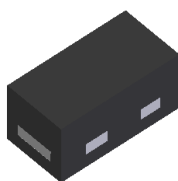


LOW CAPACITANCE BIDIRECTIONAL TVS DIODE
Features

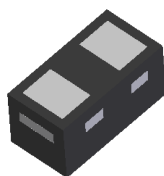
- Ultra-Small, Low Profile Leadless Surface Mount Package (0.6 * 0.3 * 0.3mm)
- Provides ESD Protection per IEC 61000-4-2 Standard: Air – ±30kV, Contact – ±30kV
- 1 Channel of ESD Protection
- Low Channel Input Capacitance
- Typically Used in Cellular Handsets, Portable Electronics, Communication Systems, Computers and Peripherals
- **Lead Free/RoHS Compliant (Note 1)**
- **Halogen and Antimony Free "Green" Device (Notes 2 & 3)**

Mechanical Data

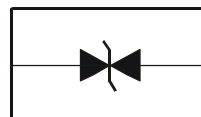
- Case: X3-DFN0603-2
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin over Copper leadframe, solderable per MIL-STD-202, Method 208
- Weight: 0.0002 grams (approximate)



Top View



Bottom View



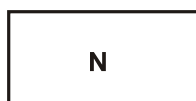
Device Schematic

Ordering Information (Note 4)
D 5V0 L X B X XXX- XX

Voltage	Capacitance	# of Channels	Polarity	# of Pins	Package	Packing
5V0: 5.0 Volts	X: Extremely Low (<0.5pF) F: Ultra Low (0.5 ~ 1.0pF) P: Very Low (1.1 ~ 10pF) L: Low (10.1 ~ 20pF) M: Medium (>20pF)	1: 1 Channel 2: 2 Channels 4: 4 Channels 6: 6 Channels	B: Bidirectional (Symmetrical) U: Unidirectional A: Bidirectional (Asymmetrical)	2: 2 Pins 3: 3 Pins 5: 5 Pins 6: 6 Pins 8: 8 Pins 10: 10 Pins	LP3: X3-DFN0603-2 LP: X1-DFN1006-2 LP4: X2-DFN1006-2 WS: SOD323 T: SOD523/SOT523 SO: SOT23/SOT25 W: SOD123/SOT323 TS: TSOT25/TSOT26 S: SOT353/SOT363 V: SOT553/SOT563	7: 7" reel 7B: 7" reel (DFN1006 Package Only) 13: 13" reel

Part Number	Case	Packaging
D5V0L1B2LP3-7	X3-DFN0603-2	10,000/Tape & Reel

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. No purposely added lead.
 2. Halogen and Antimony free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 3. Diodes Inc.'s "Green" policy can be found on our website at <http://www.diodes.com>.
 4. For packaging details, go to our website at <http://www.diodes.com>.

Marking Information


N = Product Type Marking Code

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit	Conditions
Peak Pulse Power Dissipation	P _{PP}	84	W	8/20μs, Per Fig. 1
Peak Pulse Current	I _{PP}	6	A	8/20μs, Per Fig. 1
ESD Protection – Contact Discharge	V _{ESD Contact}	±30	kV	Standard IEC 61000-4-2
ESD Protection – Air Discharge	V _{ESD Air}	±30	kV	Standard IEC 61000-4-2

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Package Power Dissipation (Note 5)	P _D	250	mW
Thermal Resistance, Junction to Ambient (Note 5)	R _{θJA}	500	°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	V	-
Channel Leakage Current (Note 6)	I _{RM}	-	10	100	nA	V _{RWM} = 5V
Clamping Voltage, Positive Transients	V _{CL}	-	7.0	9.0	V	I _{PP} = 1A, t _p = 8/20μs
		-	8.7	10.7		I _{PP} = 3A, t _p = 8/20μs
		-	10.5	12.0		I _{PP} = 5A, t _p = 8/20μs
		-	11.5	14.0		I _{PP} = 6A, t _p = 8/20μs
Breakdown Voltage	V _{BR}	6	7	8	V	I _R = 1mA
Differential Resistance	R _{DIF}	-	0.2	-	Ω	I _R = 1A, t _p = 8/20μs
Channel Input Capacitance	C _T	-	15	20	pF	V _R = 0V, f = 1MHz

- Notes:
- 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>.
 - Short duration pulse test used to minimize self-heating effect.

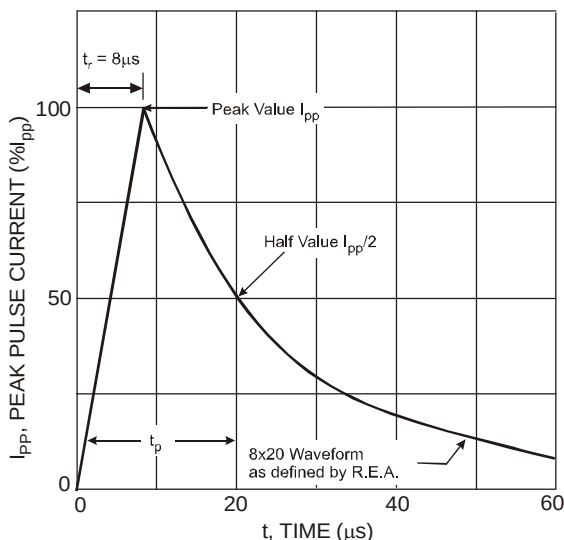


Fig. 1 Pulse Waveform

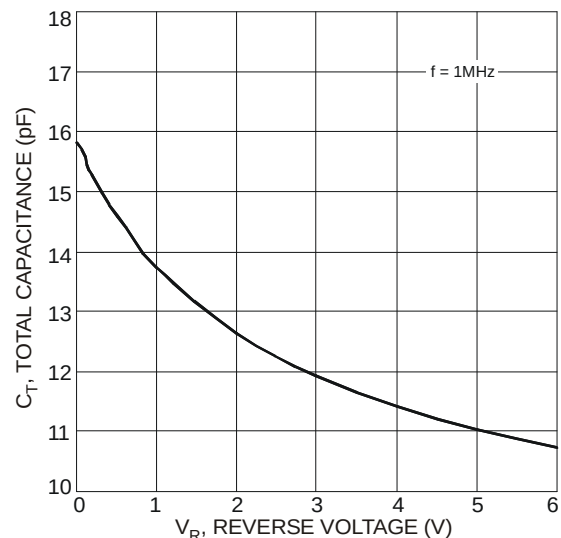


Fig. 2 Typical Total Capacitance vs. Reverse Voltage

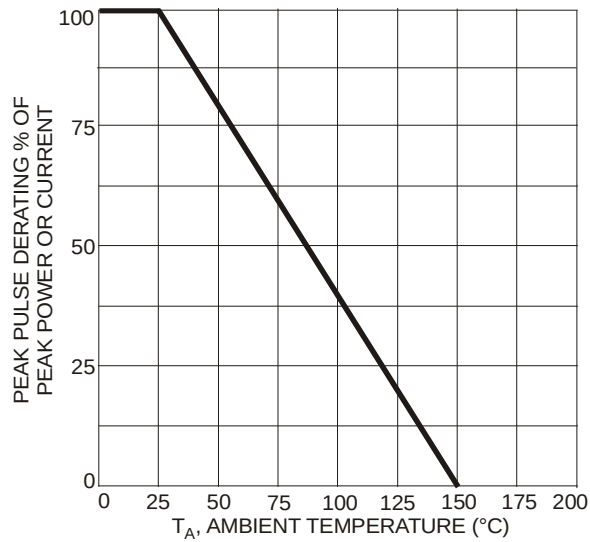


Fig. 3 Pulse Derating Curve

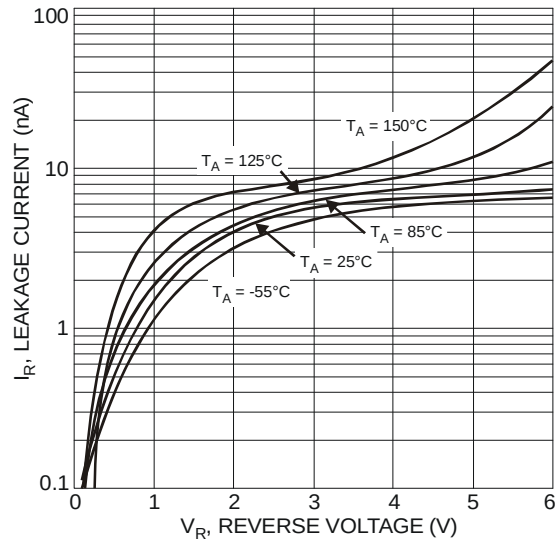
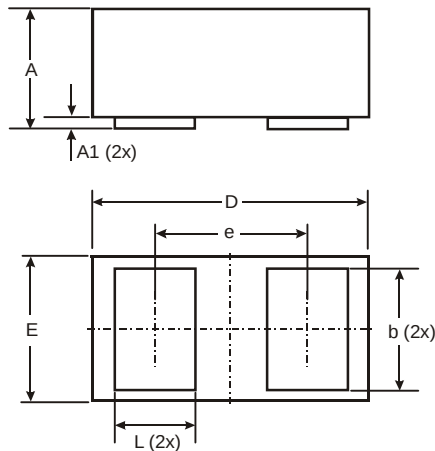


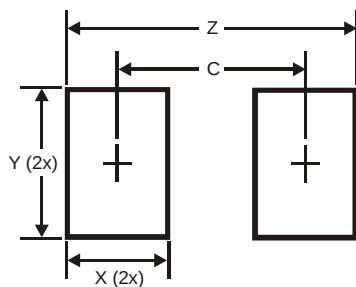
Fig. 4 Typical Reverse Characteristics

Package Outline Dimensions



X3-DFN0603-2			
Dim	Min	Max	Typ
A	0.27	0.35	0.30
A1	0.00	0.03	0.02
b	0.19	0.29	0.24
D	0.595	0.645	0.62
E	0.295	0.345	0.32
e	-	-	0.355
L	0.14	0.24	0.19
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
C	0.355
X	0.230
Y	0.300
Z	0.610

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- Техническая поддержка проекта;
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