

**2 CHANNEL LOW CAPACITANCE BI-DIRECTIONAL TVS ARRAY**
**Features**

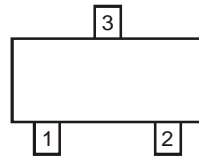
- Provides ESD Protection per IEC 61000-4-2 Standard:  
Air – ±30kV, Contact – ±30kV
- 2 Channels of Bi-Directional ESD Protection
- Low Channel Input Capacitance
- Typically Used at Portable Electronics, Cellular Handsets and Communication Systems
- **Lead Free/RoHS Compliant (Note 1)**
- **“Green” Device (Note 2)**

**Mechanical Data**

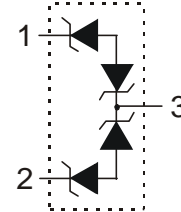
- Case: SOT323
- Case Material: Molded Plastic, “Green” Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Weight: 0.006 grams (approximate)



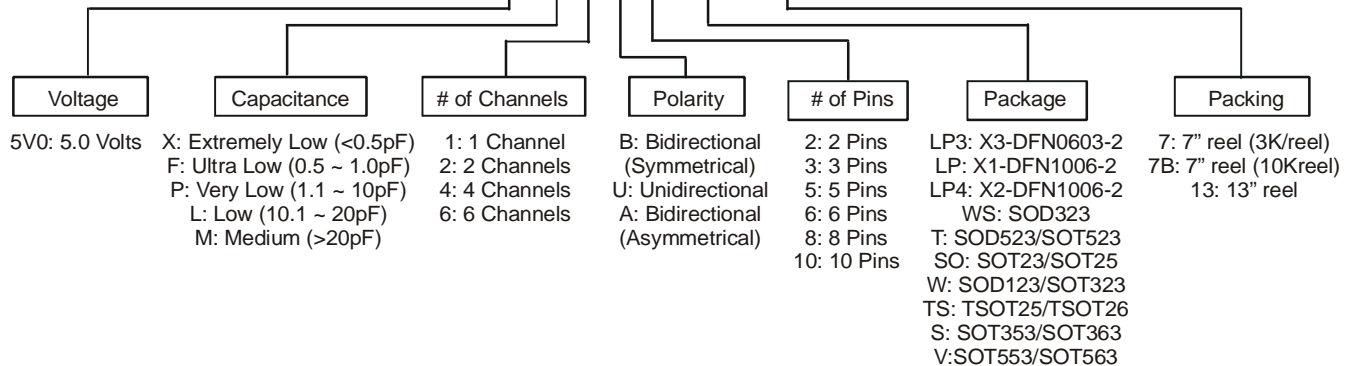
Top View



Pin Configuration

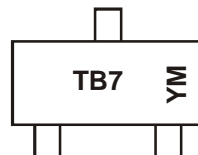


Device Schematic

**Ordering Information (Note 3)**
**D 5V0 L X B X XXX- XX**


Part Number	Case	Packaging
D5V0L2B3W-7	SOT323	3000/Tape & Reel

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. No purposely added lead. Halogen and Antimony free.
  2. Diodes Inc.'s "Green" policy can be found on our website at <http://www.diodes.com>.
  3. For packaging details, go to our website at <http://www.diodes.com>.

**Marking Information**


TB7 = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: Z = 2012)  
 M = Month (ex: 9 = September)

## Date Code Key

Year	2011	2012	2013	2014	2015	2016	2017
Code	Y	Z	A	B	C	D	E

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

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

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

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Package Power Dissipation (Note 5)	P <sub>D</sub>	200	mW
Thermal Resistance, Junction to Ambient (Note 5)	R <sub>θJA</sub>	625	°C/W
Operating Junction Temperature Range	T <sub>J</sub>	-65 to +150	°C
Storage Temperature Range	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 Working Voltage	V <sub>RWM</sub>	-	-	5.0	V	-
Breakdown Voltage	V <sub>BR</sub>	6	7	8	V	I <sub>R</sub> = 1.0mA
Reverse Leakage Current (Note 6)	I <sub>R</sub>	-	10	100	nA	V <sub>RWM</sub> = 5V
Clamping Voltage (Note 4)	V <sub>CL</sub>	-	7.0	9.0	V	I <sub>PP</sub> = 1A, t <sub>p</sub> = 8/20μs
		-	8.7	10.7	V	I <sub>PP</sub> = 3A, t <sub>p</sub> = 8/20μs
		-	10.5	12.0	V	I <sub>PP</sub> = 5A, t <sub>p</sub> = 8/20μs
		-	11.5	14.0	V	I <sub>PP</sub> = 6A, t <sub>p</sub> = 8/20μs
Differential Resistance	R <sub>DIF</sub>	-	0.2	-	Ω	I <sub>R</sub> = 1.0A, t <sub>p</sub> = 8/20μs
Channel Input Capacitance	C <sub>T</sub>	-	15	20	pF	V <sub>IN</sub> = 0 V, f = 1MHz (Channel to Pin 3)

- Notes:
4. Measured from pin 1 to 3 or pin 2 to 3; Non-repetitive current pulse per Fig. 1.
  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.

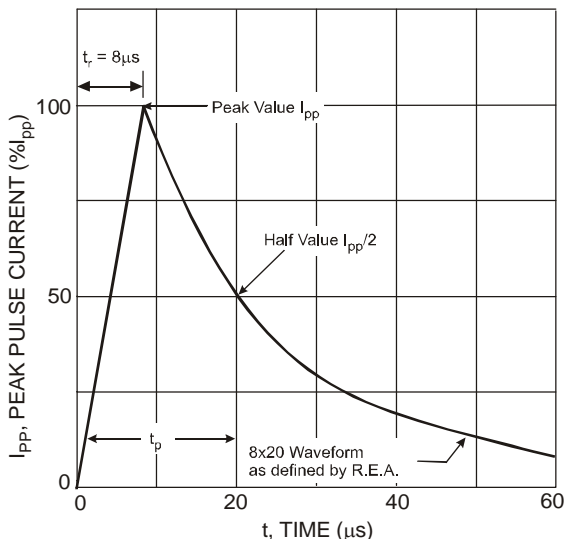


Fig. 1 Typical 8 x 20μs Pulse Waveform

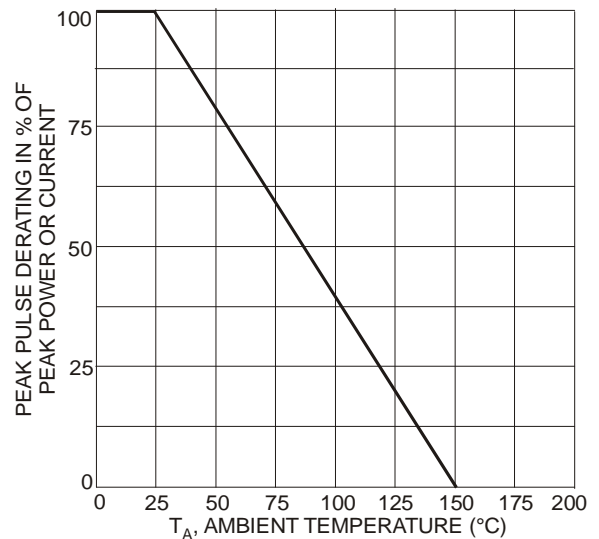


Fig. 2 Pulse Derating Curve

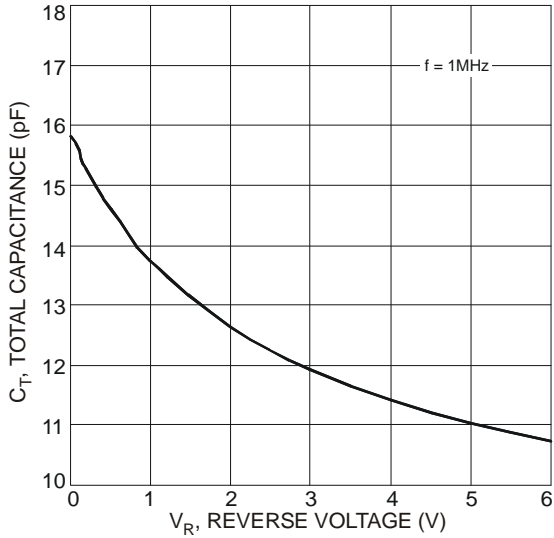


Fig. 3 Typical Total Capacitance vs. Reverse Voltage

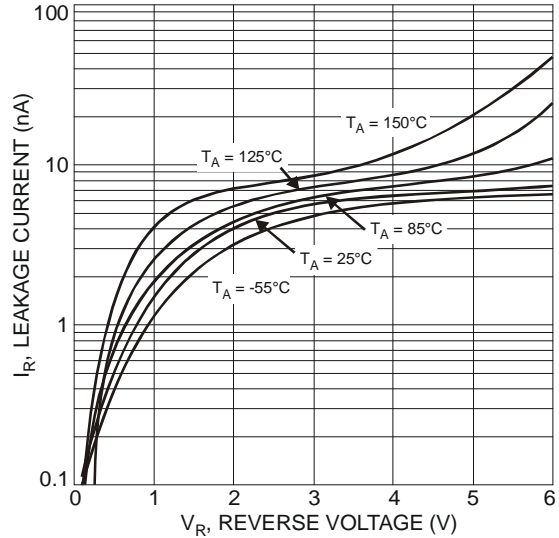
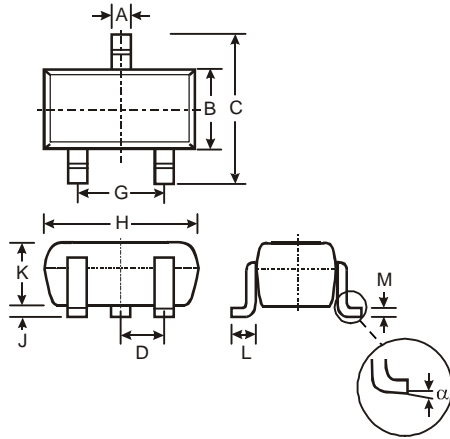


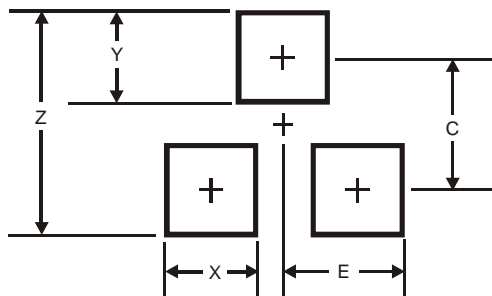
Fig. 4 Typical Reverse Characteristics

**Package Outline Dimensions**



SOT323			
Dim	Min	Max	Typ
A	0.25	0.40	0.30
B	1.15	1.35	1.30
C	2.00	2.20	2.10
D	-	-	0.65
G	1.20	1.40	1.30
H	1.80	2.20	2.15
J	0.0	0.10	0.05
K	0.90	1.00	1.00
L	0.25	0.40	0.30
M	0.10	0.18	0.11
α	0°	8°	-
All Dimensions in mm			

**Suggested Pad Layout**



Dimensions	Value (in mm)
Z	2.8
X	0.7
Y	0.9
C	1.9
E	1.0

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