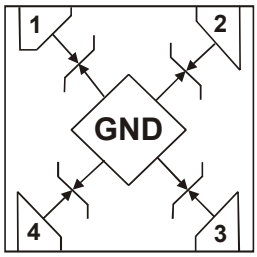
4 CHANNEL BI-DIRECTIONAL TVS ARRAY

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 (tp = 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(inches)	Tape width(mm)	Quantity per reel
D5V0P4B5LP08-7	Standard	SB	7	8	10,000/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

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 AP02001, which can be found on our website at http://www.diodes.com.
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.

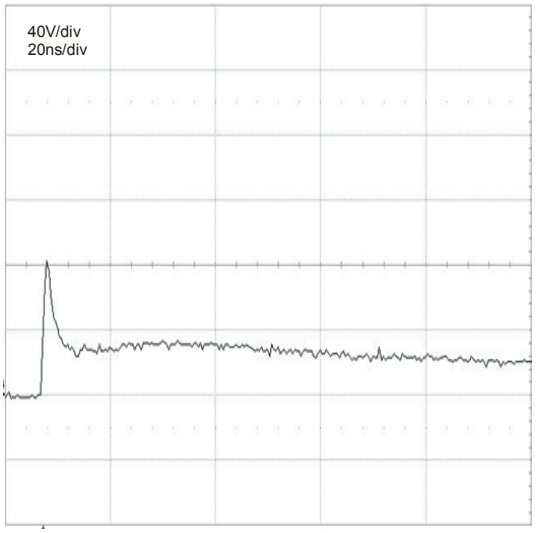


Figure 1 IEC 6100-4-2 Clamping Voltage
+8kV Contact

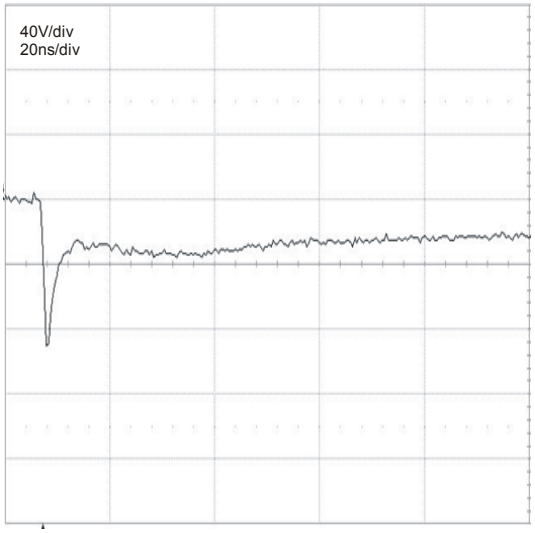


Figure 2 IEC 6100-4-2 Clamping Voltage
-8kV Contact

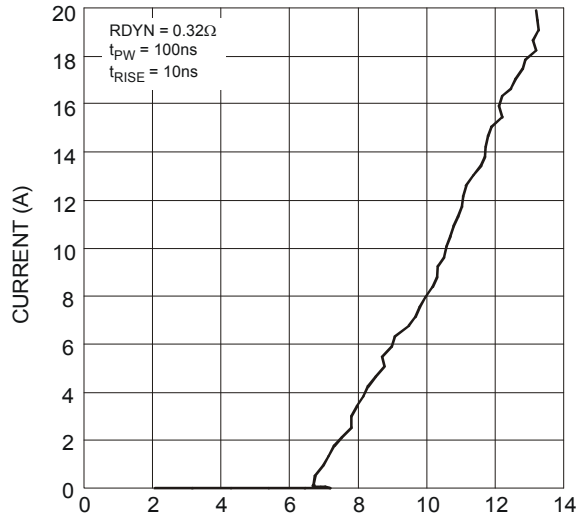


Figure 3 TLP, t_{PW} = 100nS, t_{RISE} = 10nS, Data to GND

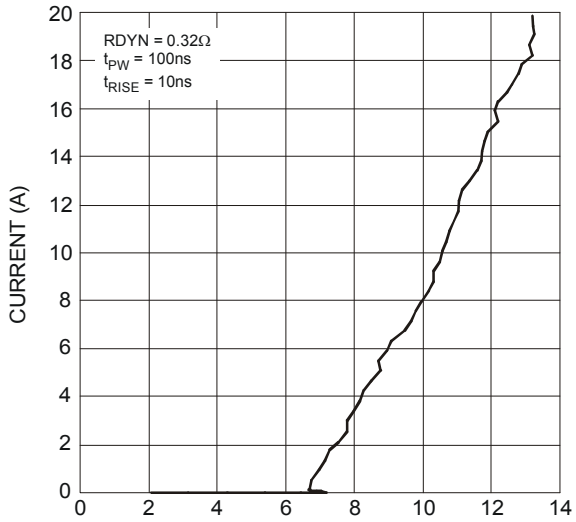


Figure 4 TLP, t_{PW} = 100nS, t_{RISE} = 10nS, GND to Data

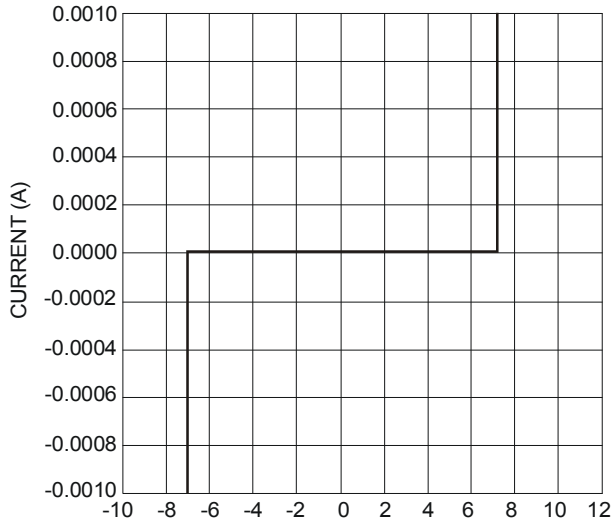


Figure 5 IV Curve

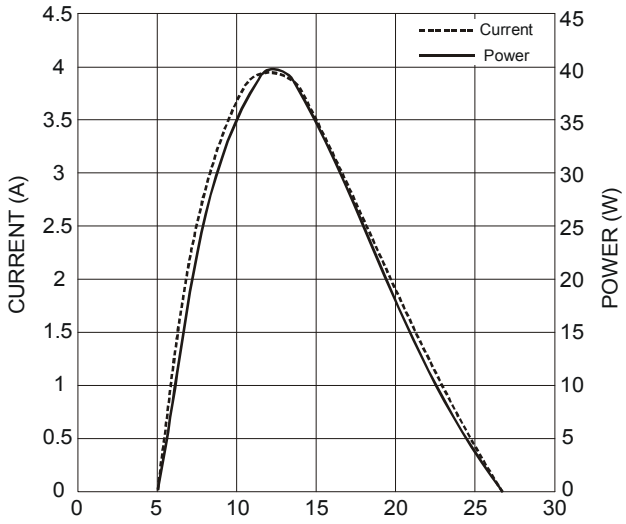


Figure 6 Surge Curves, Data to GND

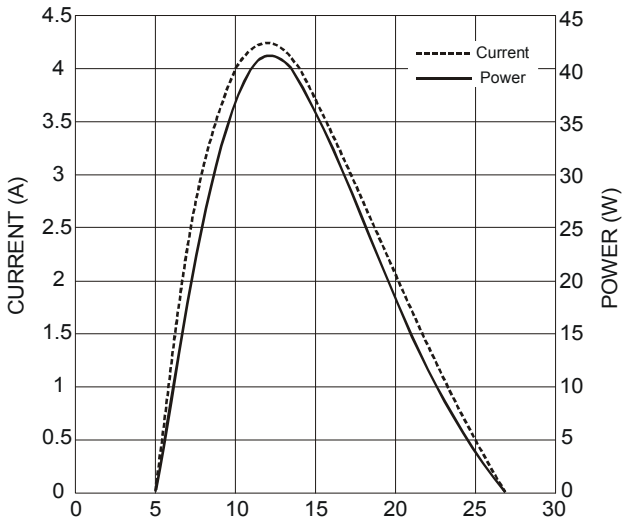


Figure 7 Surge Curves, GND to Data

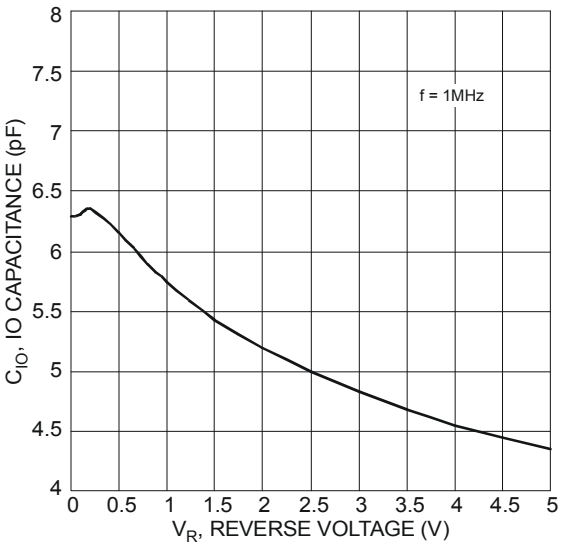


Figure 8 Typical Junction Capacitance

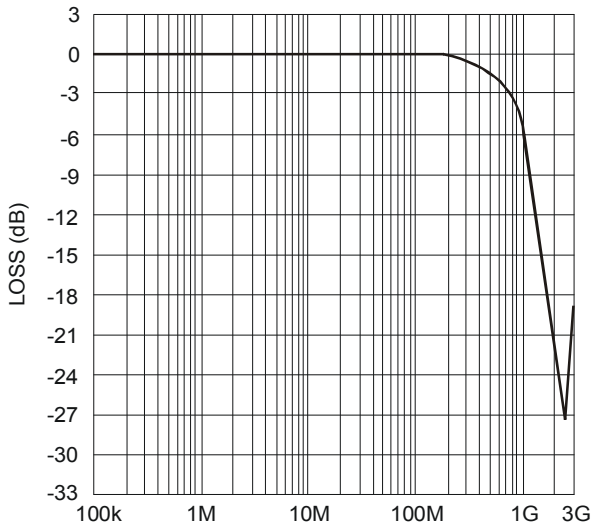
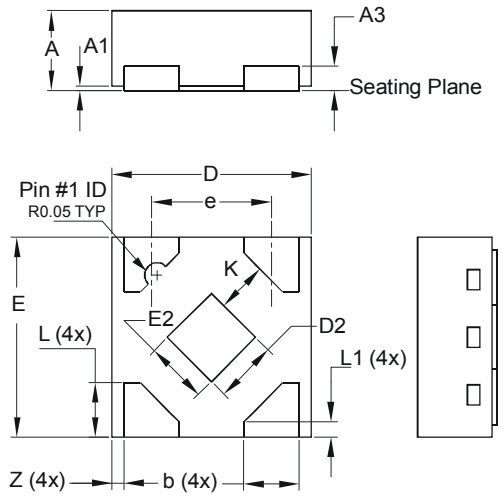


Figure 9 Insertion Loss

Package Outline Dimensions

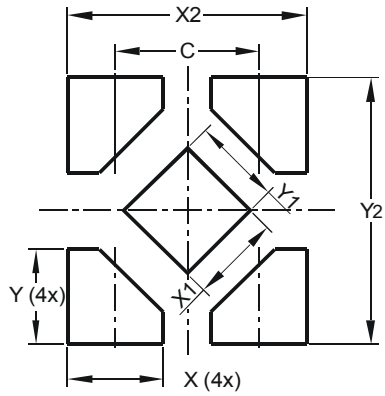
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



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 AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



Dimensions	Value (in mm)
C	0.480
X	0.320
X1	0.300
X2	0.800
Y	0.320
Y1	0.300
Y2	0.900

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