



**D20V0L1B2WS** 

#### LOW CAPACITANCE BIDIRECTIONAL TVS DIODE

Case Material: Molded Plastic, "Green" Molding Compound. UL

Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208

Flammability Classification Rating 94V-0

Weight: 0.004 grams (approximate)

Moisture Sensitivity: Level 1 per J-STD-020

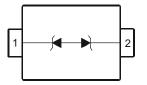
#### Features

- 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)

SOD323



Top View

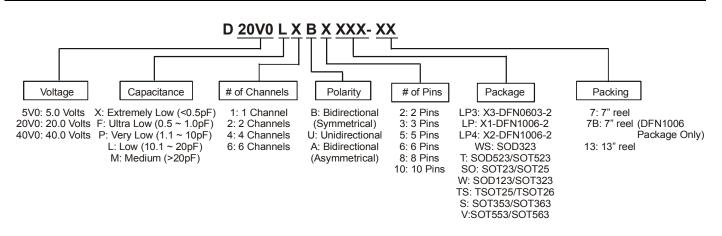


**Mechanical Data** 

Case: SOD323

Device Schematic

#### Ordering Information (Note 4)



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

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 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**

Notes:



H/H = Product Type Marking Code



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

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Power Dissipation	P <sub>PP</sub>	90	W	8/20µs, Per Figure 2
Peak Pulse Current	IPP	3	А	8/20µs, Per Figure 2
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

# Thermal Characteristics

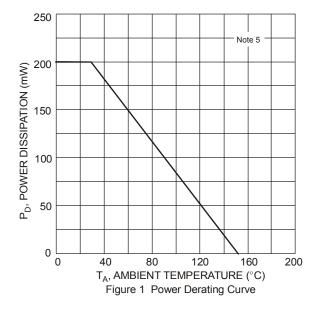
Characteristic	Symbol	Value	Unit
Package Power Dissipation (Note 5)	PD	200	mW
Thermal Resistance, Junction to Ambient (Note 5)	R <sub>0JA</sub>	625	°C/W
Operating and Storage Temperature Range	TJ, T <sub>STG</sub>	-65 to +150	°C

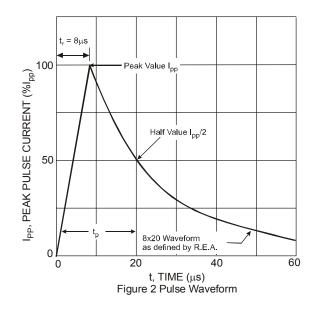
## Electrical Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Test Conditions
Reverse Standoff Voltage	V <sub>RWM</sub>	—	—	20	V	—
Channel Leakage Current (Note 6)	I <sub>RM</sub>	_		100	nA	V <sub>RWM</sub> = 20V
Clamping Voltage, Positive Transients	V <sub>CL</sub>	—	—	27	V	I <sub>PP</sub> = 1A, t <sub>p</sub> = 8/20µS
		—	—	30	V	$I_{PP} = 3A, t_p = 8/20\mu S$
Breakdown Voltage	V <sub>BR</sub>	21	—	25	V	I <sub>R</sub> = 1mA
Differential Resistance	R <sub>DIF</sub>	—	1.8	_	Ω	I <sub>R</sub> = 1A, t <sub>p</sub> = 8/20μS
Channel Input Capacitance	CT	_	10	15	pF	V <sub>R</sub> = 0V, f = 1MHz

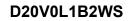
Notes: 5. Device mounted on FR-4 PCB pad layout (2oz copper) as shown on Diodes, Inc. suggested pad layout AP02001, which can be found on our website at http://www.diodes.com.

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









11 10.5

10

9.5

7.5 7 6.5 6

5.5 5 4.5

4

0 2

6 8 10 12 14 16 18 20

 $V_{R}$ , REVERSE VOLTAGE (V)

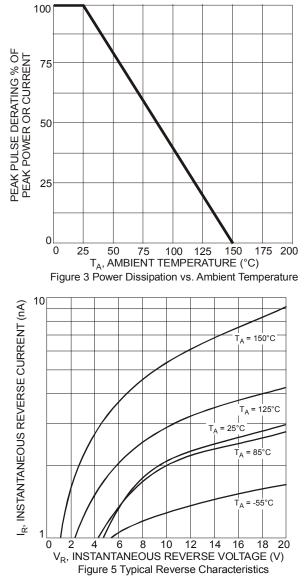
Figure 4 Typical Total Capacitance vs. Reverse Voltage

4

9 8.5 8

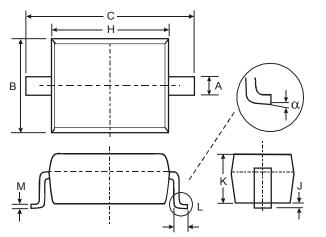
C<sub>T</sub>, TOTAL CAPACITANCE (pF)

1MHz



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

**Package Outline Dimensions** 

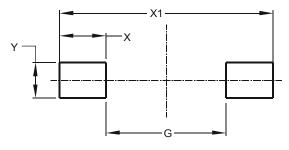


SOD323			
Dim	Min	Max	
Α	0.25	0.35	
В	1.20	1.40	
С	2.30	2.70	
Н	1.60	1.80	
J	0.00	0.10	
κ	1.0 1.1		
L	0.20	0.40	
М	0.10	0.15	
α	0°	8°	
All Dimensions in mm			



#### Suggested Pad Layout

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



Dimensions	Value (in mm)
G	1.520
Х	0.590
X1	2.700
Y	0.450

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