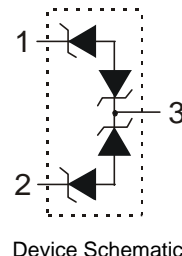
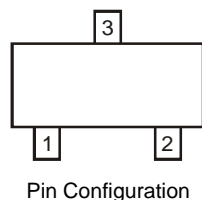
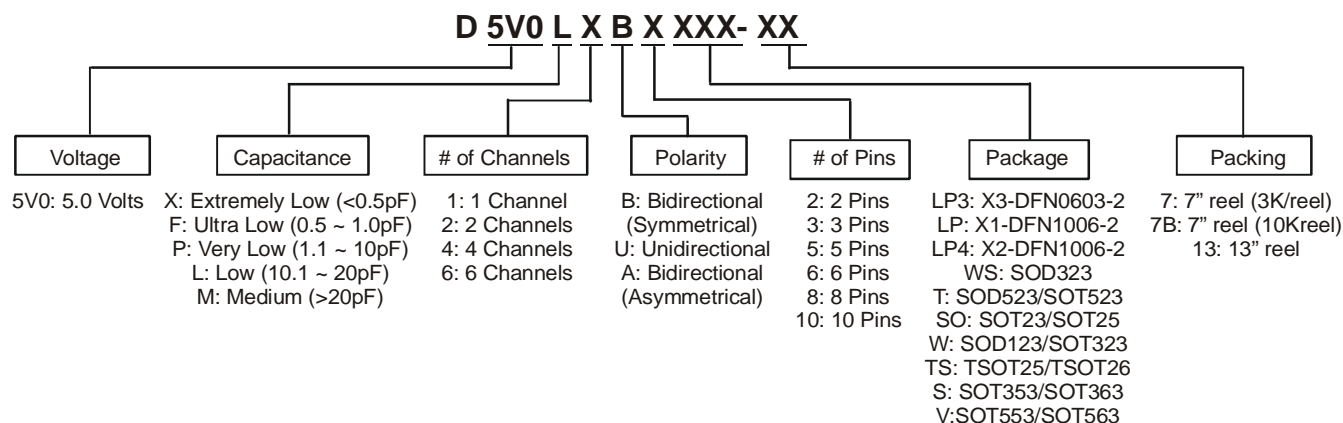


**2 CHANNEL LOW CAPACITANCE BI-DIRECTIONAL TVS ARRAY**
**Features**

- 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)**

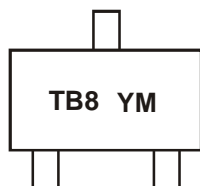
**Mechanical Data**

- Case: SOT523
- 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: 0.002 grams (approximate)


**Ordering Information (Note 3)**


| Part Number | Case   | Packaging        |
|-------------|--------|------------------|
| D5V0L2B3T-7 | SOT523 | 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**


TB8 = 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** @ $T_A = 25^\circ\text{C}$  unless otherwise specified

| Characteristic                     | Symbol             | Value    | Unit | Conditions                      |
|------------------------------------|--------------------|----------|------|---------------------------------|
| Peak Pulse Power Dissipation       | $P_{PP}$           | 84       | W    | 8/20 $\mu\text{s}$ , Per Fig. 1 |
| Peak Pulse Current                 | $I_{PP}$           | 6        | A    | 8/20 $\mu\text{s}$ , Per Fig. 1 |
| ESD Protection – Contact Discharge | $V_{ESD\_Contact}$ | $\pm 30$ | kV   | Standard IEC 61000-4-2          |
| ESD Protection – Air Discharge     | $V_{ESD\_Air}$     | $\pm 30$ | kV   | Standard IEC 61000-4-2          |

**Thermal Characteristics**

| Characteristic                                   | Symbol          | Value       | Unit               |
|--------------------------------------------------|-----------------|-------------|--------------------|
| Package Power Dissipation (Note 5)               | $P_D$           | 200         | mW                 |
| Thermal Resistance, Junction to Ambient (Note 5) | $R_{\theta JA}$ | 625         | $^\circ\text{C/W}$ |
| Operating Junction Temperature Range             | $T_J$           | -65 to +150 | $^\circ\text{C}$   |
| Storage Temperature Range                        | $T_{STG}$       | -65 to +150 | $^\circ\text{C}$   |

**Electrical Characteristics** @ $T_A = 25^\circ\text{C}$  unless otherwise specified

| Characteristic                   | Symbol    | Min | Typ  | Max  | Unit     | Test Conditions                                             |
|----------------------------------|-----------|-----|------|------|----------|-------------------------------------------------------------|
| Reverse Working Voltage          | $V_{RWM}$ | -   | -    | 5.0  | V        | -                                                           |
| Breakdown Voltage                | $V_{BR}$  | 6   | 7    | 8    | V        | $I_R = 1.0\text{mA}$                                        |
| Reverse Leakage Current (Note 6) | $I_R$     | -   | 10   | 100  | nA       | $V_{RWM} = 5\text{V}$                                       |
| Clamping Voltage (Note 4)        | $V_{CL}$  | -   | 7.0  | 9.0  | V        | $I_{pp} = 1\text{A}, t_p = 8/20\mu\text{s}$                 |
|                                  |           | -   | 8.7  | 10.7 | V        | $I_{pp} = 3\text{A}, t_p = 8/20\mu\text{s}$                 |
|                                  |           | -   | 10.5 | 12.0 | V        | $I_{pp} = 5\text{A}, t_p = 8/20\mu\text{s}$                 |
|                                  |           | -   | 11.5 | 14.0 | V        | $I_{pp} = 6\text{A}, t_p = 8/20\mu\text{s}$                 |
| Differential Resistance          | $R_{DIF}$ | -   | 0.2  | -    | $\Omega$ | $I_R = 1\text{A}, t_p = 8/20\mu\text{s}$                    |
| Channel Input Capacitance        | $C_T$     | -   | 15   | 20   | pF       | $V_{IN} = 0\text{V}, f = 1\text{MHz}$<br>(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.

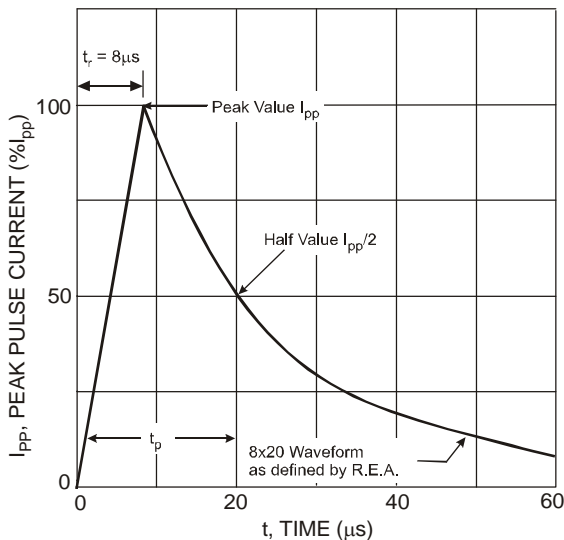


Fig. 1 Typical 8 x 20 $\mu\text{s}$  Pulse Waveform

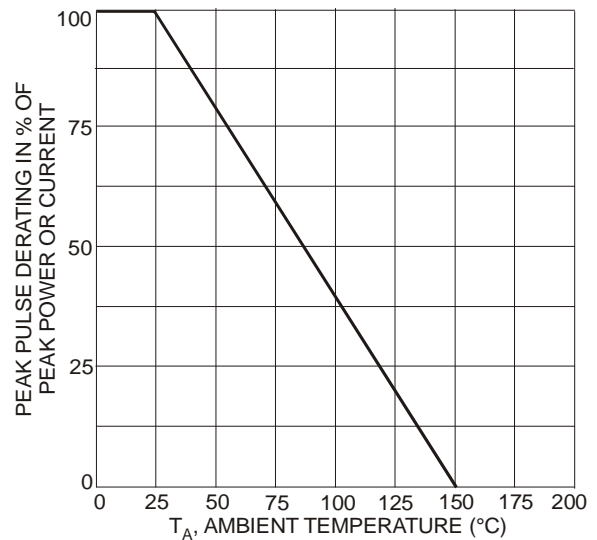


Fig. 2 Pulse Derating Curve

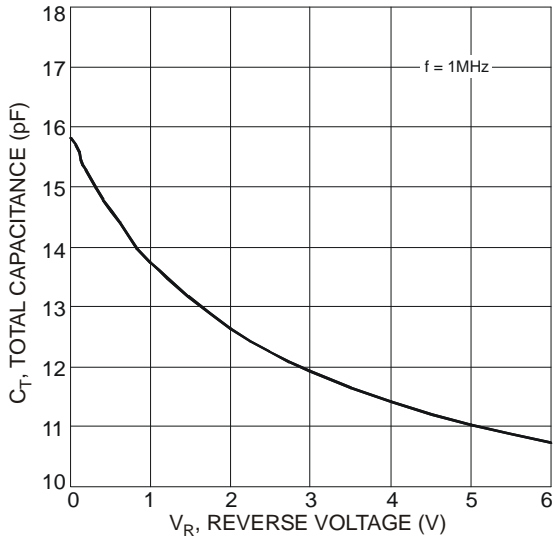


Fig. 3 Typical Total Capacitance vs. Reverse Voltage

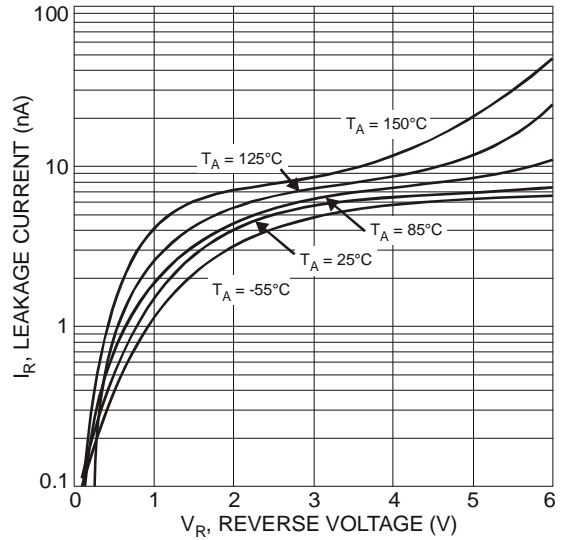
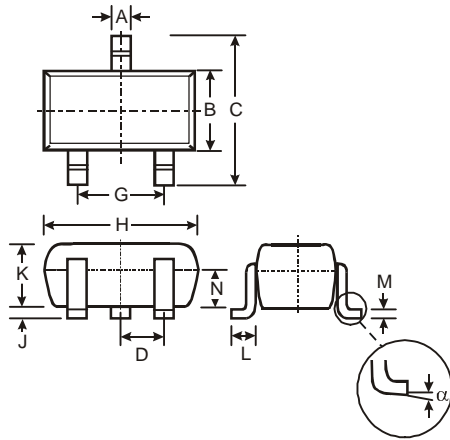


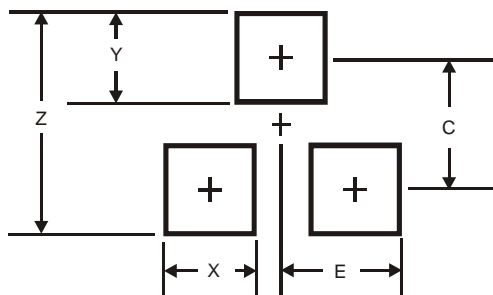
Fig. 4 Typical Reverse Characteristics

**Package Outline Dimensions**



| SOT523               |      |      |      |
|----------------------|------|------|------|
| Dim                  | Min  | Max  | Typ  |
| A                    | 0.15 | 0.30 | 0.22 |
| B                    | 0.75 | 0.85 | 0.80 |
| C                    | 1.45 | 1.75 | 1.60 |
| D                    | —    | —    | 0.50 |
| G                    | 0.90 | 1.10 | 1.00 |
| H                    | 1.50 | 1.70 | 1.60 |
| J                    | 0.00 | 0.10 | 0.05 |
| K                    | 0.60 | 0.80 | 0.75 |
| L                    | 0.10 | 0.30 | 0.22 |
| M                    | 0.10 | 0.20 | 0.12 |
| N                    | 0.45 | 0.65 | 0.50 |
| α                    | 0°   | 8°   | —    |
| All Dimensions in mm |      |      |      |

**Suggested Pad Layout**



| Dimensions | Value (in mm) |
|------------|---------------|
| Z          | 1.8           |
| X          | 0.4           |
| Y          | 0.51          |
| C          | 1.3           |
| E          | 0.7           |

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