

## Product Summary

<b>V<sub>BR</sub> (Min)</b>	<b>I<sub>PP</sub> (Max)</b>	<b>C<sub>T</sub> (Typ)</b>
5.7V	4.0A	0.25pF

## Description

D5V0Z1B2LP3 is a new generation TVS, which is designed to protect sensitive electronics from the damage due to ESD and includes a bi-directional ESD related clamping cell to protect high-speed data interface in an electronic system.

## Applications

- Wearable devices
- Portable electronics
- Hand-held portables
- Antenna protections

X2-DFN0603-2



Top View

## Features

- Ultra-Small, Low-Profile Leadless Surface-Mount Package (0.6mm x 0.3mm x 0.3mm)
- Provides ESD Protection per IEC 61000-4-2 Standard: Air ±25kV, Contact ±25kV
- One Channel of ESD Protection
- 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-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](mailto:contact@diodes.com) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

## Mechanical Data

- Package: X2-DFN0603-2
- Package Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin over Copper Leadframe, Solderable per MIL-STD-202, Method 208 (E3)
- Weight: 0.0002 grams (Approximate)



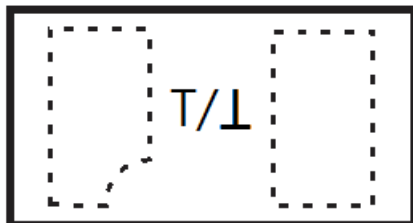
Device Schematic

## Ordering Information (Notes 4 & 5)

Part Number	Package	Marking	Reel Size (inches)	Tape Width (mm)	Packing	
					Qty.	Carrier
D5V0Z1B2LP3-7	X2-DFN0603-2	T/T (Reversed)	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/>.
  5. Package is non-polarized. Parts may be on reel in orientation as illustrated, 180° rotated, or mixed (both ways).

## Marking Information



T/L = Product Type Marking Code

**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Current	I <sub>PP</sub>	4.0	A	8/20μs, per Figure 3
ESD Protection – Contact Discharge	V <sub>ESD_CONTACT</sub>	±25	kV	IEC 61000-4-2 Standard
ESD Protection – Air Discharge	V <sub>ESD_AIR</sub>	±25	kV	IEC 61000-4-2 Standard

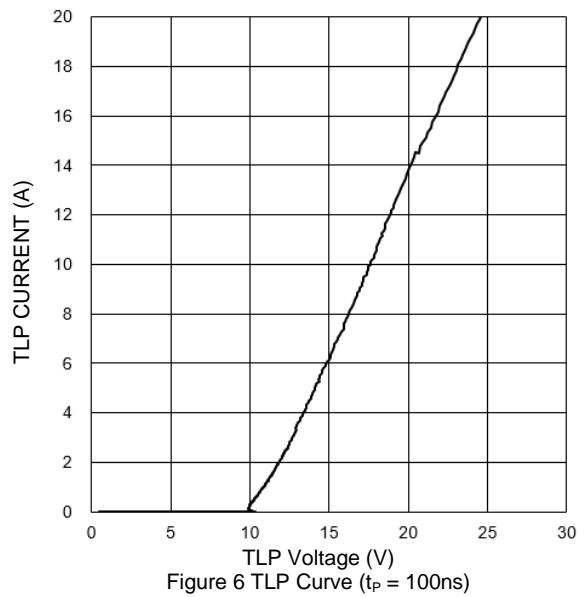
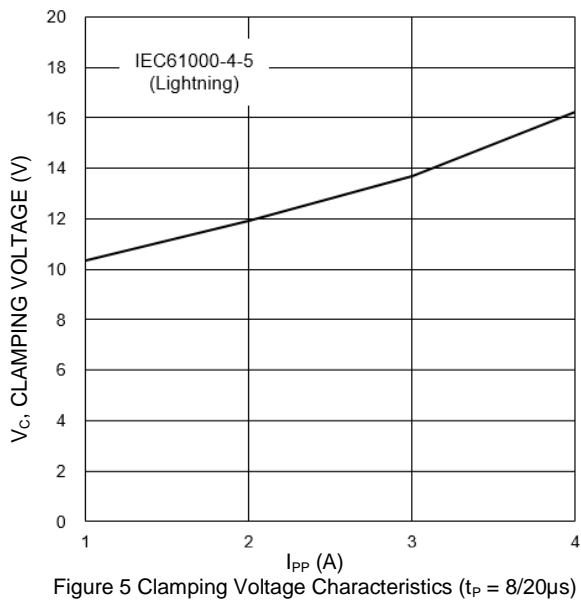
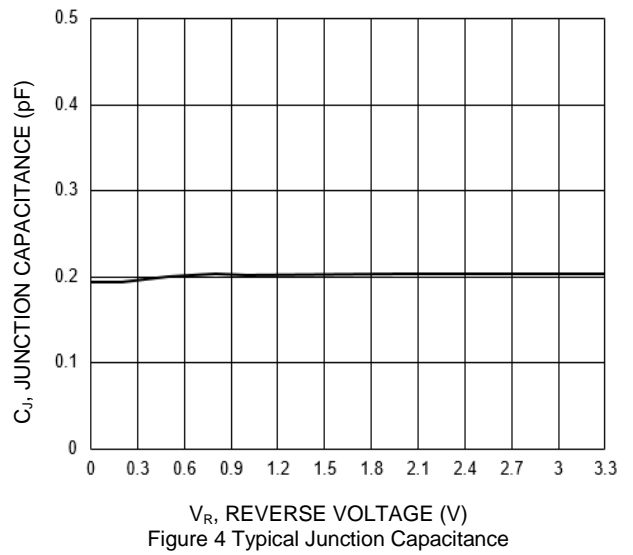
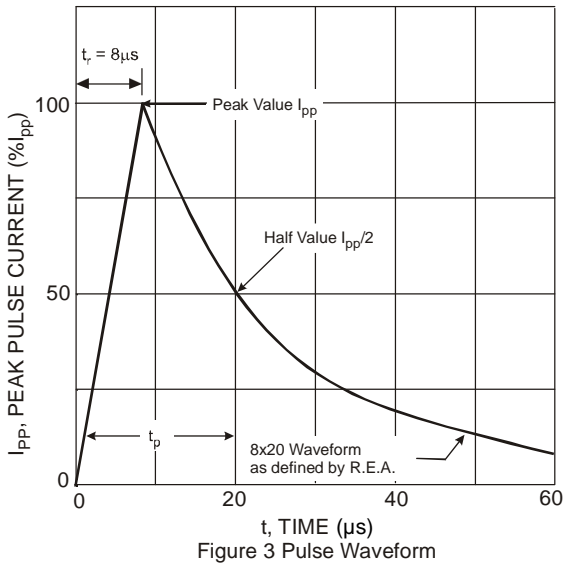
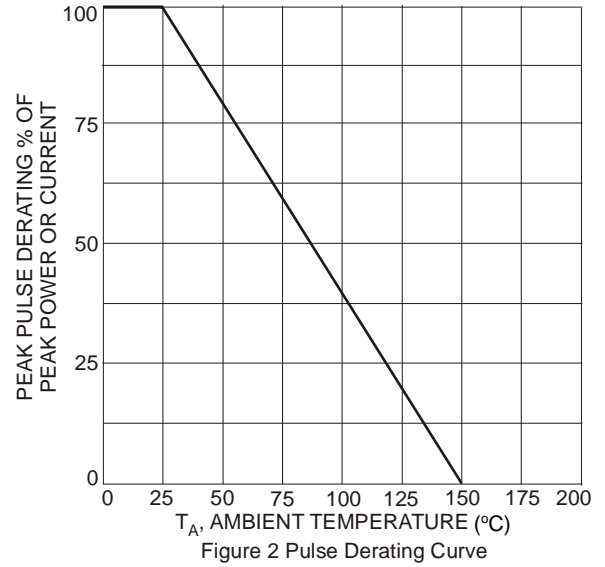
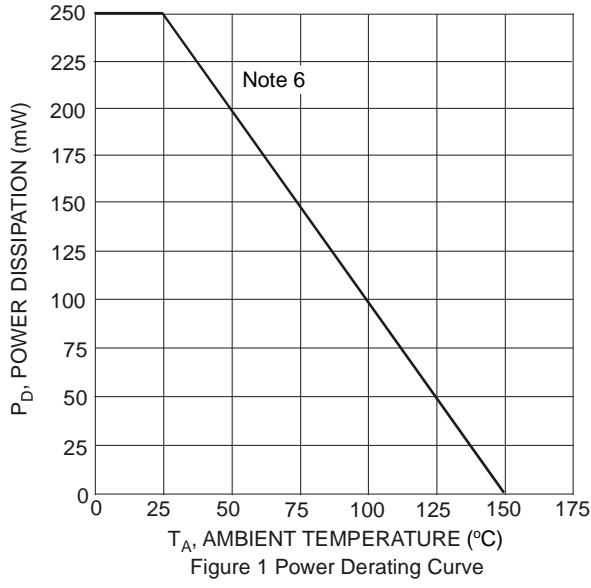
**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Package Power Dissipation (Note 6)	P <sub>D</sub>	250	mW
Thermal Resistance, Junction to Ambient (Note 6)	R <sub>θJA</sub>	500	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Standoff Voltage	V <sub>RWM</sub>	—	—	5.5	V	—
Channel Leakage Current (Note 7)	I <sub>RM</sub>	—	—	100	nA	V <sub>RWM</sub> = 5.5V
Breakdown Voltage	V <sub>BR</sub>	5.7	—	8.3	V	I <sub>R</sub> = 1mA
Dynamic Resistance (Note 8)	R <sub>DYN</sub>	—	0.7	—	Ω	TLP, t <sub>p</sub> = 100ns
Clamping Voltage	V <sub>CL</sub>	—	—	14.0	V	I <sub>PP</sub> = 1A, t <sub>p</sub> = 8/20μs
		—	—	18.3	V	I <sub>PP</sub> = 4A, t <sub>p</sub> = 8/20μs
Channel Input Capacitance	C <sub>T</sub>	—	0.25	0.30	pF	V <sub>R</sub> = 0V, f = 1MHz

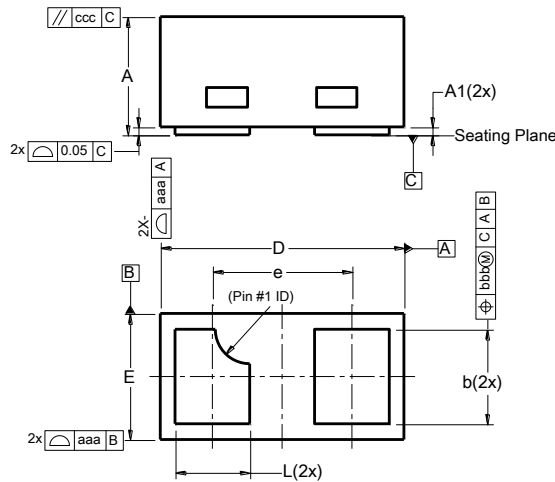
- Notes:
6. Device mounted on FR-4 PCB pad layout (2oz copper) as shown on Diodes Incorporated's suggested pad layout, which can be found on our website at <http://www.diodes.com/package-outlines.html>.
  7. Short duration pulse test used to minimize self-heating effect.
  8. Transmission Line Pulse Test (TLP) settings: t<sub>p</sub> = 100ns, t<sub>r</sub> = 10ns, I<sub>TLP</sub> and V<sub>TLP</sub> averaging window is from 70ns to 90ns.



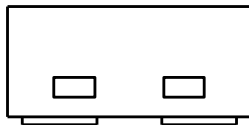
**Package Outline Dimensions**

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

**X2-DFN0603-2**



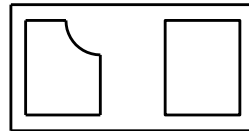
X2-DFN0603-2			
Dim	Min	Max	Typ
A	0.27	0.35	0.30
A1	0.00	0.03	0.02
b	0.19	0.29	0.24
D	0.595	0.645	0.620
E	0.295	0.345	0.320
e	--	--	0.355
L	0.14	0.24	0.19
aaa	0.08		
bbb	0.07		
ccc	0.05		
All Dimensions in mm			



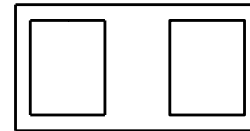
OPTION A  
(SIDE VIEW)



OPTION B  
(SIDE VIEW)



OPTION A  
(BOTTOM VIEW)

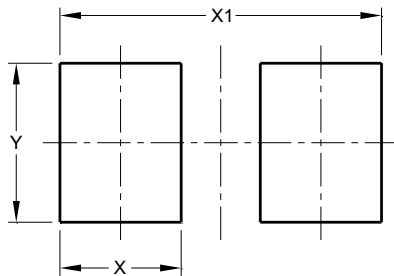


OPTION B  
(BOTTOM VIEW)

**Suggested Pad Layout**

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

**X2-DFN0603-2**



Dimensions	Value (in mm)
X	0.230
X1	0.610
Y	0.300

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