

**LOW CAPACITANCE BIDIRECTIONAL TVS DIODE**

**Features**

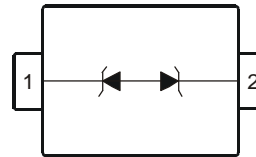
- Provides ESD Protection per IEC 61000-4-2 Standard: Air – ±30kV, Contact – ±30kV
- 1 Channel of ESD Protection
- Low Channel Input Capacitance
- Typically Used in Cellular Handsets, Portable Electronics, Communication Systems, Computers and Peripherals
- **Lead Free/RoHS Compliant (Note 1)**
- **“Green” 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)

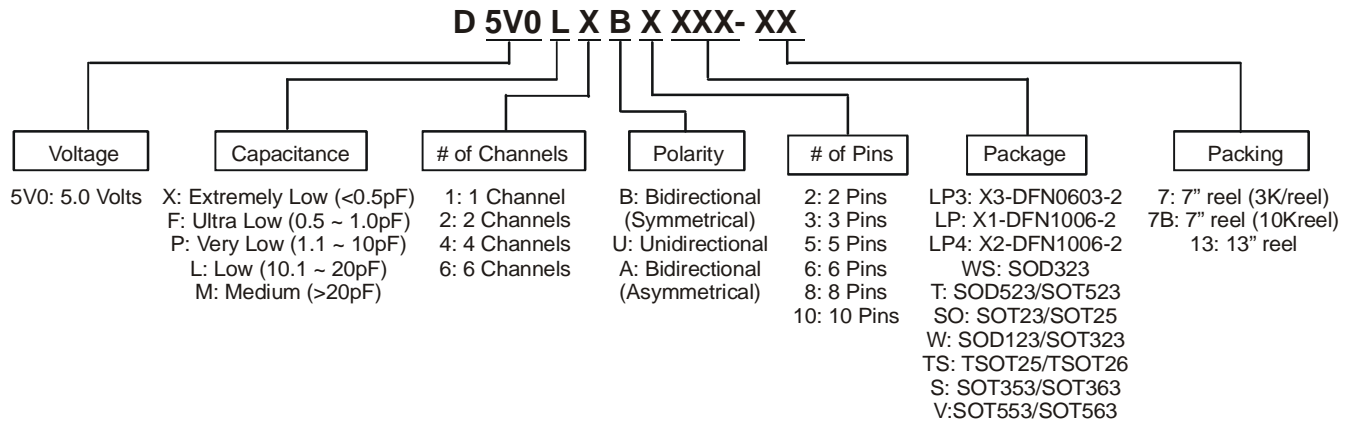


Top View



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**



NN = 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>	84	W	8/20μs, Per Fig. 1
Peak Pulse Current	I <sub>PP</sub>	6	A	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 <sub>ESD_Air</sub>	±30	kV	Standard IEC 61000-4-2

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Package Power Dissipation (Note 4)	P <sub>D</sub>	200	mW
Thermal Resistance, Junction to Ambient (Note 4)	R <sub>θJA</sub>	625	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

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

Characteristic	Symbol	Min	Typ	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 <sub>RWM</sub> = 5V
Clamping Voltage, Positive Transients	V <sub>CL</sub>	-	7.0	9.0	V	I <sub>PP</sub> = 1A, t <sub>p</sub> = 8/20μS
		-	8.7	10.7		I <sub>PP</sub> = 3A, t <sub>p</sub> = 8/20μS
		-	10.5	12.0		I <sub>PP</sub> = 5A, t <sub>p</sub> = 8/20μS
		-	11.5	14.0		I <sub>PP</sub> = 6A, t <sub>p</sub> = 8/20μS
Breakdown Voltage	V <sub>BR</sub>	6	7	8	V	I <sub>R</sub> = 1mA
Differential Resistance	R <sub>DIF</sub>	-	0.2	-	Ω	I <sub>R</sub> = 1A, t <sub>p</sub> = 8/20μS
Channel Input Capacitance	C <sub>T</sub>	-	15	20	pF	V <sub>R</sub> = 0V, f = 1MHz

- 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.

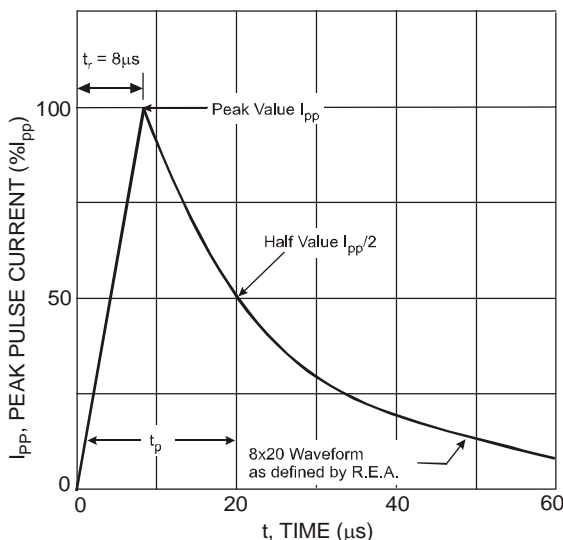


Fig. 1 Pulse Waveform

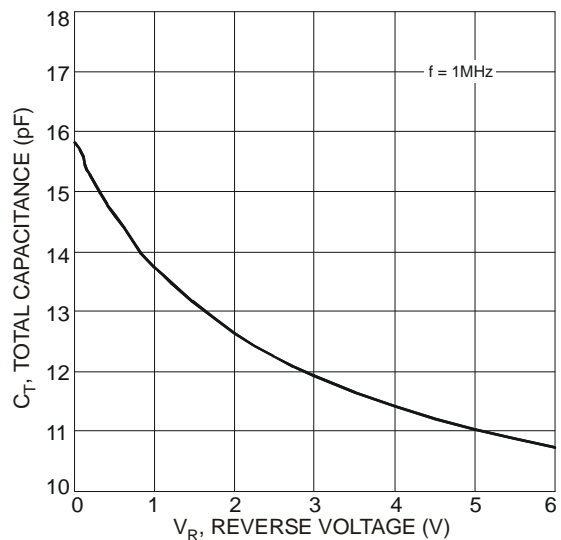


Fig. 2 Typical Total Capacitance vs. Reverse Voltage

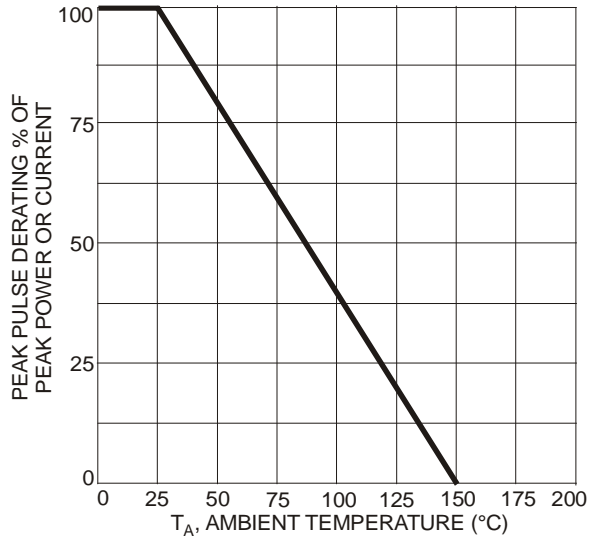


Fig. 3 Pulse Derating Curve

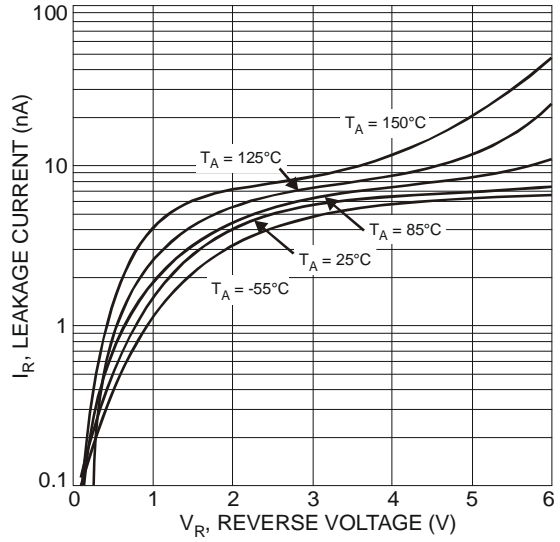
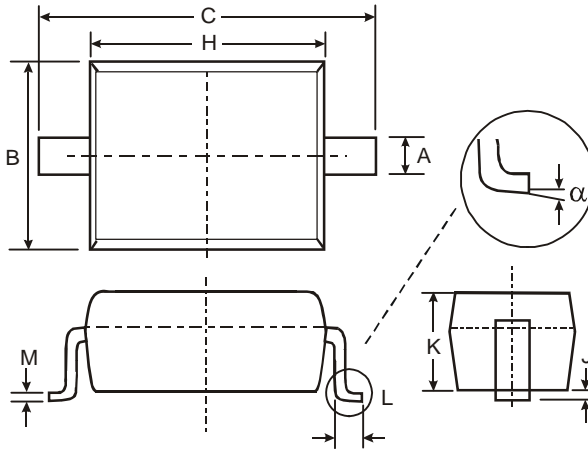


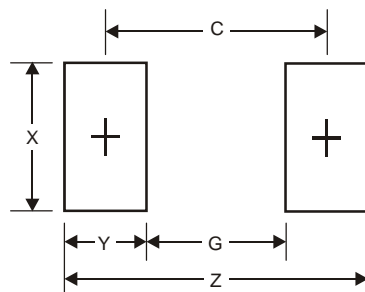
Fig. 4 Typical Reverse Characteristics

**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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