

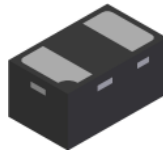
## Features

- Low Profile Package (0.53mm max) and Ultra-Small PCB Footprint Area (1.08 \* 0.68mm max) Suitable for Compact Portable Electronics
- Provides ESD Protection per IEC 61000-4-2 Standard: Air  $\pm 30\text{kV}$ , Contact  $\pm 25\text{kV}$
- 1 Channel of ESD Protection
- 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)**

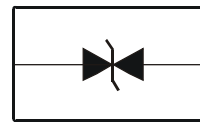
## Mechanical Data

- 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 <sup>(4)</sup>
- Polarity: Cathode Band
- Weight: 0.001 grams (Approximate)

X1-DFN1006-2



Bottom View



Device Schematic

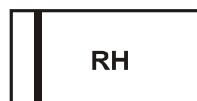
## Ordering Information (Note 4)

Product	Compliance	Marking	Reel size(inches)	Tape width(mm)	Quantity per reel
DESD3V3S1BL-7B	Standard	RH	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](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



RH = Product Type Marking Code  
Line Denotes Pin#1

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

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Power Dissipation	P <sub>PP</sub>	35	W	8/20μs, Per Figure 3
Peak Pulse Current	I <sub>PP</sub>	5	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>	±30	kV	IEC 61000-4-2 Standard

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Package Power Dissipation (Note 5)	P <sub>D</sub>	250	mW
Thermal Resistance, Junction to Ambient (Note 5)	R <sub>θJA</sub>	500	°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>	—	—	3.3	V	—
Channel Leakage Current (Note 6)	I <sub>RM</sub>	—	10	100	nA	V <sub>RWM</sub> = 3.3V
Clamping Voltage, Positive Transients	V <sub>CL</sub>	—	4.5 5.8	5.4 7.0	V	I <sub>PP</sub> = 1A, t <sub>p</sub> = 8/20μS I <sub>PP</sub> = 5A, t <sub>p</sub> = 8/20μS
Breakdown Voltage	V <sub>BR</sub>	3.8	—	6.5	V	I <sub>R</sub> = 1mA
Differential Resistance	R <sub>DIF</sub>	—	0.3	—	Ω	I <sub>R</sub> = 1A
Channel Input Capacitance	C <sub>T</sub>	—	10	13	pF	V <sub>R</sub> = 0V, 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.

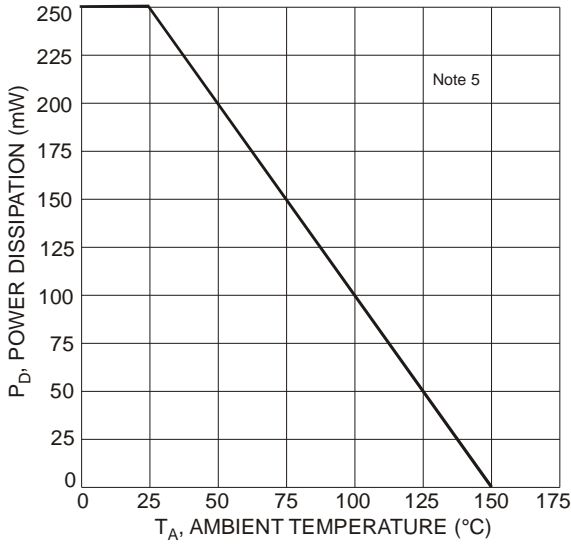


Figure 1 Power Derating Curve

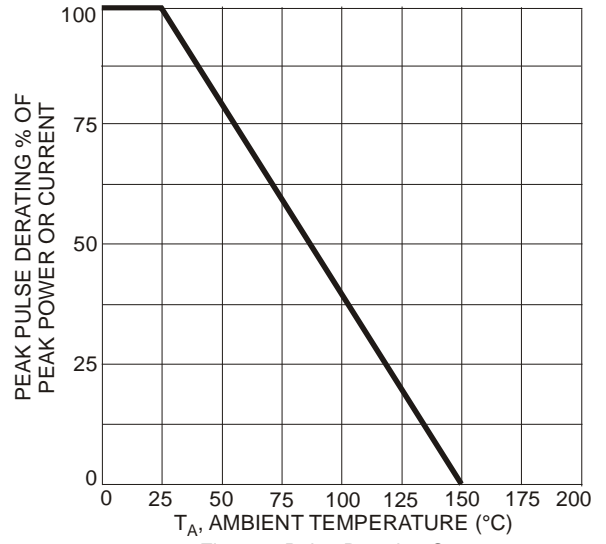


Figure 2 Pulse Derating Curve

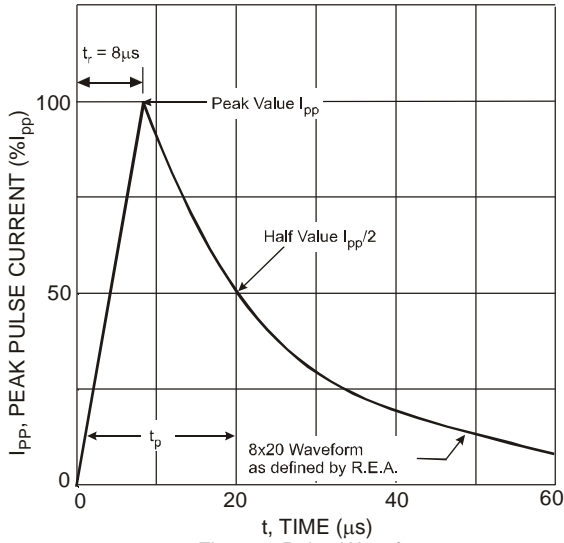


Figure 3 Pulse Waveform

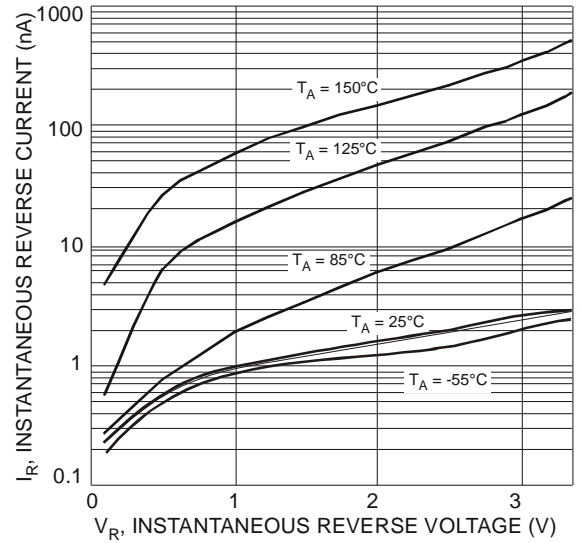


Figure 4 Typical Reverse Characteristics

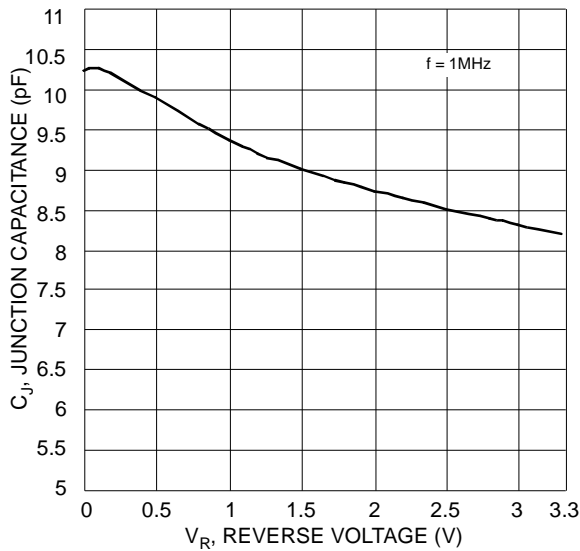
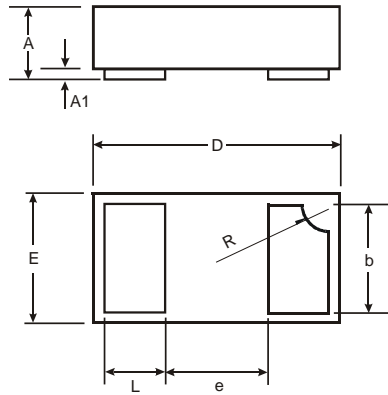


Figure 5 Typical Capacitance

**Package Outline Dimensions**

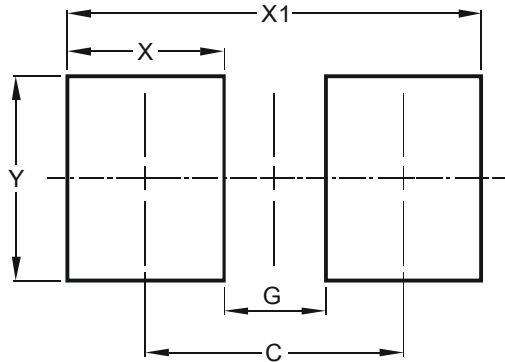
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



X1-DFN1006-2			
Dim	Min	Max	Typ
A	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
e	-	-	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)
C	0.70
G	0.30
X	0.40
X1	1.10
Y	0.70

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