





400W BIDIRECTIONAL TVS DIODE

Product Summary

V _{BR (Min)}	I _{PP (Max)}	Ст (Тур)
10V	20A	68pF

Description

This new generation TVS is designed to protect sensitive electronics from the damage due to ESD. The combination of small size and high ESD surge capability makes it ideal for use in portable applications such as cellular phones, digital cameras, and MP3 players.

Applications

- Cellular Handsets
- Portable Electronics
- Computers and Peripheral

Features

- Provides ESD Protection per IEC 61000-4-2 Standard: Air ±30kV, Contact ±30kV
- Bidirectional Configuration
- Ultra Low Channel Input Capacitance
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please <u>contact us</u> or your local Diodes representative. https://www.diodes.com/quality/product-definitions/

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 (3)
- Weight: 0.004 grams (Approximate)

SOD323



Top View



Device Schematic

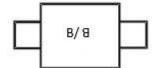
Ordering Information (Note 4)

Part Number	Compliance	Marking	Reel Size (inches)	Tape Width (mm)	Quantity per Reel
SD09C-7	Commercial	B/B (Reversed)	7	8	3.000/Tape & Reel

Notes:

- 1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
- 2. See https://www.diodes.com/quality/lead-free/ 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 https://www.diodes.com/design/support/packaging/diodes-packaging/.

Marking Information



B/B (Reversed) = Product Type Marking Code



Maximum Ratings (@ $T_A = +25$ °C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Power	P _{PP}	400	W	8/20μs, per Figure 3
Peak Pulse Current	lpp	20	Α	8/20μs, per Figure 3
ESD Protection – Contact Discharge	VESD_Contact	±30	kV	IEC 61000-4-2 Standard
ESD Protection – Air Discharge	V _{ESD_Air}	±30	kV	IEC 61000-4-2 Standard

Thermal Characteristics

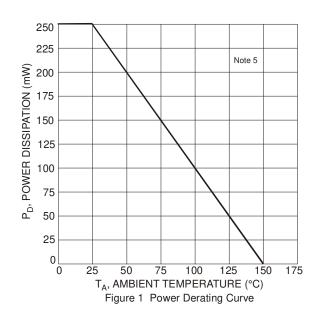
Characteristic	Symbol	Value	Unit
Package Power Dissipation (Note 5)	PD	250	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{ heta JA}$	500	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

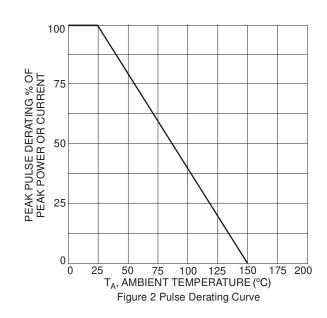
Electrical Characteristics (@TA = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Test Conditions
Reverse Standoff Voltage	V_{RWM}	_	_	9.0	V	_
Channel Leakage Current (Note 6)	I _{RM}	_	_	1	μΑ	V _{RWM} = 9.0V
Breakdown Voltage	V _{BR}	10.0	_	_	V	I _R = 1mA
		_	_	14.5		$I_{PP} = 1A, t_p = 8/20 \mu s$
Clamping Voltage	V _{CL}	_	_	17	V	$I_{PP} = 10A, t_p = 8/20\mu s$
		_	_	20.0		$I_{PP} = 20A, t_p = 8/20\mu s$
Channel Input Capacitance	Ст	_	68	_	pF	V _R = 0V, f = 1MHz

Notes:

^{6.} Short duration pulse test used to minimize self-heating effect.





^{5.} Device mounted on FR-4 PCB pad layout (2oz copper) as shown in Diodes Incorporated's package outline PDFs, which can be found on our website at http://www.diodes.com/package-outlines.html.



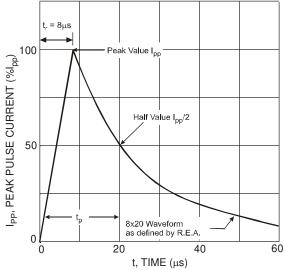
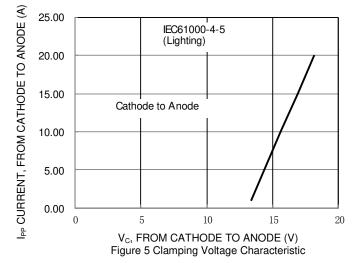
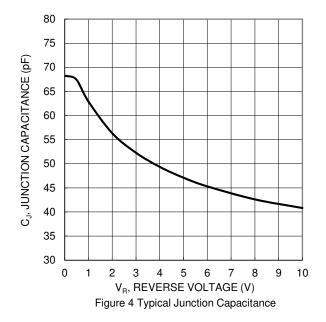


Figure 3 Typical 8 × 20µs Pulse Waveform



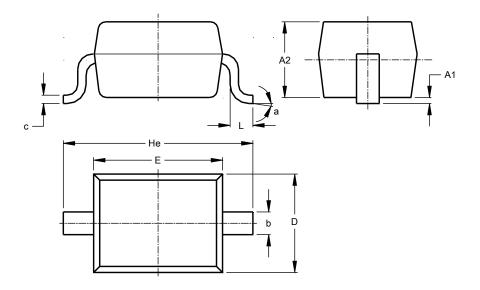




Package Outline Dimensions

Please see http://www.diodes.com/package-outlines.html for the latest version.

SOD323

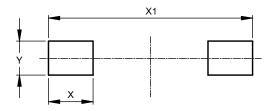


SOD323					
Dim	Min	Max	Тур		
A1		0.10	0.05		
A2	1.00	1.10	1.05		
b	0.25	0.35	0.30		
C	0.10	0.15	0.11		
D	1.20	1.40	1.30		
Е	1.60	1.80	1.70		
He	2.30	2.70	2.50		
L	0.20	0.40	0.30		
а	0º	8º			
All Dimensions in mm					

Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.

SOD323



Dimensions	Value (in mm)
Х	0.590
X1	2.700
Υ	0.450



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