



ULTRA-LOW CAPACITANCE BIDIRECTIONAL TVS

Product Summary

V _{BR min}	I _{pp max}	C _{IN typ}
8.5V	14A	0.6pF

Description

The DBLC08CI is an ultra-low capacitance, bidirectional, Electro Static Discharge (ESD) protection diode in a small Surface-Mounted Device (SMD) plastic package designed to protect one data line from damage caused by ESD.

Applications

- Ethernet 10/100/1000 base T
- Handheld wireless systems
- USB interfaces

Features

- Provides ESD Protection per IEC 61000-4-2 Standard:
 Air ±30kV. Contact ±27kV
- 1 Channel of ESD Protection
- 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 contact us or your local Diodes representative. https://www.diodes.com/quality/product-definitions/

Mechanical Data

- Package: SOD323
- Package 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

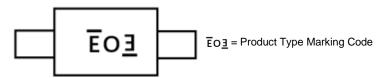
Ordering Information (Note 4)

Product	Compliance	Marking	Reel size(inches)	Tape width(mm)	Quantity per reel
DBLC08CI-7	Commercial	<u>E</u> 0 <u>3</u>	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





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

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Power Dissipation	P_PP	350	W	8/20µs, Per Figure 3
Peak Pulse Current	I _{PP}	14	Α	8/20µs, Per Figure 3
ESD Protection – Contact Discharge	V _{ESD_Contact}	±27	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 5)	P_{D}	250	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\Theta JA}$	500	°C/W
Operating Temperature Range	TJ	-55 to +125	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C
Soldering Temperature, t max =10s	TL	260	°C

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

Characteristic	Symbol	Min	Тур	Max	Unit	Test Conditions
Reverse Working Voltage	VRWM	_	_	8	V	_
Reverse Current (Note 5)	lR	_	_	2	uA	$V_R = V_{RWM} = 8V$
Reverse Breakdown Voltage	V _{BR}	8.5	_	_	V	I _R = 1mA
Royaraa Clamping Valtage	V	_	_	13.4	٧	$I_{PP} = 1A, t_p = 8/20\mu s$
Reverse Clamping Voltage	V _{CL}	_	_	25		$I_{PP} = 14A, t_p = 8/20\mu s$
Capacitance	C _T	_	0.6	0.7	pF	$V_R = 0V$, $f = 1MHz$

Notes:

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

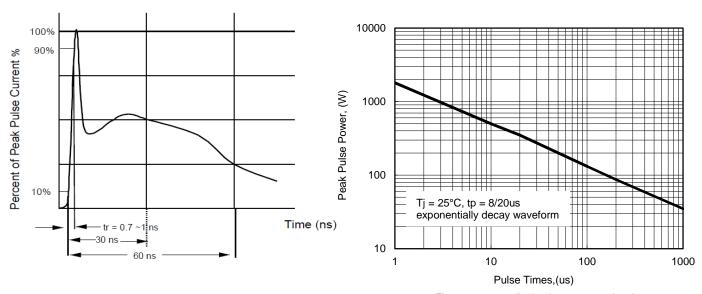


Figure 1, ESD pulse waveform according to IEC 61000-4-2

Figure 2, power dissipation versus pulse time



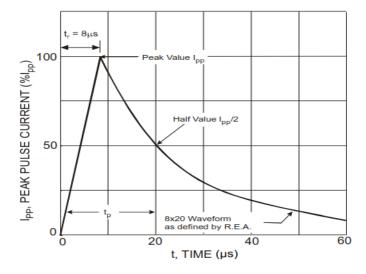


Figure 3, typical 8 x 20µs pulse waveform

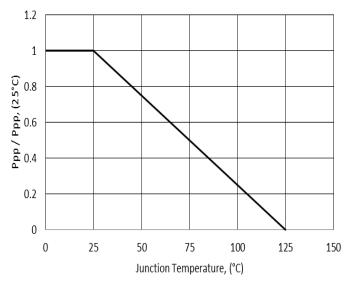


Figure 4, peak pulse power versus Tj

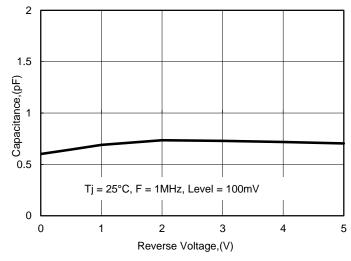


Figure 5, typical junction capacitance

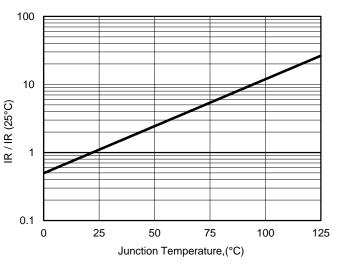


Figure 6, reverse leakage current versus Tj

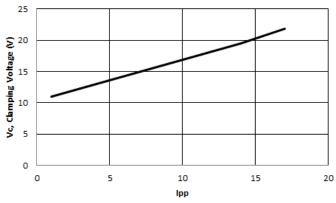
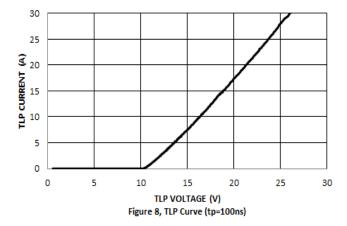


Figure 7, Clamping Voltage Characteristic (tp=8/20uS)

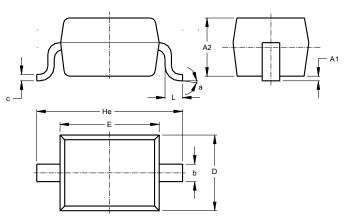




Package Outline Dimensions

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

SOD323

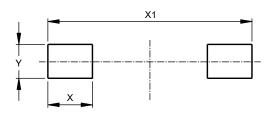


SOD323						
Dim	Min	Тур				
A1		0.10	0.05			
A2	1.00	1.10	1.05			
b	0.25	0.35	0.30			
С	0.10	0.15	0.11			
D	1.20	1.40	1.30			
Е	1.60	1.80	1.70			
He	2.30	2.70	2.50			
L	0.20	0.40	0.30			
а	00	8°				
All Dimensions in mm						

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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