

Features

- Provides ESD Protection per IEC 61000-4-2 Standard: Contact $\pm 10\text{kV}$
- 1 Channel of ESD Protection
- High Peak Pulse Current per IEC 61000-4-5 Standard
- Low Channel Input Capacitance
- Typically used in Cellular Handsets, Portable Electronics, Communication Systems, Computers and Peripherals
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

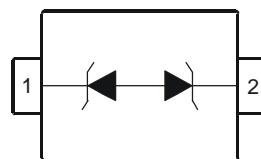
Mechanical Data

- 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^(e3)
- Weight: 0.004 grams (Approximate)

SOD323



Top View



Device Schematic

Ordering Information (Note 4)

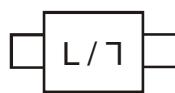
Product	Compliance	Marking	Reel Size (inches)	Tape Width (mm)	Quantity per Reel
DESD5V0U1BA-7	Standard	L/1	7	8	3,000/Tape & Reel

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 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

SOD323



L/1 = Product Type Marking Code

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

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Current	I_{PP}	3	A	8/20 μs , per Figure 3
ESD Protection – Contact Discharge	$V_{ESD\ Contact}$	± 10	kV	IEC 61000-4-2 Standard

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Package Power Dissipation (Note 5)	P_D	250	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	500	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°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}	-	-	5	V	-
Channel Leakage Current (Note 6)	I_{RM}	-	5	100	nA	$V_{RWM} = 5\text{V}$
Clamping Voltage	V_{CL}	-	7.2	-	V	$I_{PP} = 3\text{A}, t_p = 8/20\mu\text{s}$
Breakdown Voltage	V_{BR}	5.5	7	9.5	V	$I_R = 5\text{mA}$
Differential Resistance	R_{DIF}	-	-	100	Ω	$I_R = 1\text{mA}$
Dynamic Impedance	R_{dyn}	-	0.3	-	Ω	TLP, 20A, $t_p = 100\text{ ns}$
Channel Input Capacitance	C_T	-	2.9	-	pF	$V_R = 0\text{V}, f = 1\text{MHz}$
		-	1.9	-		$V_R = 5\text{V}, f = 1\text{MHz}$

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

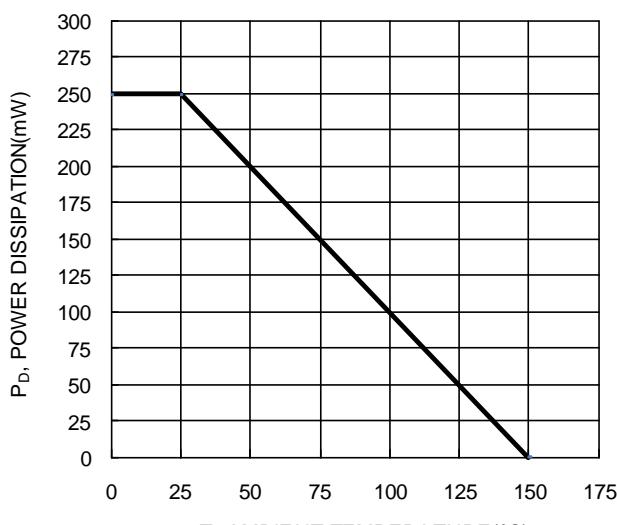


Figure 1. Power Derating Curve

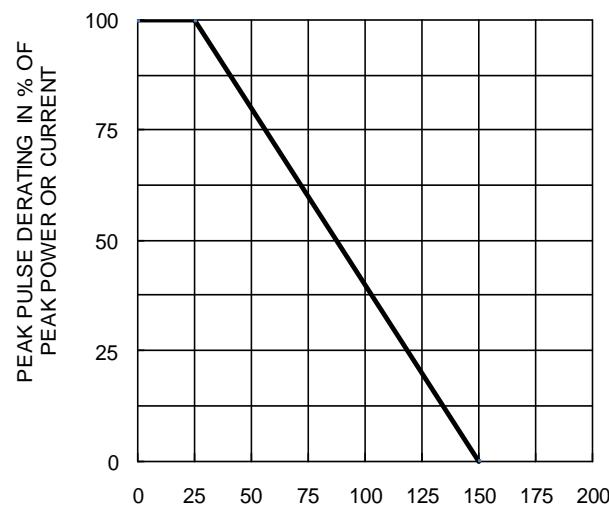


Figure 2. Pulse Derating Curve

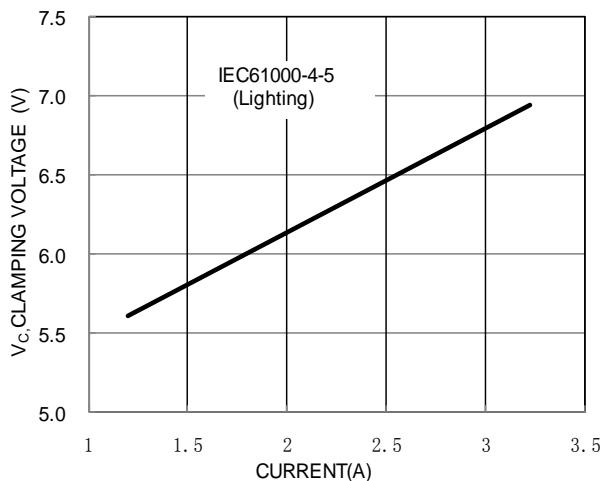


Figure 3. Clamping Voltage Characteristic

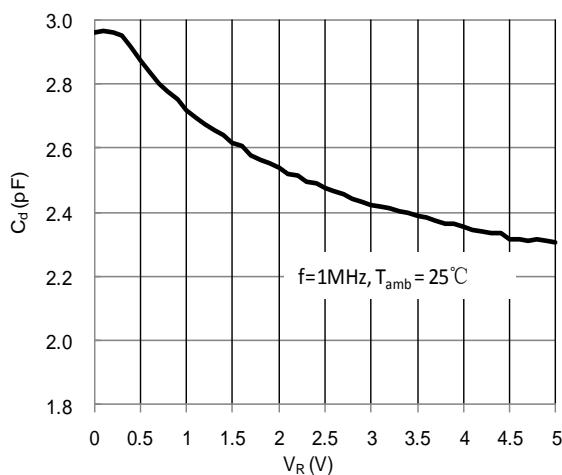


Figure 4. Input Capacitance vs. Input Voltage

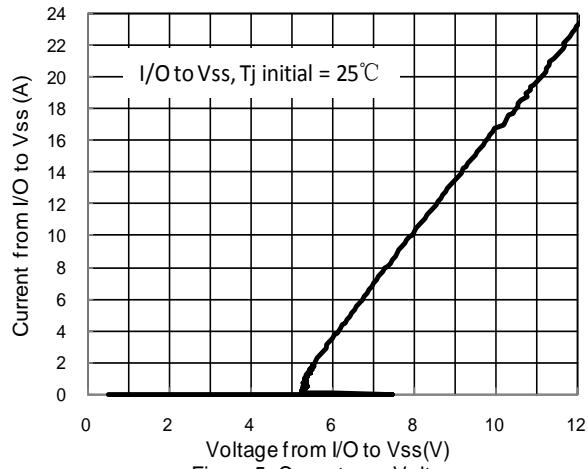


Figure 5. Current vs. Voltage

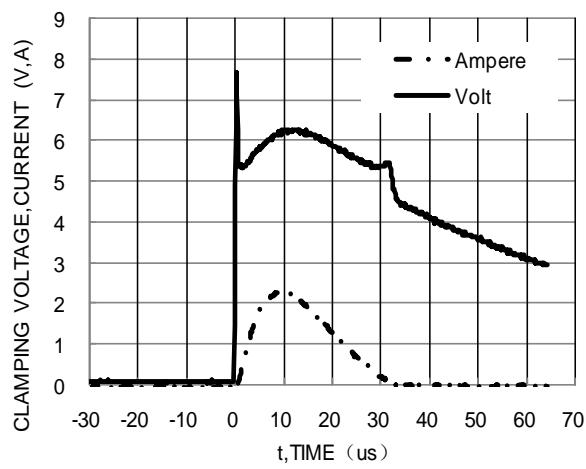


Figure 6. Waveform of Clamping Voltage, Current vs. Time(8/20us,I/O to Vss)

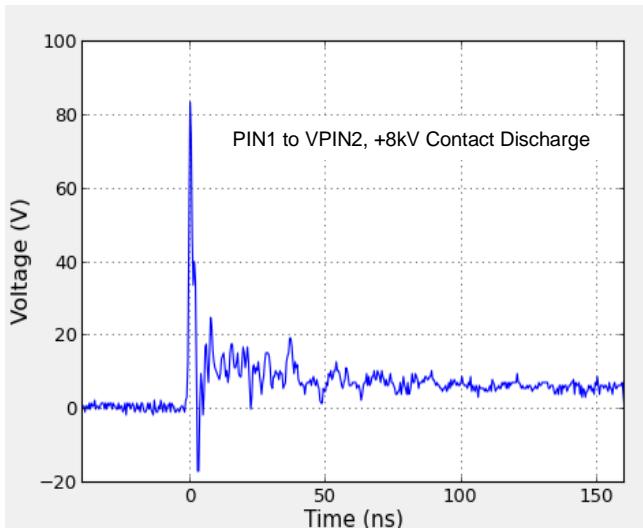


Figure 7 ESD Response to IEC 61000-4-2

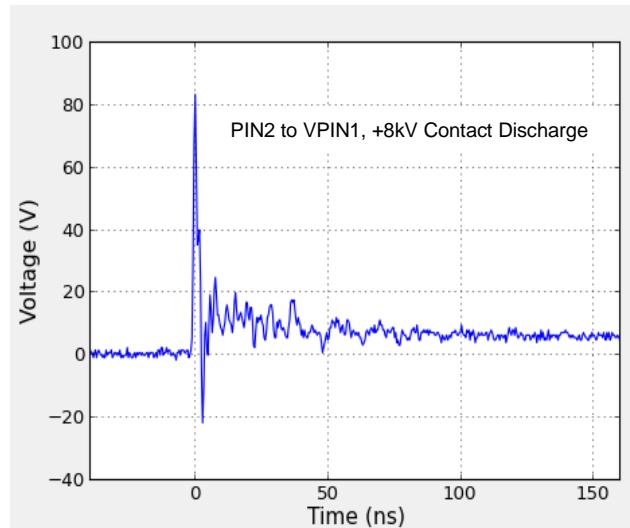
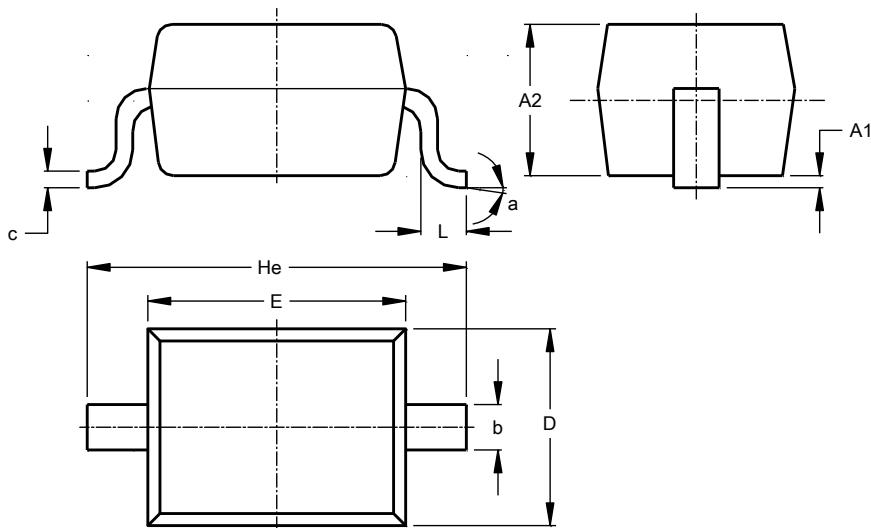


Figure 8 ESD Response to IEC 61000-4-2

Package Outline Dimensions

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

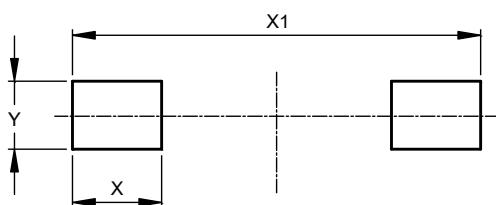


SOD323			
Dim	Min	Max	Typ
A1	-	0.10	0.05
A2	1.00	1.10	1.05
b	0.25	0.35	0.30
c	0.10	0.15	0.11
D	1.20	1.40	1.30
E	1.60	1.80	1.70
He	2.30	2.70	2.50
L	0.20	0.40	0.30
a	8°		

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)
X	0.590
X1	2.700
Y	0.450

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