

## Features

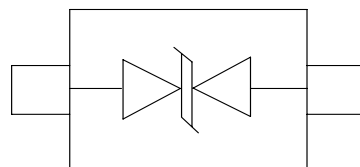
- Protects one data or power line
- Ultra low leakage: nA level
- Operating voltage: 7V
- Low clamping voltage
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 30\text{kV}$
    - Contact discharge:  $\pm 30\text{kV}$
  - IEC61000-4-5 (Lightning) 6A (8/20 $\mu\text{s}$ )
- RoHS Compliant



## Mechanical Characteristics

- Package: SOD-323
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound.
- Terminal Connections: See Diagram Below
- Marking Information: See Below

**SOD-323**



**Circuit diagram**

## Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players
- Keypads, Side Keys, LCD Displays



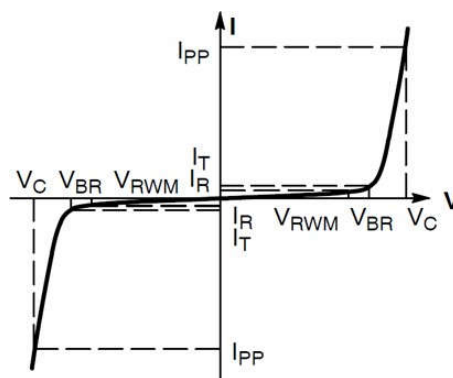
7M= Device code  
**Marking (Top View)**

## Ordering Information

| Part Number | Packaging        | Reel Size |
|-------------|------------------|-----------|
| ESDBL7V0D3  | 3000/Tape & Reel | 7 inch    |

## Portion Electronics Parameter

| Symbol    | Parameter                           |
|-----------|-------------------------------------|
| $V_{RWM}$ | Peak Reverse Working Voltage        |
| $I_R$     | Reverse Leakage Current @ $V_{RWM}$ |
| $V_{BR}$  | Breakdown Voltage @ $I_T$           |
| $I_T$     | Test Current                        |
| $I_{PP}$  | Maximum Reverse Peak Pulse Current  |
| $V_C$     | Clamping Voltage @ $I_{PP}$         |



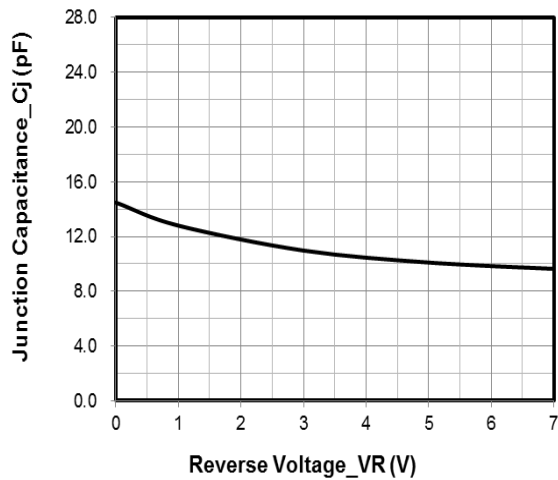
**Absolute Maximum Ratings ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)**

| Parameter                                                      | Symbol           | Value                | Unit               |
|----------------------------------------------------------------|------------------|----------------------|--------------------|
| Peak Pulse Power (8/20 $\mu\text{s}$ )                         | Ppk              | 80                   | W                  |
| Peak Pulse Current (8/20 $\mu\text{s}$ )                       | I <sub>PP</sub>  | 6                    | A                  |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | V <sub>ESD</sub> | $\pm 30$<br>$\pm 30$ | kV                 |
| Operating Temperature Range                                    | T <sub>J</sub>   | -55 to +125          | $^{\circ}\text{C}$ |
| Storage Temperature Range                                      | T <sub>stg</sub> | -55 to +150          | $^{\circ}\text{C}$ |

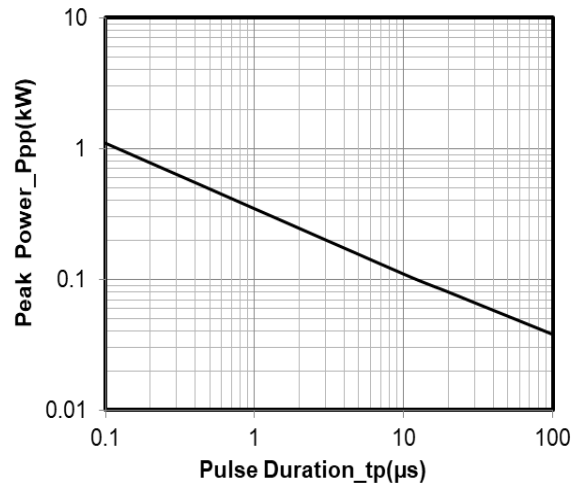
**Electrical Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)**

| Parameter               | Symbol           | Min | Typ | Max | Unit          | Test Condition                |
|-------------------------|------------------|-----|-----|-----|---------------|-------------------------------|
| Reverse Working Voltage | V <sub>RWM</sub> |     |     | 7   | V             |                               |
| Breakdown Voltage       | V <sub>BR</sub>  | 7.5 |     |     | V             | I <sub>T</sub> = 1mA          |
| Reverse Leakage Current | I <sub>R</sub>   |     |     | 0.2 | $\mu\text{A}$ | V <sub>RWM</sub> = 7V         |
| Clamping Voltage        | V <sub>C</sub>   |     |     | 9   | V             | I <sub>PP</sub> = 1A          |
| Clamping Voltage        | V <sub>C</sub>   |     |     | 14  | V             | I <sub>PP</sub> = 6A          |
| Junction Capacitance    | C <sub>J</sub>   |     | 15  |     | pF            | V <sub>R</sub> = 0V, f = 1MHz |

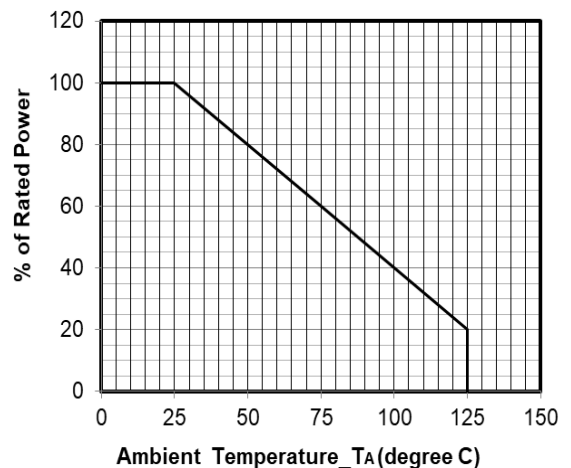
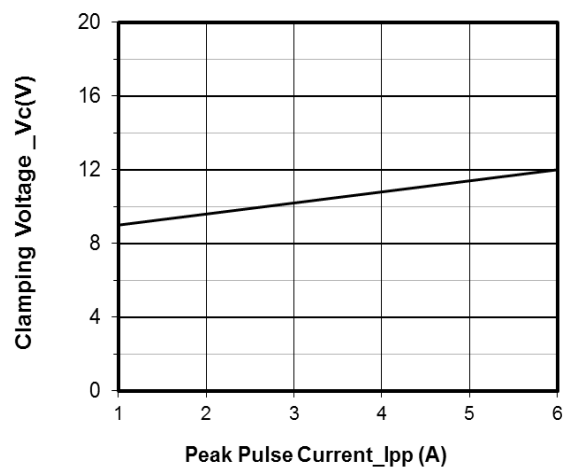
**Typical Performance Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise Specified)**



**Junction Capacitance vs. Reverse Voltage**

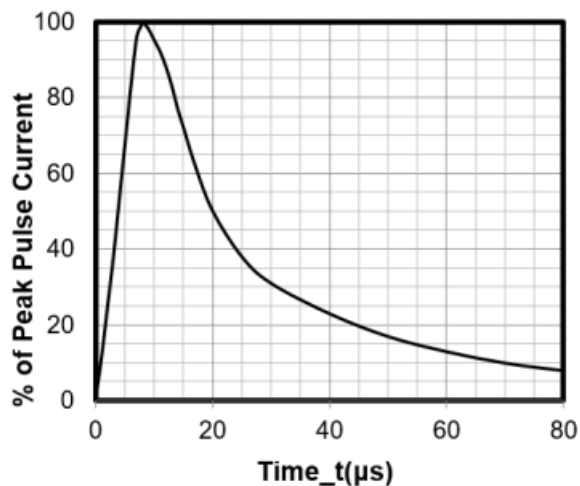


**Peak Pulse Power vs. Pulse Time**

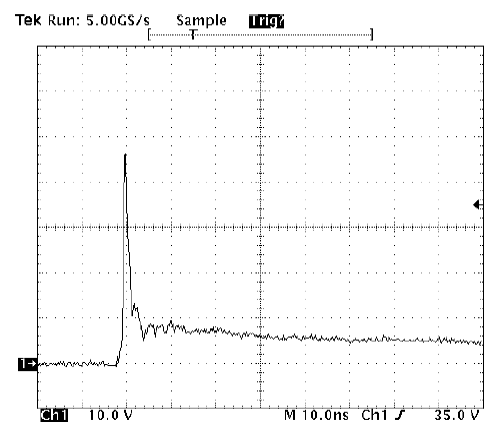


**Clamping Voltage vs. Peak Pulse Current ( $t_p = 8/20\mu\text{s}$ )**

**Power Derating Curve**



**8 X 20μs Pulse Waveform**

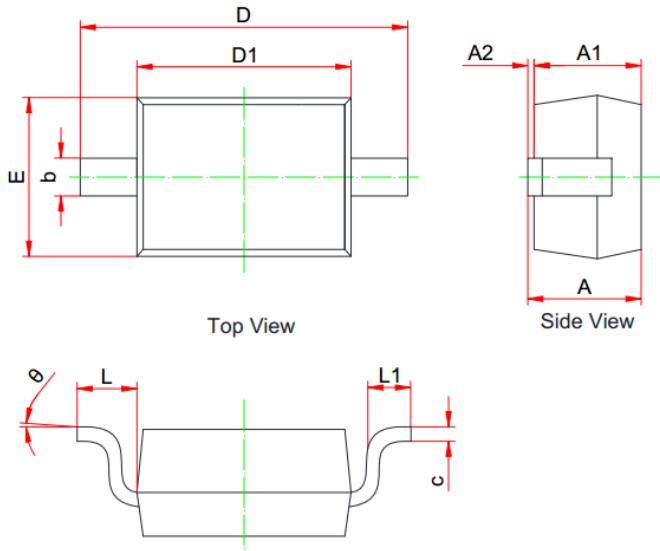


**Note: Data is taken with a 10x attenuator**

**ESD Clamping Voltage**

**8 kV Contact per IEC61000-4-2**

**SOD-323 Package Outline Drawing**



|    | MILLIMETERS |       |       |
|----|-------------|-------|-------|
|    | MIN         | NOM   | MAX   |
| A  | 0.800       | --    | 1.100 |
| A1 | 0.800       | --    | 0.900 |
| A2 | 0.000       | --    | 0.100 |
| b  | 0.250       | --    | 0.400 |
| c  | 0.080       | --    | 0.177 |
| D1 | 1.600       | 1.700 | 1.800 |
| D  | 2.300       | --    | 2.800 |
| E  | 1.150       | --    | 1.400 |
| L  | 0.475REF    |       |       |
| L1 | 0.100       | --    | 0.500 |
| Θ  | 0°          | --    | 8°    |

**Suggested Land Pattern**



**Unit: mm**