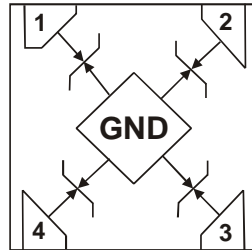


## Features

- Provides ESD Protection per IEC 61000-4-2 Standard: Air  $\pm 15\text{kV}$ , Contact  $\pm 15\text{kV}$
- 4 Channel of ESD Protection
- Low Channel Input Capacitance of 4.8pF Typical
- IEC 61000-4-5 (Surge): 3A ( $t_P = 8 \times 20\mu\text{s}$ )
- Ultra Low Leakage Current 100nA (Max)
- 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: X2-DFN0808-4
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: See Diagram
- Terminals: Finish — NiPdAu Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 <sup>(E4)</sup>
- Weight: 0.0015 grams (Approximate)



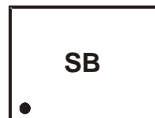
Top View  
Pin Configuration

## Ordering Information (Note 4)

Product	Compliance	Marking	Reel Size(inch)	Tape Width(mm)	Quantity per Reel
D5V0P4B5LP08-7	Standard	SB	7	8	5,000/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](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



SB = Product Type Marking Code

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

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Power Dissipation	P <sub>PP</sub>	40	W	8/20μs
Peak Pulse Current	I <sub>PP</sub>	3	A	8/20μs
ESD Protection – Contact Discharge	V <sub>ESD_CONTACT</sub>	±15	kV	IEC 61000-4-2 Standard
ESD Protection – Air Discharge	V <sub>ESD_AIR</sub>	±15	kV	IEC 61000-4-2 Standard

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Package Power Dissipation (Note 5)	P <sub>D</sub>	300	mW
Thermal Resistance, Junction to Ambient (Note 5)	R <sub>θJA</sub>	417	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 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	—
Leakage Current (Note 6)	I <sub>RM</sub>	—	—	100	nA	V <sub>RWM</sub> = 5V
Clamping Voltage from Data Pin to GND	V <sub>CL1</sub>	—	10 13	—	V	I <sub>PP</sub> = 1A, t <sub>p</sub> = 8/20μs I <sub>PP</sub> = 3A, t <sub>p</sub> = 8/20μs
Clamping Voltage from GND to Data Pin	V <sub>CL2</sub>	—	9 13	—	V	I <sub>PP</sub> = 1A, t <sub>p</sub> = 8/20μs I <sub>PP</sub> = 3A, t <sub>p</sub> = 8/20μs
Dynamic Resistance	R <sub>DYN</sub>	—	0.45 0.42	—	Ω	Pins to GND (Note 7) GND to Pins (Note 7)
IO Capacitance	C <sub>IO</sub>	—	4.8	7	pF	V <sub>IO</sub> = 2.5V, f = 1MHz
Breakdown Voltage from Data Pin to GND	V <sub>BFR</sub>	6	—	—	V	I <sub>R</sub> = 1mA
Breakdown Voltage from GND to Data Pin	V <sub>BRR</sub>	6	—	—	V	I <sub>R</sub> = 1mA

- Notes:
5. Device mounted on FR-4 PCB pad layout (2oz copper) as shown on Diodes, Inc. suggested pad layout, 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.
  7. Extraction of R<sub>DYN</sub> using least squares fit of TLP between I = 10A and I = 20A.

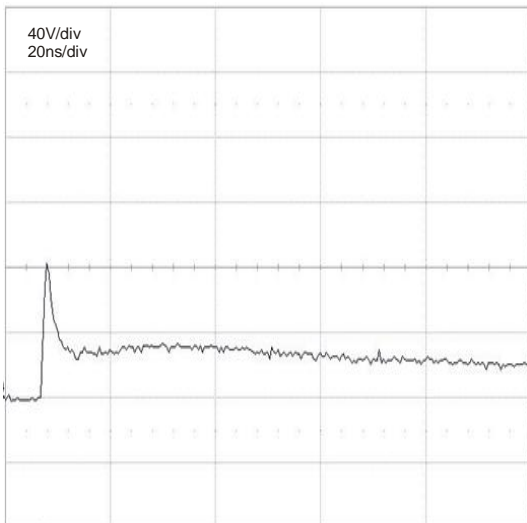


Figure 1 IEC 6100-4-2 Clamping Voltage  
+8kV Contact

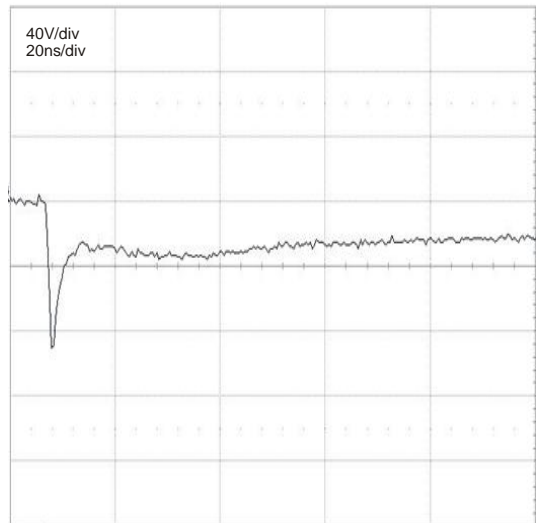


Figure 2 IEC 6100-4-2 Clamping Voltage  
-8kV Contact

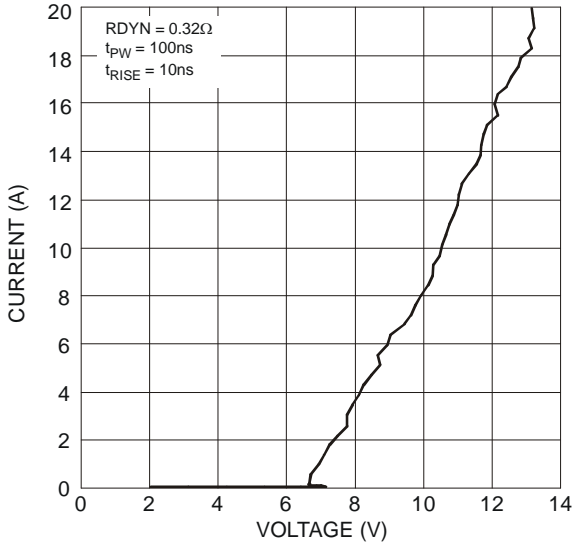


Figure 3 TLP,  $t_{PW} = 100\text{nS}$ ,  $t_{RISE} = 10\text{nS}$ , Data to GND

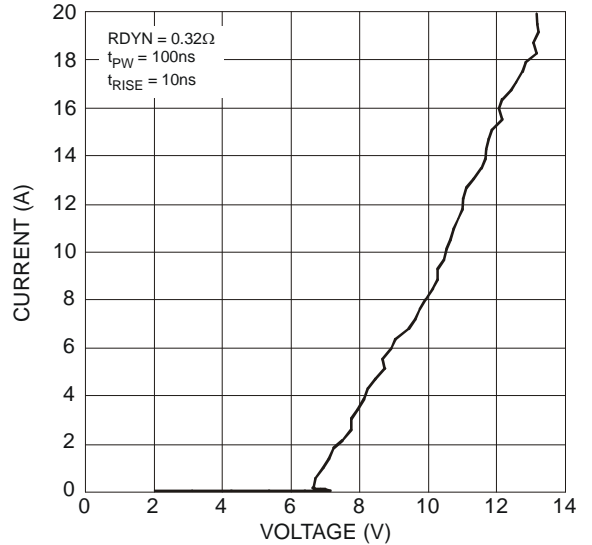


Figure 4 TLP,  $t_{PW} = 100\text{nS}$ ,  $t_{RISE} = 10\text{nS}$ , GND to Data

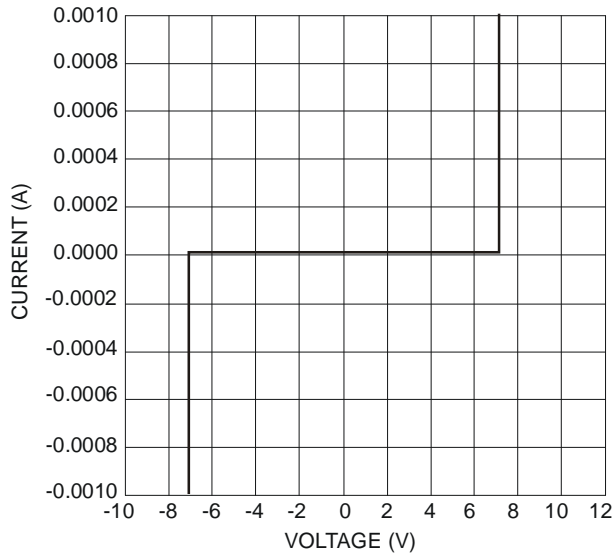


Figure 5 IV Curve

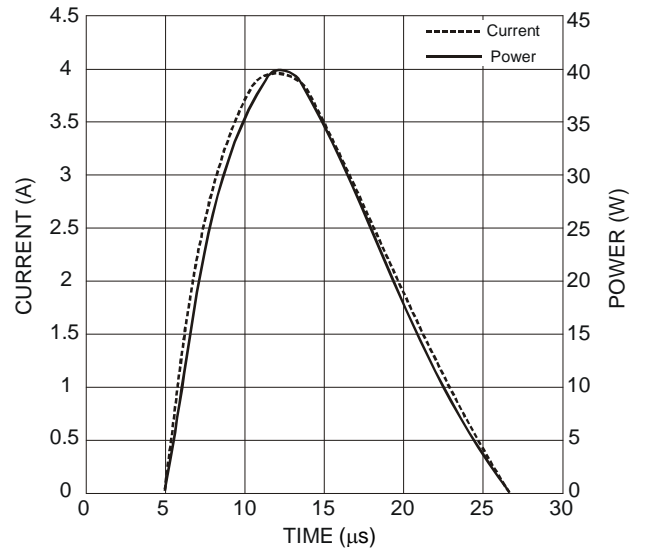


Figure 6 Surge Curves, Data to GND

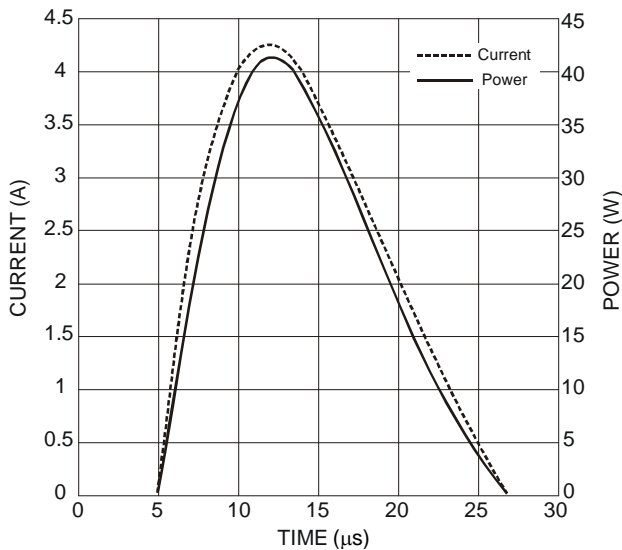


Figure 7 Surge Curves, GND to Data

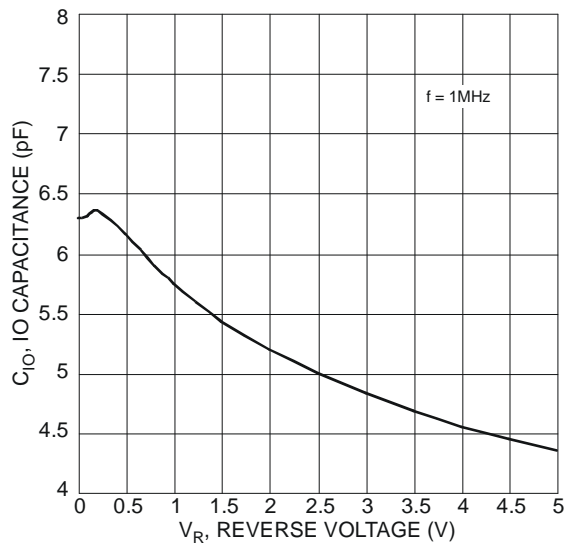
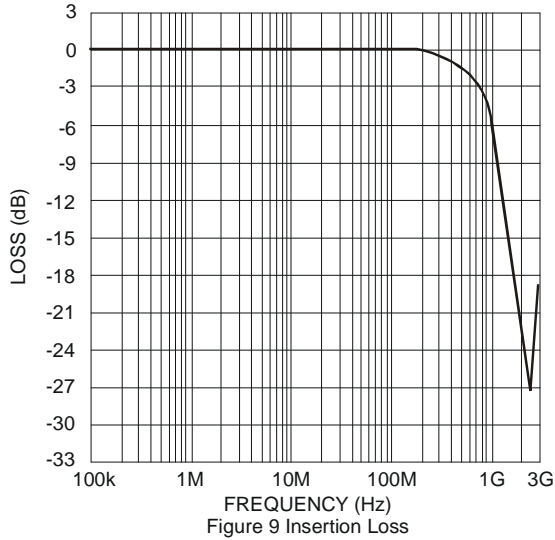


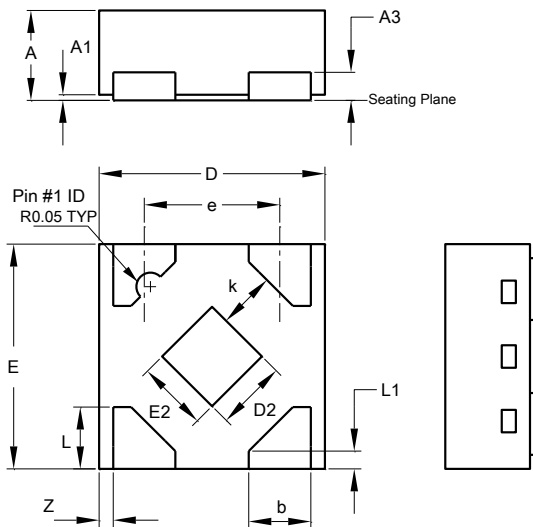
Figure 8 Typical Junction Capacitance



**Package Outline Dimensions**

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

**X2-DFN0808-4**

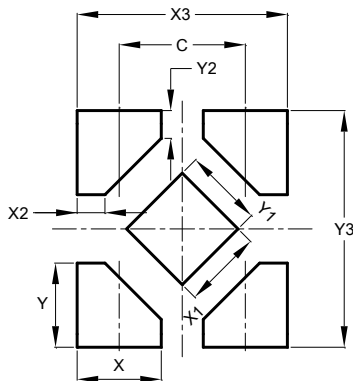


X2-DFN0808-4			
Dim	Min	Max	Typ
A	0.25	0.35	0.30
A1	0	0.04	0.02
A3	-	-	0.13
b	0.17	0.27	0.22
D	0.75	0.85	0.80
D2	0.15	0.35	0.25
E	0.75	0.85	0.80
E2	0.15	0.35	0.25
e	-	-	0.48
k	0.20	-	-
L	0.17	0.27	0.22
L1	0.02	0.12	0.07
z	-	-	0.05
All Dimensions in mm			

**Suggested Pad Layout**

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

**X2-DFN0808-4**



Dimensions	Value
C	0.480
X	0.320
X1	0.300
X2	0.106
X3	0.800
Y	0.320
Y1	0.300
Y2	0.106
Y3	0.900

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