



#### LOW CAPACITANCE BIDIRECTIONAL TVS DIODE

#### **Features**

- Provides ESD Protection per IEC 61000-4-2 Standard: Air  $-\pm30kV$ , Contact  $-\pm30kV$
- 1 Channel of ESD Protection
- Low Channel Input Capacitance
- Typically Used in Cellular Handsets, Portable Electronics, Communication Systems, Computers and Peripherals
- Lead Free/RoHS Compliant (Note 1)
- "Green" Device (Note 2)

### **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
- Weight: 0.004 grams (approximate)

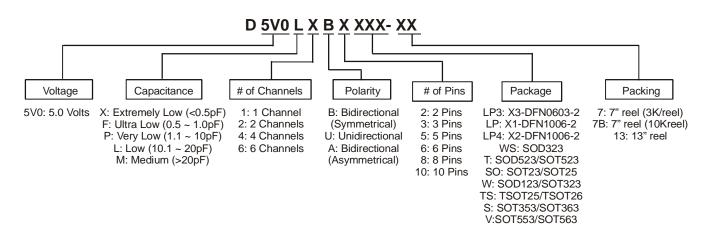


Top View



**Device Schematic** 

### Ordering Information (Note 3)

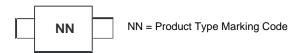


Part Number	Case	Packaging
D5V0L1B2WS-7	SOD323	3000/Tape & Reel

Notes: 1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. No purposely added lead. Halogen and Antimony free.

- 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.

# **Marking Information**





## Maximum Ratings @TA = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Power Dissipation	$P_PP$	84	W	8/20μs, Per Fig. 1
Peak Pulse Current	I <sub>PP</sub>	6	Α	8/20μs, Per Fig. 1
ESD Protection – Contact Discharge	V <sub>ESD_Contact</sub>	±30	kV	Standard IEC 61000-4-2
ESD Protection – Air Discharge	$V_{ESD\_Air}$	±30	kV	Standard IEC 61000-4-2

## **Thermal Characteristics**

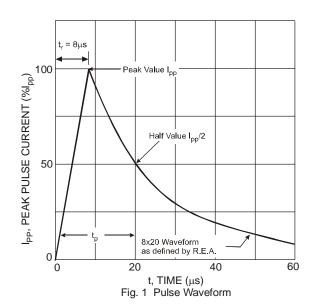
Characteristic	Symbol	Value	Unit
Package Power Dissipation (Note 4)	$P_{D}$	200	mW
Thermal Resistance, Junction to Ambient (Note 4)	$R_{ hetaJA}$	625	°C/W
Operating and Storage Temperature Range	$T_J,T_STG$	-65 to +150	°C

## Electrical Characteristics @TA = 25°C unless otherwise specified

Characteristic	Symbol	Min	Тур	Max	Unit	Test Conditions
Reverse Standoff Voltage	V <sub>RWM</sub>	-	-	5	V	-
Channel Leakage Current (Note 5)	I <sub>RM</sub>	-	10	100	nA	$V_{RWM} = 5V$
Clamping Voltage, Positive Transients	V <sub>CL</sub>		7.0 8.7 10.5 11.5	9.0 10.7 12.0 14.0	V	$\begin{split} &\text{Ipp} = 1\text{A, } t_{\text{p}} = 8/20\mu\text{S} \\ &\text{Ipp} = 3\text{A, } t_{\text{p}} = 8/20\mu\text{S} \\ &\text{Ipp} = 5\text{A, } t_{\text{p}} = 8/20\mu\text{S} \\ &\text{Ipp} = 6\text{A, } t_{\text{p}} = 8/20\mu\text{S} \\ &\text{Ipp} = 6\text{A, } t_{\text{p}} = 8/20\mu\text{S} \end{split}$
Breakdown Voltage	$V_{BR}$	6	7	8	V	$I_R = 1 \text{mA}$
Differential Resistance	R <sub>DIF</sub>	-	0.2	-	Ω	$I_R = 1A$ , $tp = 8/20 \mu S$
Channel Input Capacitance	C <sub>T</sub>	-	15	20	pF	$V_R = 0V$ , $f = 1MHz$

Notes:

- 4. 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.
- 5. Short duration pulse test used to minimize self-heating effect.



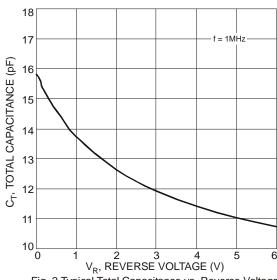
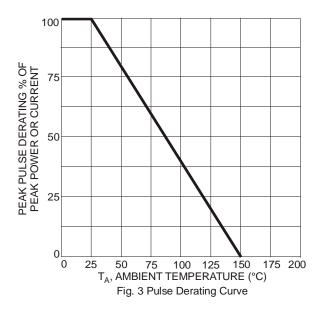
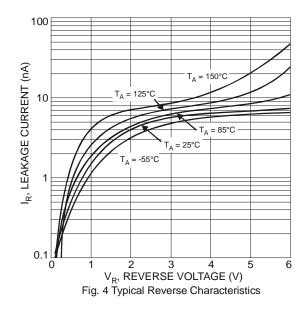


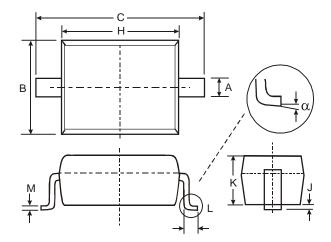
Fig. 2 Typical Total Capacitance vs. Reverse Voltage





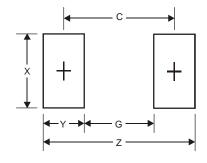


# **Package Outline Dimensions**



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		
K	1.0	1.1		
L	0.20	0.40		
М	0.10	0.15		
α	0°	8°		
All Dimensions in mm				

# **Suggested Pad Layout**



Dimensions	Value (in mm)
Z	3.75
G	1.05
Х	0.65
Υ	1.35
С	2.40



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