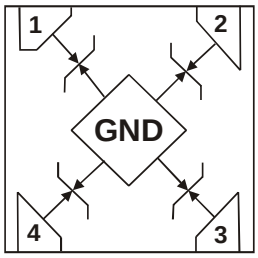
Features

- Provides ESD Protection per IEC 61000-4-2 Standard: Air ±15kV, Contact ±15kV
- 4 Channel of ESD Protection
- Low Channel Input Capacitance of 4.8pF Typical
- IEC 61000-4-5 (Surge): 3A (t_P = 8x20µs)
- 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 e4
- 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 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

© Diodes Incorporated

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

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Power Dissipation	P_{PP}	40	W	8/20µs
Peak Pulse Current	I_{PP}	3	A	8/20µs
ESD Protection – Contact Discharge	$V_{ESD_CONTACT}$	±15	kV	IEC 61000-4-2 Standard
ESD Protection – Air Discharge	V_{ESD_AIR}	±15	kV	IEC 61000-4-2 Standard

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Package Power Dissipation (Note 5)	P_D	300	mW
Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	417	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Standoff Voltage	V_{RWM}	—	—	±5.5	V	—
Leakage Current (Note 6)	I_{RM}	—	—	100	nA	V_{RWM} = 5V
Clamping Voltage from Data Pin to GND	V_{CL1}	— —	10 13	— —	V	I_{PP} = 1A, t_P = 8/20µs I_{PP} = 3A, t_P = 8/20µs
Clamping Voltage from GND to Data Pin	V_{CL2}	— —	9 13	— —	V	I_{PP} = 1A, t_P = 8/20µs I_{PP} = 3A, t_P = 8/20µs
Dynamic Resistance	R_{DYN}	— —	0.45 0.42	— —	Ω	Pins to GND (Note 7) GND to Pins (Note 7)
IO Capacitance	C_{IO}	—	4.8	7	pF	V_{IO} = 2.5V, f = 1MHz
Breakdown Voltage from Data Pin to GND	V_{BRF}	6	—	—	V	I_R = 1mA
Breakdown Voltage from GND to Data Pin	V_{BRR}	6	—	—	V	I_R = 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 RDYN using least squares fit of TLP between I = 10A and I = 20A.

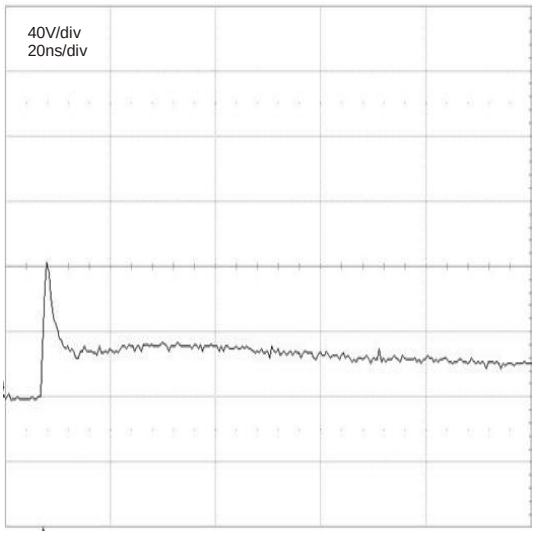


Figure 1 IEC 6100-4-2 Clamping Voltage
+8kV Contact

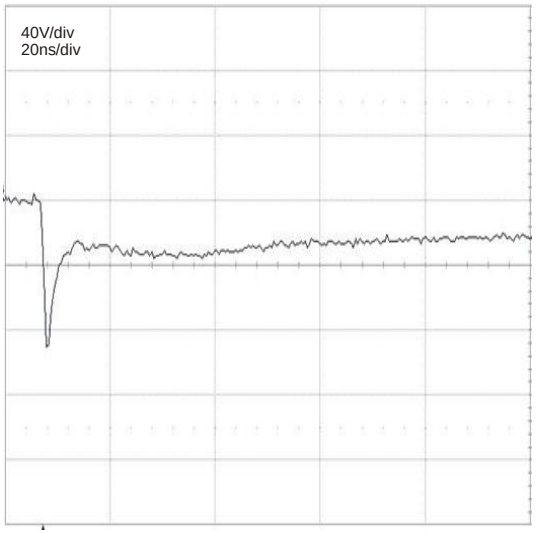


Figure 2 IEC 6100-4-2 Clamping Voltage
-8kV Contact

© Diodes Incorporated

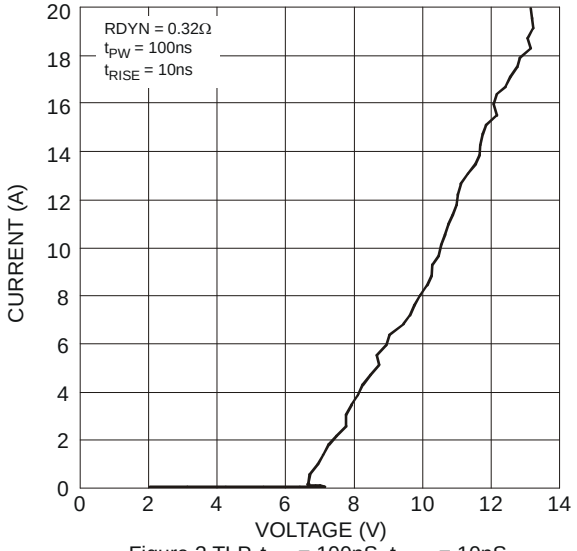


Figure 3 TLP, t_{PW} = 100nS, t_{RISE} = 10nS, Data to GND

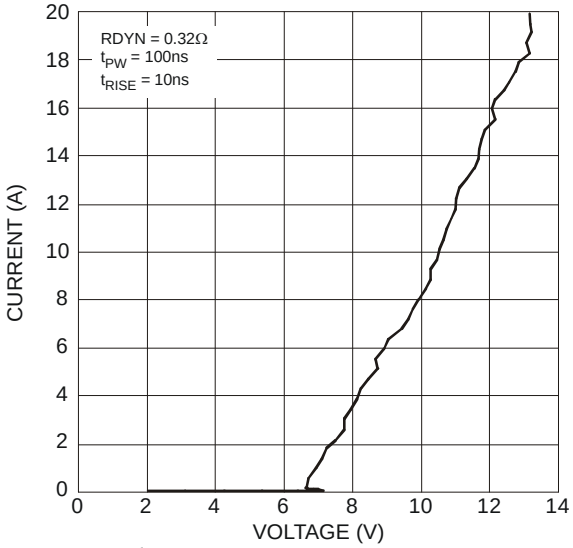


Figure 4 TLP, t_{PW} = 100nS, t_{RISE} = 10nS, GND to Data

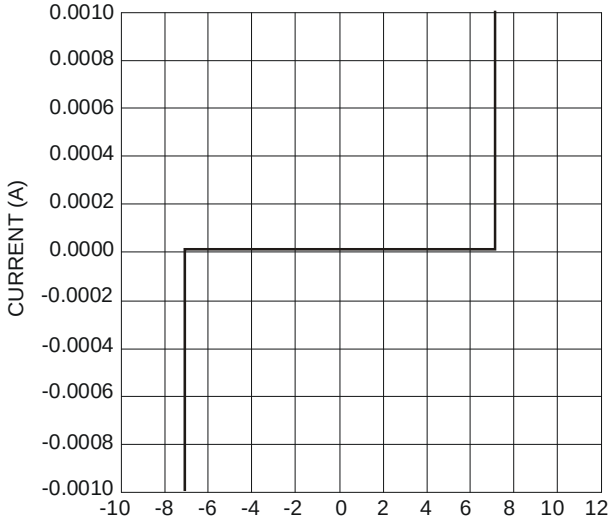


Figure 5 IV Curve

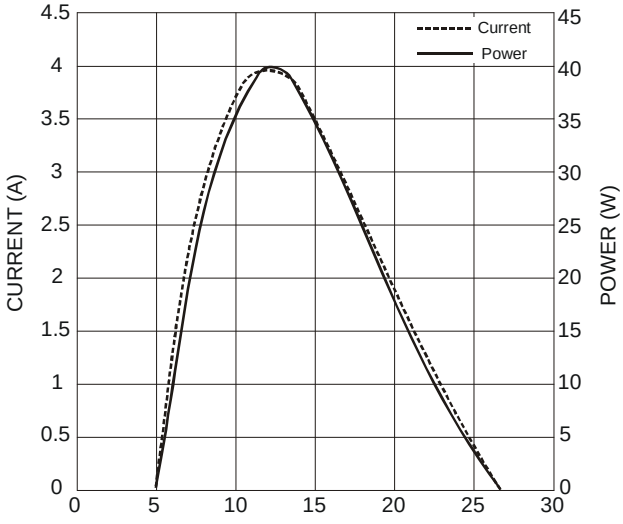


Figure 6 Surge Curves, Data to GND

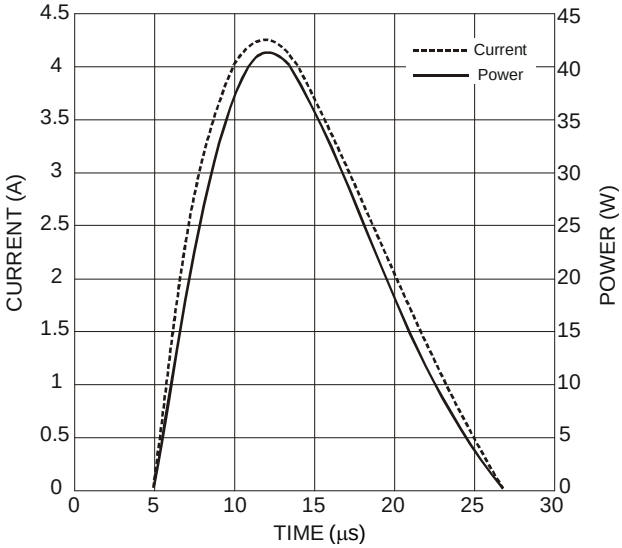


Figure 7 Surge Curves, GND to Data

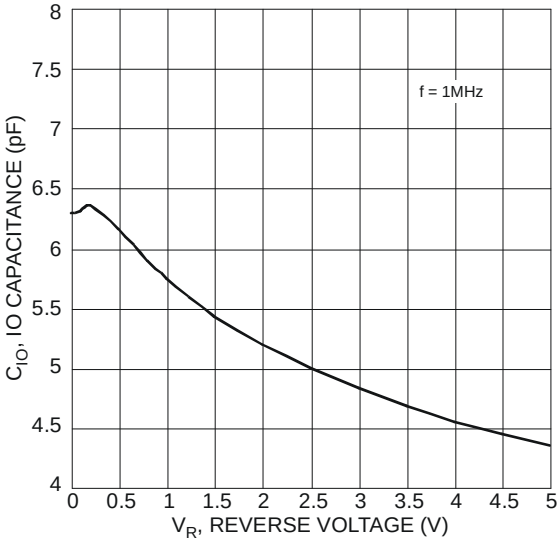


Figure 8 Typical Junction Capacitance

© Diodes Incorporated

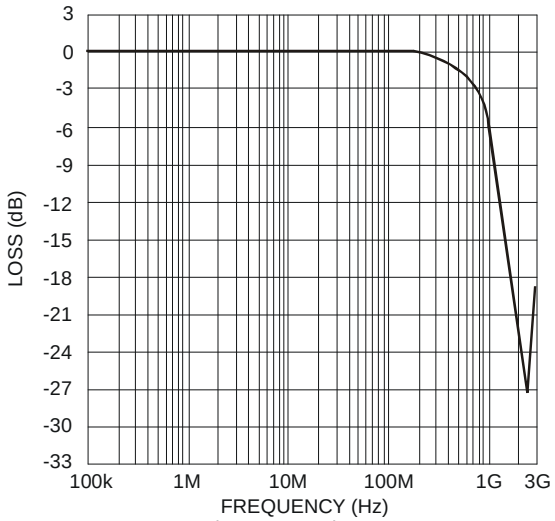
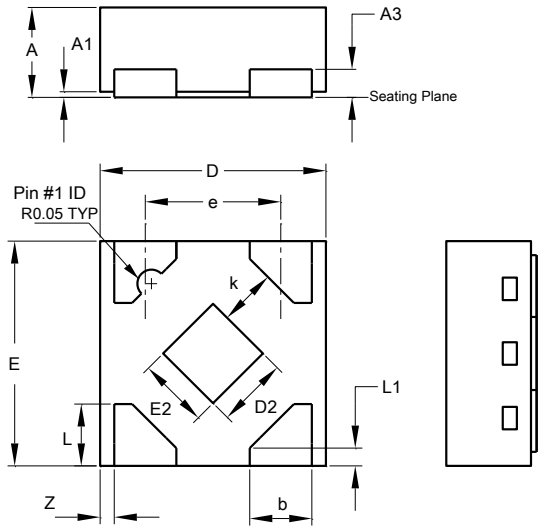


Figure 9 Insertion Loss

Package Outline Dimensions

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

X2-DFN0808-4

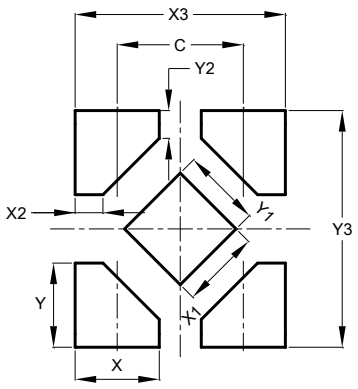


X2-DFN0808-4			
Dim	**Min**	**Max**	**Typ**
A	0.25	0.35	0.30
A1	0	0.04	0.02
A3	-	-	0.13
b	0.17	0.27	0.22
D	0.75	0.85	0.80
D2	0.15	0.35	0.25
E	0.75	0.85	0.80
E2	0.15	0.35	0.25
e	-	-	0.48
k	0.20	-	-
L	0.17	0.27	0.22
L1	0.02	0.12	0.07
z	-	-	0.05
All Dimensions in mm			

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

© Diodes Incorporated

IMPORTANT NOTICE

DIODES INCORPORATED MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARDS TO THIS DOCUMENT, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION).

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to this document and any product described herein. Diodes Incorporated does not assume any liability arising out of the application or use of this document or any product described herein; neither does Diodes Incorporated convey any license under its patent or trademark rights, nor the rights of others. Any Customer or user of this document or products described herein in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on Diodes Incorporated website, harmless against all damages.

Diodes Incorporated does not warrant or accept any liability whatsoever in respect of any products purchased through unauthorized sales channel. Should Customers purchase or use Diodes Incorporated products for any unintended or unauthorized application, Customers shall indemnify and hold Diodes Incorporated and its representatives harmless against all claims, damages, expenses, and attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized application.

Products described herein may be covered by one or more United States, international or foreign patents pending. Product names and markings noted herein may also be covered by one or more United States, international or foreign trademarks.

This document is written in English but may be translated into multiple languages for reference. Only the English version of this document is the final and determinative format released by Diodes Incorporated.

LIFE SUPPORT

Diodes Incorporated products are specifically not authorized for use as critical components in life support devices or systems without the express written approval of the Chief Executive Officer of Diodes Incorporated. As used herein:

A. Life support devices or systems are devices or systems which:

1. are intended to implant into the body, or

2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.

B. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or to affect its safety or effectiveness.

Customers represent that they have all necessary expertise in the safety and regulatory ramifications of their life support devices or systems, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of Diodes Incorporated products in such safety-critical, life support devices or systems, notwithstanding any devices- or systems-related information or support that may be provided by Diodes Incorporated. Further, Customers must fully indemnify Diodes Incorporated and its representatives against any damages arising out of the use of Diodes Incorporated products in such safety-critical, life support devices or systems.

Copyright © 2016, Diodes Incorporated

www.diodes.com