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[Diodes Incorporated](#)
[D5V0L1B2WS-7](#)

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D5V0L1B2WS

LOW CAPACITANCE BIDIRECTIONAL TVS DIODE

Features

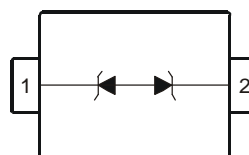
- Provides ESD Protection per IEC 61000-4-2 Standard: Air – ±30kV, Contact – ±30kV
- 1 Channel of ESD Protection
- Low Channel Input Capacitance
- Typically Used in Cellular Handsets, Portable Electronics, Communication Systems, Computers and Peripherals
- **Lead Free/RoHS Compliant (Note 1)**
- **“Green”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



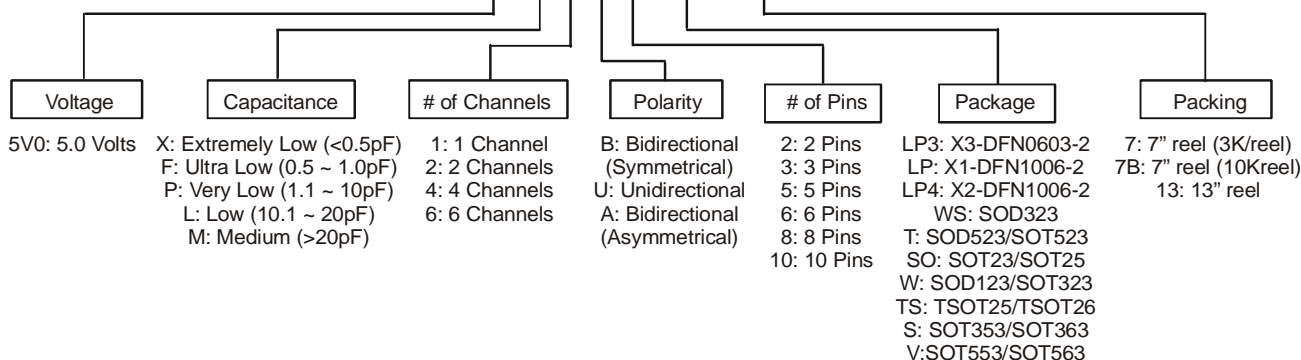
Top View



Device Schematic

Ordering Information (Note 3)

D 5V0 L X B X XXX- XX



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_A = 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 _{PP}	6	A	8/20μs, Per Fig. 1
ESD Protection – Contact Discharge	V _{ESD_Contact}	±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 _{θJA}	625	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Standoff Voltage	V _{RWM}	-	-	5	V	-
Channel Leakage Current (Note 5)	I _{RM}	-	10	100	nA	V _{RWM} = 5V
Clamping Voltage, Positive Transients	V _{CL}	-	7.0 8.7 10.5 11.5	9.0 10.7 12.0 14.0	V	I _{PP} = 1A, t _p = 8/20μs I _{PP} = 3A, t _p = 8/20μs I _{PP} = 5A, t _p = 8/20μs I _{PP} = 6A, t _p = 8/20μs
Breakdown Voltage	V _{BR}	6	7	8	V	I _R = 1mA
Differential Resistance	R _{DIF}	-	0.2	-	Ω	I _R = 1A, t _p = 8/20μs
Channel Input Capacitance	C _T	-	15	20	pF	V _R = 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.

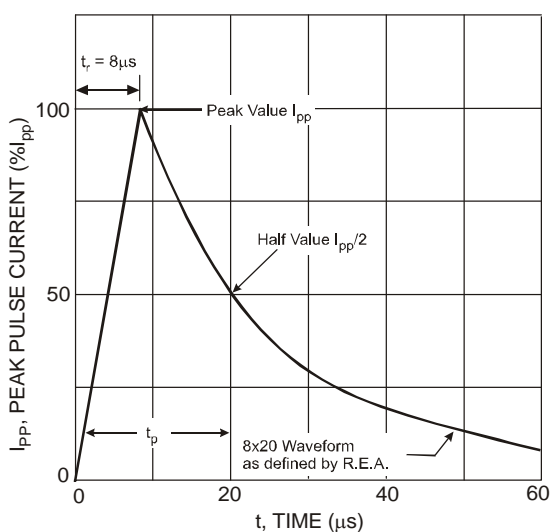


Fig. 1 Pulse Waveform

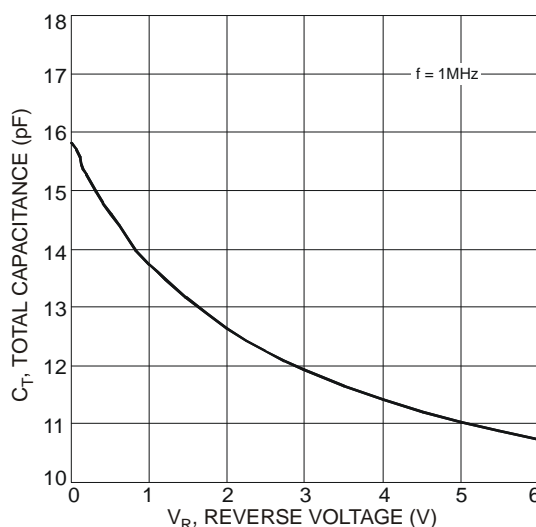


Fig. 2 Typical Total Capacitance vs. Reverse Voltage



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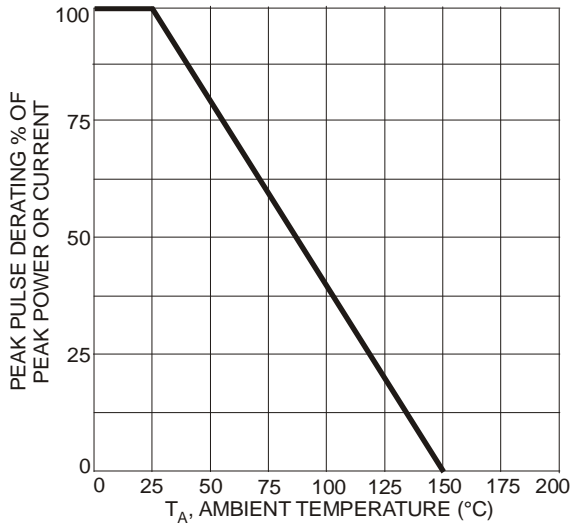


Fig. 3 Pulse Derating Curve

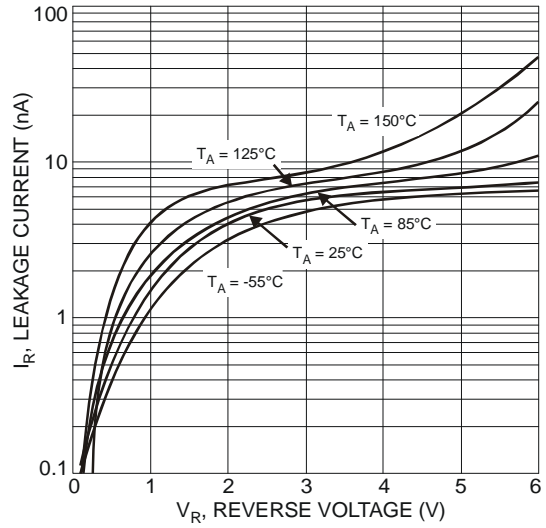
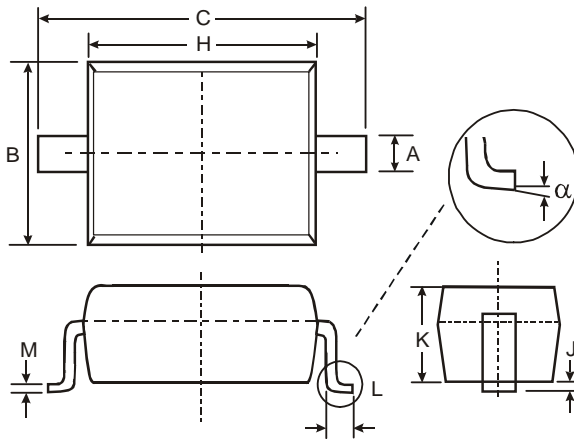


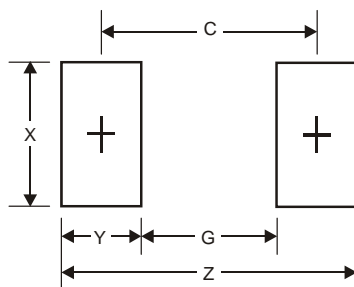
Fig. 4 Typical Reverse Characteristics

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
α	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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