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Current	I <sub>PP</sub>	15	A	8/20μs, Per Figure 3
ESD Protection – Contact Discharge	V <sub>ESD_Contact</sub>	±30	kV	Standard IEC 61000-4-2
ESD Protection – Air Discharge	V <sub>ESD_Air</sub>	±30	kV	Standard IEC 61000-4-2
ESD Protection – Human Body Model	V <sub>ESD_HBM</sub>	±16	kV	Standard IEC 61000-4-2
Electrical Fast Transients (EFT)	—	40	A	Standard IEC 61000-4-4

### Thermal Characteristics

Characteristic	Symbol	Value	Unit
Package Power Dissipation (Note 5)	P <sub>D</sub>	350	mW
Thermal Resistance, Junction to Ambient (Note 5)	R <sub>θJA</sub>	500	°C/W
Operating Temperature Range	T <sub>J</sub>	-55 to +150	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Working Voltage	V <sub>RWM</sub>	—	—	12.0	V	—
Reverse Current (Note 6)	I <sub>R</sub>	—	—	1	μA	V <sub>R</sub> = V <sub>RWM</sub> = 12.0V
Reverse Breakdown Voltage (Note 6)	V <sub>BR</sub>	13.3	—	15.75	V	I <sub>R</sub> = 1mA
Reverse Clamping Voltage	V <sub>CL</sub>	—	—	19	V	I <sub>PP</sub> = 5A, t <sub>p</sub> = 8/20μs
		—	—	25		I <sub>PP</sub> = 15A, t <sub>p</sub> = 8/20μs
Capacitance	C <sub>T</sub>	—	—	150	pF	V <sub>R</sub> = 0V, f = 1MHz

Notes: 5. Device mounted on FR-4 PCB pad layout (2oz. copper) as shown on Diodes, Inc. suggested pad layout AP02001, which can be found on our website at <http://www.diodes.com>.  
 6. Short duration pulse test used to minimize self-heating effect.

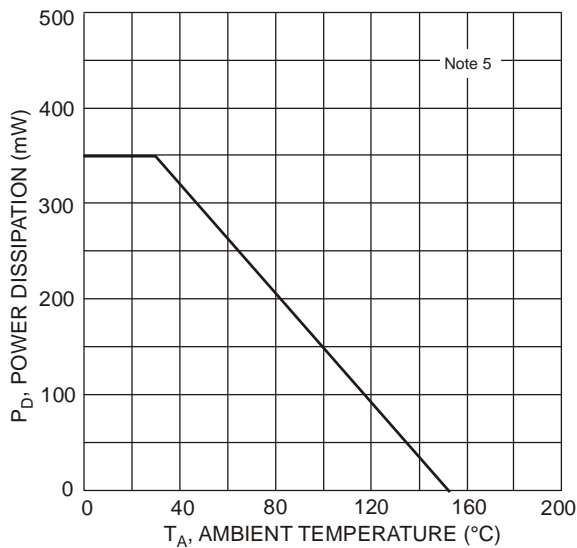


Figure 1 Power Derating Curve

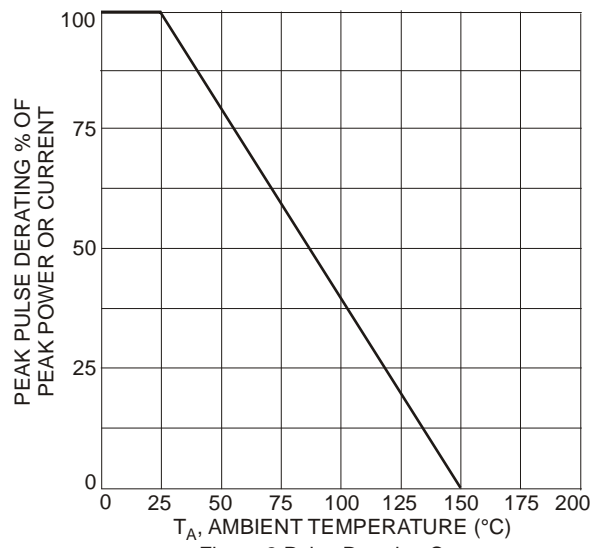


Figure 2 Pulse Derating Curve

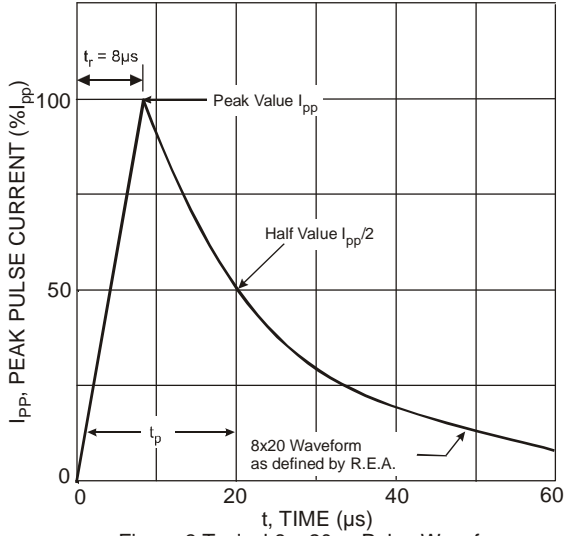


Figure 3 Typical 8 x 20µs Pulse Waveform

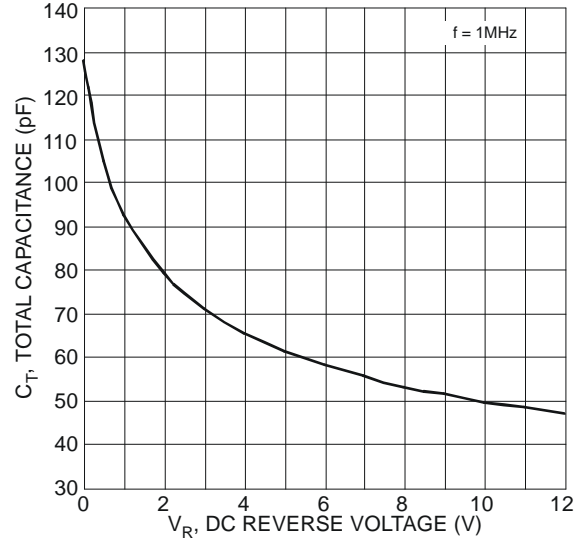


Figure 4 Typical Capacitance

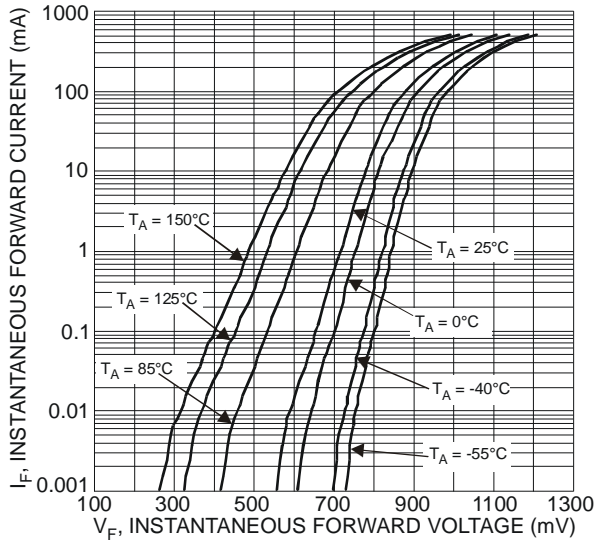


Figure 5 Typical Forward Characteristics

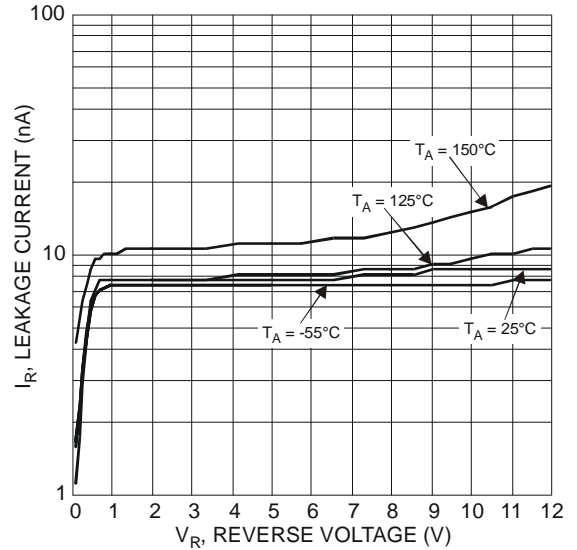


Figure 6 Typical Reverse Characteristics

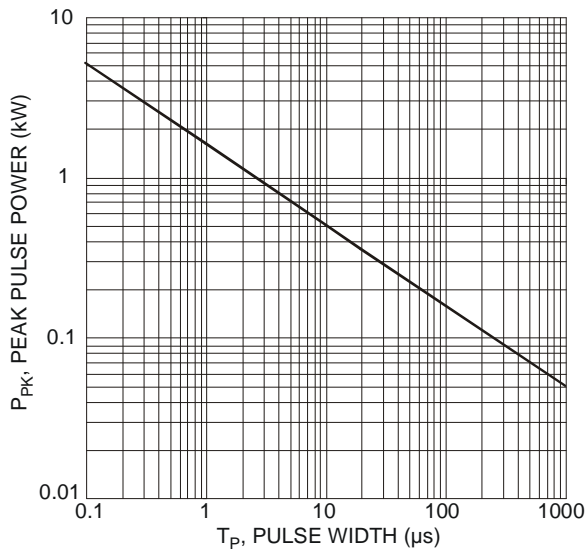
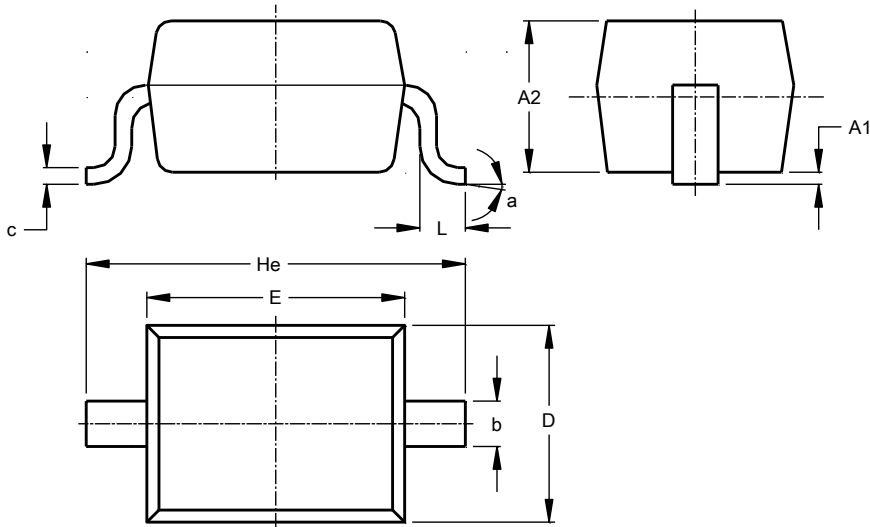


Figure 7 Pulse Rating Curve

**Package Outline Dimensions**

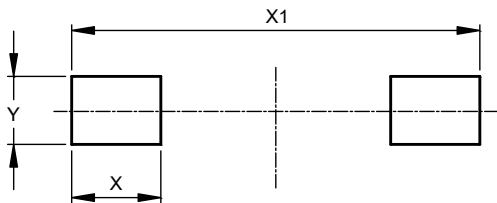
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



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

**Suggested Pad Layout**

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



Dimensions	Value (in mm)
<b>X</b>	0.590
<b>X1</b>	2.700
<b>Y</b>	0.450

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