



DESD5V0U1BL

LOW CAPACITANCE BIDIRECTIONAL TVS DIODE

Features

- Provides ESD Protection per IEC 61000-4-2 Standard: Contact ±10kV
- 1 Channel of ESD Protection
- High Peak Pulse Current per IEC 61000-4-5 Standard
- Low Channel Input Capacitance
- 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: X1-DFN1006-2
- Case Material: Molded Plastic, "Green" Molding Compound; UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: NiPdAu over Copper Leadframe. Solderable per MIL-STD-202, Method 208 @
- Polarity: Cathode Band
- Weight: 0.001 grams (Approximate)



Bottom View



Device Schematic

Ordering Information (Note 4)

| Product | Compliance | Marking | Reel Size (inches) | Tape Width (mm) | Quantity per Reel |
|----------------|------------|---------|--------------------|-----------------|--------------------|
| DESD5V0U1BL-7B | Standard | RK | 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

X1-DFN1006-2



RK = Product Type Marking Code Line Denotes Cathode Side



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

| Characteristic | Symbol | Value | Unit | Conditions |
|------------------------------------|--------------------|-------|------|------------------------|
| Peak Pulse Current | I _{PP} | 3 | А | 8/20µs, per Figure 3 |
| ESD Protection – Contact Discharge | $V_{ESD_Contact}$ | ±10 | kV | IEC 61000-4-2 Standard |

Thermal Characteristics

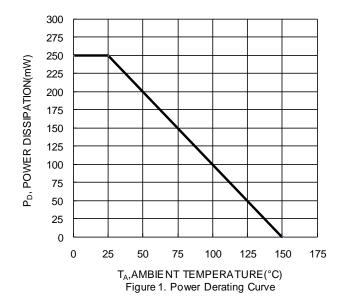
| Characteristic | Symbol | Value | Unit |
|--|-----------------------------------|-------------|------|
| Package Power Dissipation (Note 5) | PD | 250 | mW |
| Thermal Resistance, Junction to Ambient (Note 5) | R _{0JA} | 522 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -65 to +150 | С° |

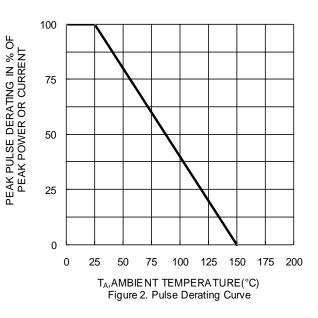
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Min | Тур | Max | Unit | Test Conditions |
|----------------------------------|------------------|-----|-----|-----|------|---|
| Reverse Standoff Voltage | V _{RWM} | — | - | 5 | V | _ |
| Channel Leakage Current (Note 6) | I _{RM} | — | 5 | 100 | nA | V _{RWM} = 5V |
| Clamping Voltage | V _{CL} | — | 7.2 | — | V | I _{PP} = 3A, t _p = 8/20μs |
| Breakdown Voltage | V _{BR} | 5.5 | 7 | 9.5 | V | $I_R = 5mA$ |
| Differential Resistance | R _{DIF} | — | — | 100 | Ω | I _R = 1mA |
| Channel Input Capacitance | Ст | — | 2.9 | _ | | $V_R = 0V, f = 1MHz$ |
| | | | 1.9 | _ | | $V_R = 5V, f = 1MHz$ |

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.

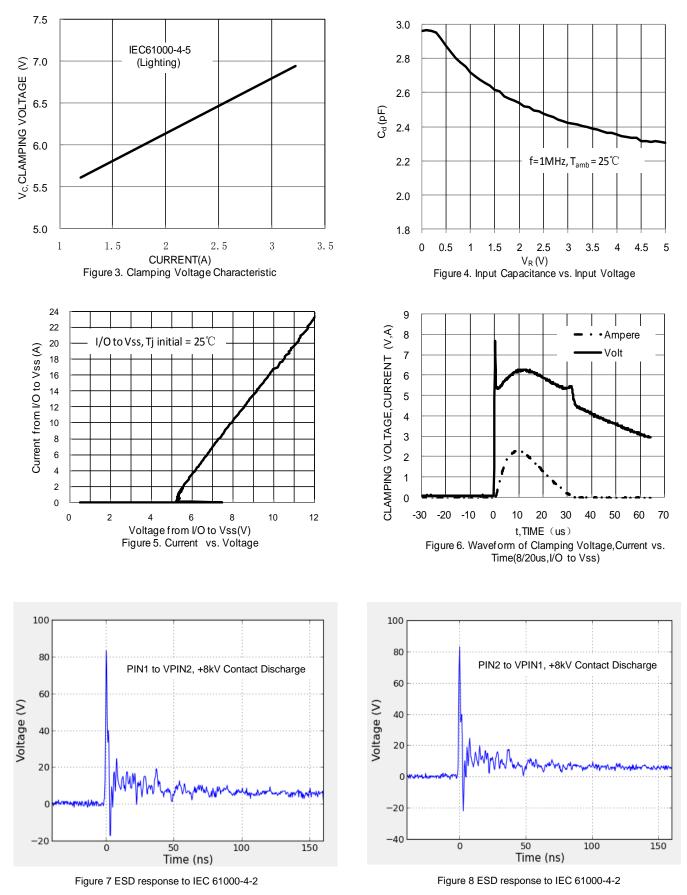
6. Short duration pulse test used to minimize self-heating effect.







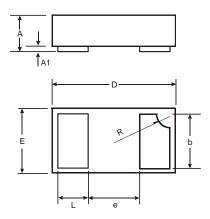
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Package Outline Dimensions

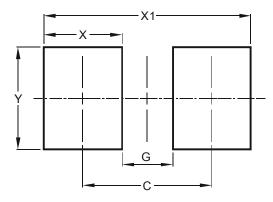
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



| 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 | | |
| E | 0.55 | 0.675 | 0.60 | | |
| е | - | - | 0.40 | | |
| L | 0.20 | 0.30 | 0.25 | | |
| R | 0.05 | 0.15 | 0.10 | | |
| 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) |
|------------|---------------|
| С | 0.70 |
| G | 0.30 |
| Х | 0.40 |
| X1 | 1.10 |
| Y | 0.70 |



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