

## Features

- Provides ESD Protection per IEC 61000-4-2 Standard: Air – ±30kV, Contact – ±30kV
- 1 Channel of ESD Protection
- Low Channel Input Capacitance
- Typically Used at Computer Interface Protection, Data Line and Power Line Protection
- PPAP Capable
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

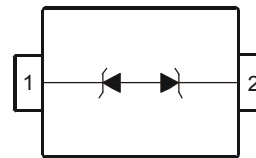
## Mechanical Data

- 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 208 <sup>e3</sup>
- Weight: 0.004 grams (approximate)

SOD323



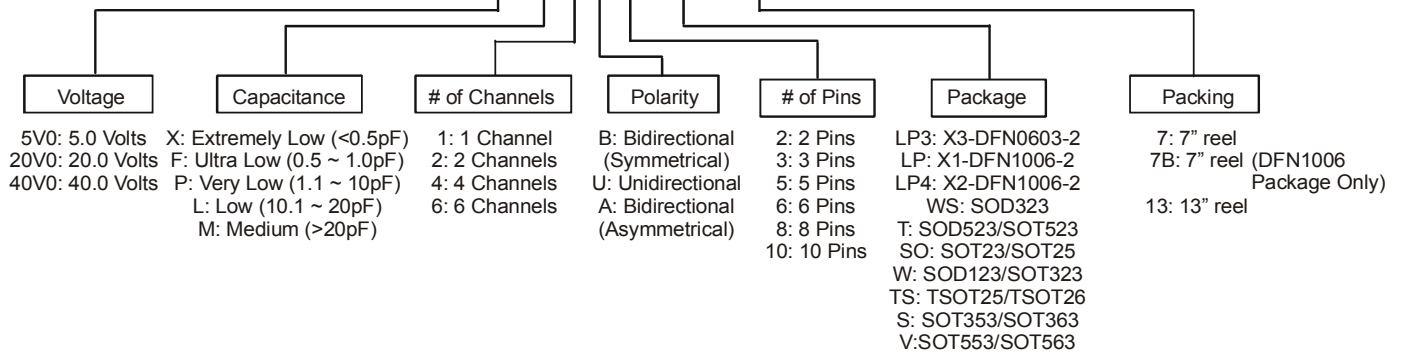
Top View



Device Schematic

## Ordering Information (Note 4)

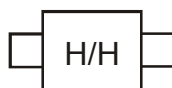
### D 20V0 L X B X XXX- XX



Product	Compliance	Marking	Reel Size (inches)	Tape Width (mm)	Quantity per Reel
D20V0L1B2WS-7	AEC-Q101	H/H	7	8	3,000/Tape & Reel
D20V0L1B2WSQ-7	Automotive	H/H	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



H/H = Product Type Marking Code

**Maximum Ratings** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Power Dissipation	$P_{PP}$	90	W	8/20 $\mu\text{s}$ , Per Figure 2
Peak Pulse Current	$I_{PP}$	3	A	8/20 $\mu\text{s}$ , Per Figure 2
ESD Protection – Contact Discharge	$V_{ESD\_Contact}$	$\pm 30$	kV	Standard IEC 61000-4-2
ESD Protection – Air Discharge	$V_{ESD\_Air}$	$\pm 30$	kV	Standard IEC 61000-4-2

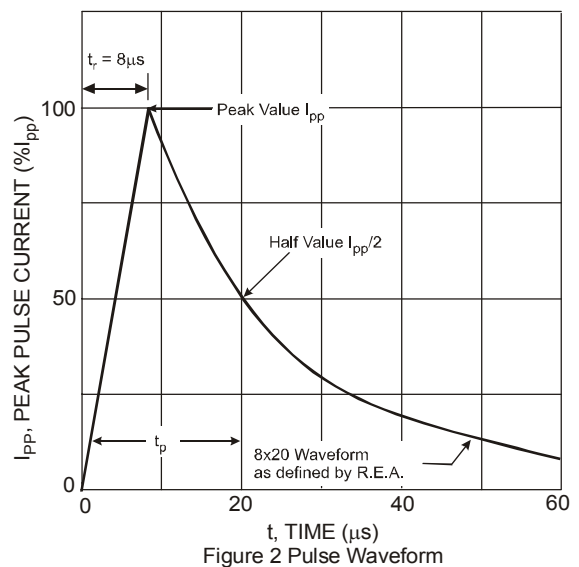
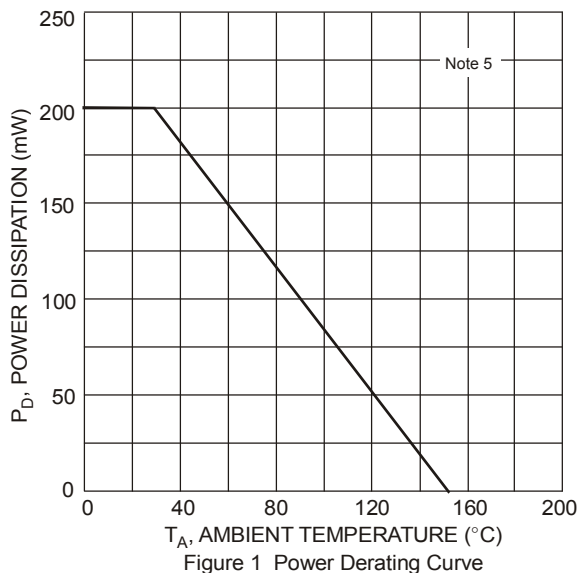
**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Package Power Dissipation (Note 5)	$P_D$	200	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	625	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +150	$^\circ\text{C}$

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Standoff Voltage	$V_{RWM}$	—	—	20	V	—
Channel Leakage Current (Note 6)	$I_{RM}$	—	—	100	nA	$V_{RWM} = 20\text{V}$
Clamping Voltage, Positive Transients	$V_{CL}$	—	—	27	V	$I_{PP} = 1\text{A}, t_p = 8/20\mu\text{s}$
		—	—	30	V	$I_{PP} = 3\text{A}, t_p = 8/20\mu\text{s}$
Breakdown Voltage	$V_{BR}$	21	—	25	V	$I_R = 1\text{mA}$
Differential Resistance	$R_{DIF}$	—	1.8	—	$\Omega$	$I_R = 1\text{A}, t_p = 8/20\mu\text{s}$
Channel Input Capacitance	$C_T$	—	10	15	pF	$V_R = 0\text{V}, f = 1\text{MHz}$

- Notes:
- 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>.
  - Short duration pulse test used to minimize self-heating effect.



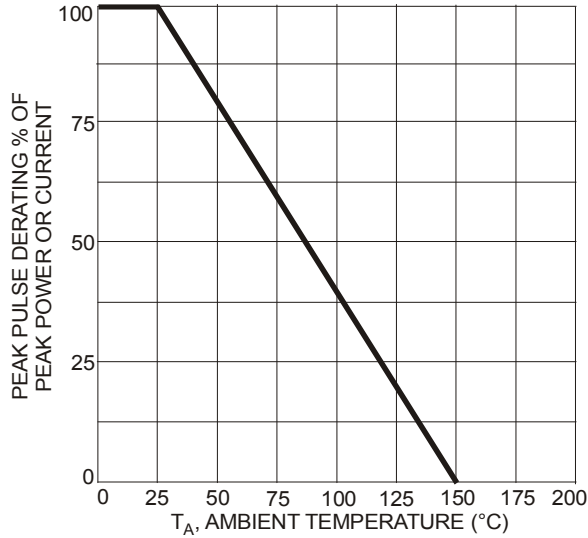


Figure 3 Power Dissipation vs. Ambient Temperature

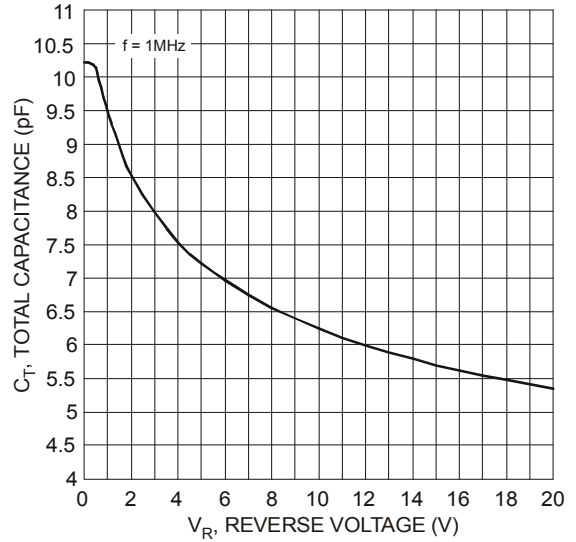


Figure 4 Typical Total Capacitance vs. Reverse Voltage

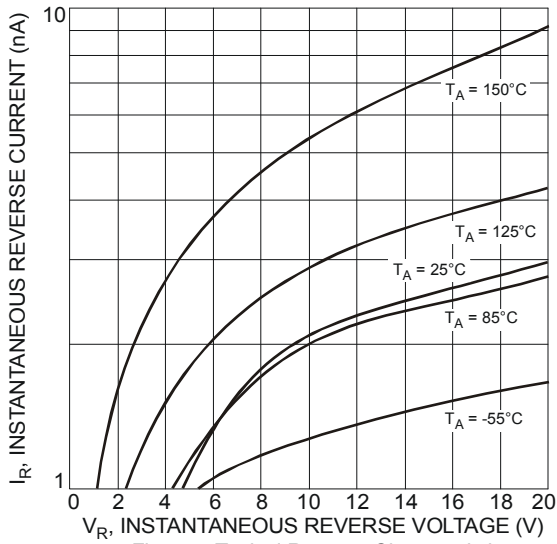
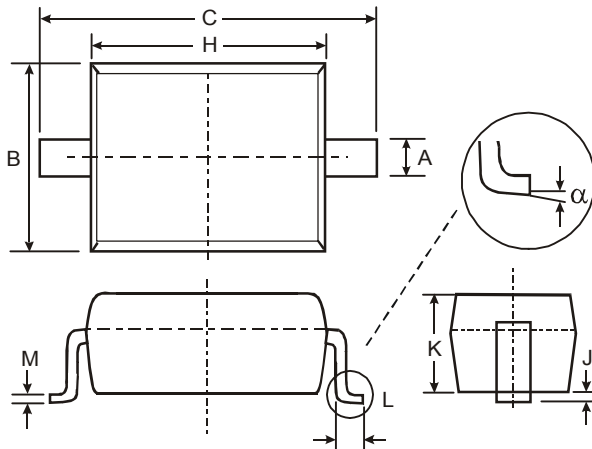


Figure 5 Typical Reverse Characteristics

## Package Outline Dimensions

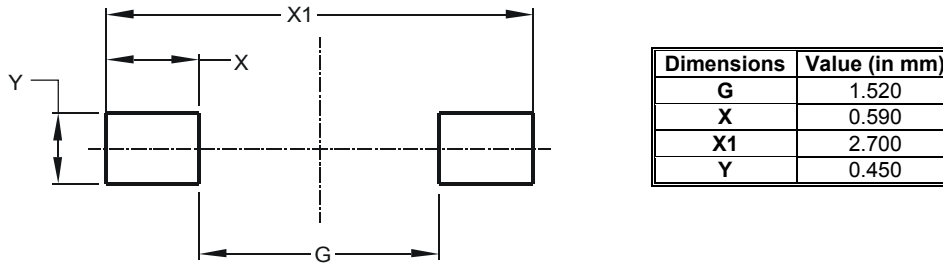
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



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
α	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.



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