



D3V3S1B2LP

HIGH SURGE BIDIRECTIONAL TVS DIODE

Product Summary

V _{BR (Min)}	IPP (Max)	C _{T (Typ)}
3.8V	50A	118pF

Features And Benefits

- Low Profile Package (0.53mm Max) and Ultra-Small PCB Footprint Area (1.08mm x 0.68mm Max) Suitable for Compact Portable Electronics
- Provides ESD Protection per IEC 61000-4-2 Standard: Air ±30kV. Contact ±30kV
- One 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)

Description And Applications

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.

- Cellular Handsets
- Portable Electronics
- Computers and Peripheral

Mechanical Data

- Case: X1-DFN1006-2
- Case Material: Molded Plastic, "Green" Molding Compound.
 UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Finish: NiPdAu Plated over Copper Leadframe Solderable per MIL-STD-202, Method 208 @4
- Weight: 0.001 grams (Approximate)

X1-DFN1006-2



Bottom View



Device Schematic

Ordering Information (Note 4)

ſ	Part Number	Compliance	Marking	Reel Size (inches)	Tape Width (mm)	Quantity per Reel
	D3V3S1B2LP-7B	Standard	S1	7	8	10,000/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

S1

S1 = Product Type Marking Code Bar Denotes Pin 1



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

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Power Dissipation	P_{PP}	410	W	8/20µs, Figure 3
Peak Pulse Current	I _{PP}	50	Α	8/20µs, Figure 3
ESD Protection – Contact Discharge	V _{ESD_CONTACT}	±30	kV	IEC 61000-4-2 Standard
ESD Protection – Air Discharge	V _{ESD_AIR}	±30	kV	IEC 61000-4-2 Standard

Thermal Characteristics

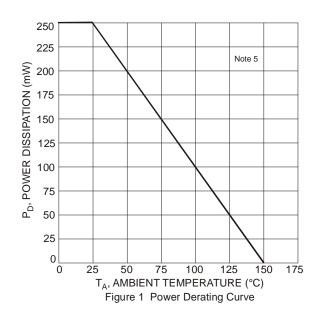
Characteristic	Symbol	Value	Unit
Package Power Dissipation (Note 5)	P_{D}	250	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{ hetaJA}$	500	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

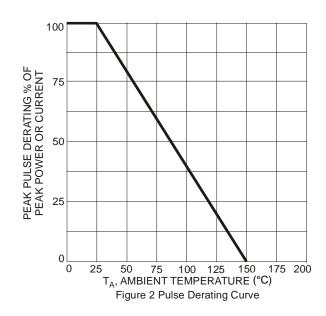
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Test Conditions
Reverse Standoff Voltage	V_{RWM}	_	_	3.3	V	_
Channel Leakage Current (Note 6)	I_{RM}	1	10	500	nA	V _{RWM} = 3.3V
Clamping Voltage, IEC 61000-4-5	V _{CL}	_	_	7.0	V	I _{PP} = 1A, tp = 8/20µs
		_	_	9.5		$I_{PP} = 40A$, $tp = 8/20\mu s$
Breakdown Voltage	V_{BR}	3.8	_	6.5	V	I _R = 1mA
Channel Input Capacitance	C _T	_	118	_	pF	$V_R = 0V, f = 1MHz$

Notes:

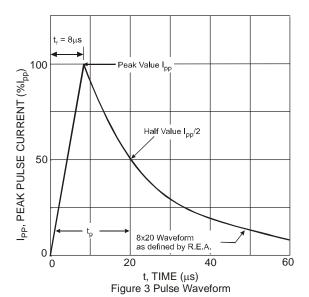
^{6.} Short duration pulse test used to minimize self-heating effect.

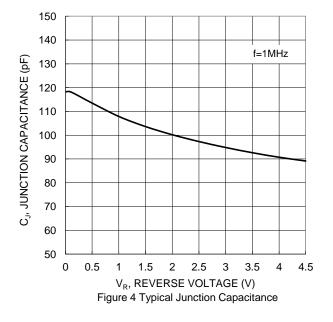




^{5.} Device mounted on FR-4 PCB pad layout (2oz copper) as shown on Diodes Incorporated's suggested pad layout, which can be found on our website at http://www.diodes.com/package-outlines.html.





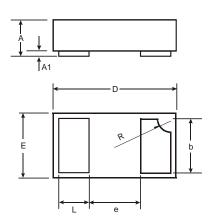




Package Outline Dimensions

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

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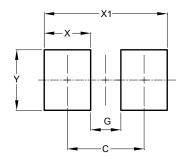


X1-DFN1006-2					
Dim	Min	Max	Тур		
Α	0.47	0.53	0.50		
A1	0	0.05	0.03		
b	0.45	0.55	0.50		
D	0.95	1.075	1.00		
Е	0.55	0.675	0.60		
е	-	-	0.40		
L	0.20	0.30	0.25		
R	0.05	0.15	0.10		
All	All Dimensions in mm				

Suggested Pad Layout

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

X1-DFN1006-2



Dimensions	Value (in mm)		
С	0.70		
G	0.30		
Х	0.40		
X1	1.10		
Υ	0.70		



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