

### »Features

- 240Watts peak pulse power ( $t_p = 8/20\mu s$ )
- Unidirectional configurations
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- IEC 61000-4-2  $\pm 30kV$  contact  $\pm 30kV$  air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 5A (8/20 $\mu s$ )



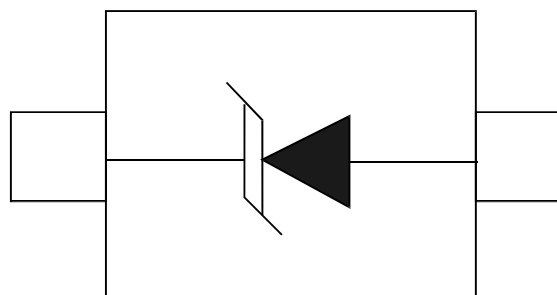
### »Applications

- USB Vbus,
- Power Line
- Power management

### »Mechanical Data

- SOD323 package
- Molding compound flammability rating: UL94V-0
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

### »Schematic & PIN Configuration



SOD-323

»Absolute Maximum Rating

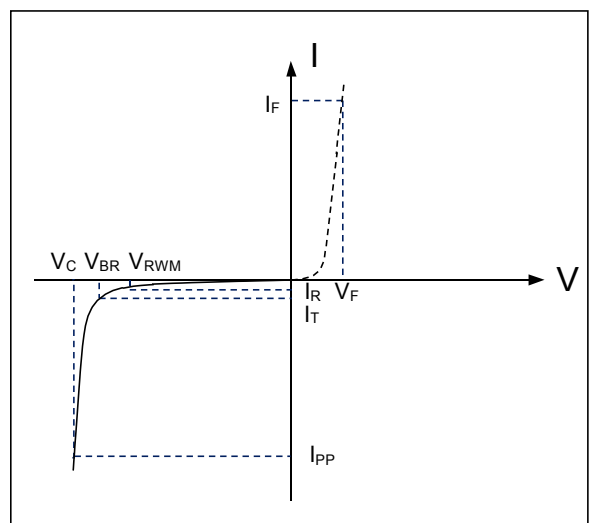
| Rating   | Symbol    | Value          | Units |
|--|-----------|----------------|-------|
| Peak Pulse Power ( $t_p = 8/20\mu s$ )                         | $P_{PP}$  | 240            | Watts |
| Peak Pulse Current ( $t_p = 8/20\mu s$ ) (note1)               | $I_{pp}$  | 5              | A     |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | $V_{ESD}$ | 30<br>30       | kV    |
| Lead Soldering Temperature                                     | $T_L$     | 260(10seconds) | °C    |
| Junction Temperature   | $T_J$     | -55 to + 150   | °C    |
| Storage Temperature  | $T_{stg}$ | -55 to + 150   | °C    |

»Electrical Characteristics

| Parameter                 | Symbol    | Conditions                      | Min  | Typical | Max  | Units   |
|---------------------------|-----------|---------------------------------|------|---------|------|---------|
| Reverse Stand-Off Voltage | $V_{RWM}$ |                                 |      |         | 24.0 | V       |
| Reverse Breakdown Voltage | $V_{BR}$  | $I_T = 1mA$                     | 26.7 |         |      | V       |
| Reverse Leakage Current   | $I_R$     | $V_{RWM} = 24V, T = 25^\circ C$ |      |         | 1    | $\mu A$ |
| Clamping Voltage          | $V_C$     | $I_{PP} = 5A, t_p = 8/20\mu s$  |      |         | 44   | V       |
| Junction Capacitance      | $C_j$     | $V_R = 0V, f = 1MHz$            |      | 30      |      | pF      |

»Electrical Parameters (TA = 25°C unless otherwise noted)

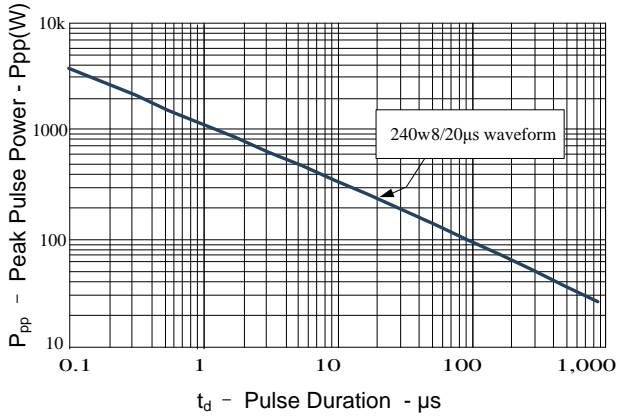
| Symbol    | Parameter                                   |
|-----------|---|
| $I_{PP}$  | Maximum Reverse Peak Pulse Current          |
| $V_C$     | Clamping Voltage @ $I_{PP}$                 |
| $V_{RWM}$ | Working Peak Reverse Voltage                |
| $I_R$     | Maximum Reverse Leakage Current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



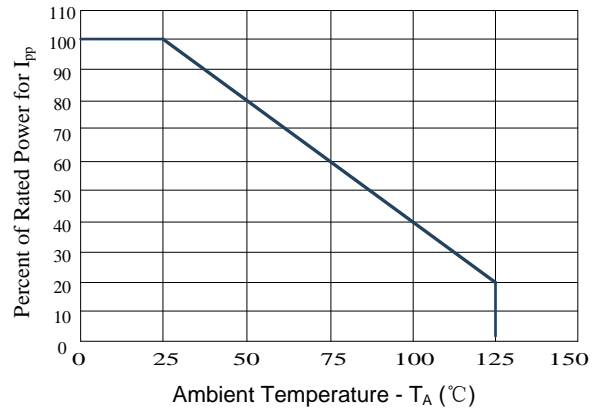
Note: 8/20 $\mu s$  pulse waveform.

»Typical Characteristics

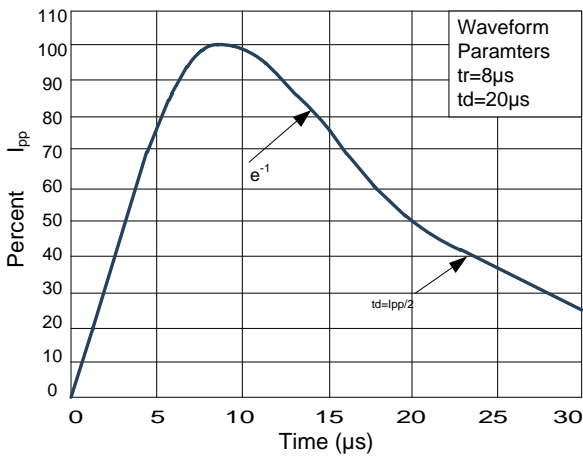
**Figure 1: Peak Pulse Power vs. Pulse Time**



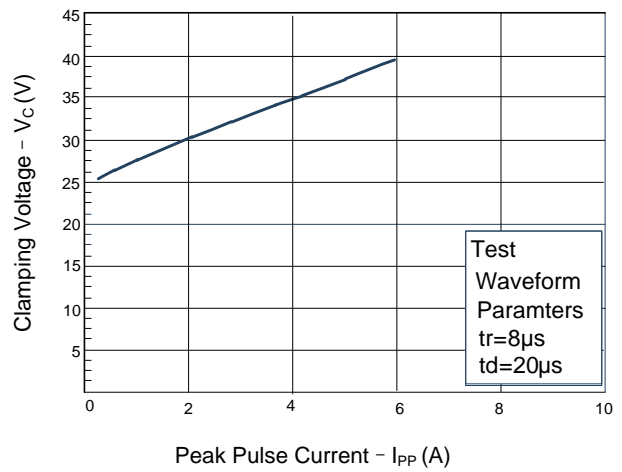
**Figure 2: Power Derating Curve**



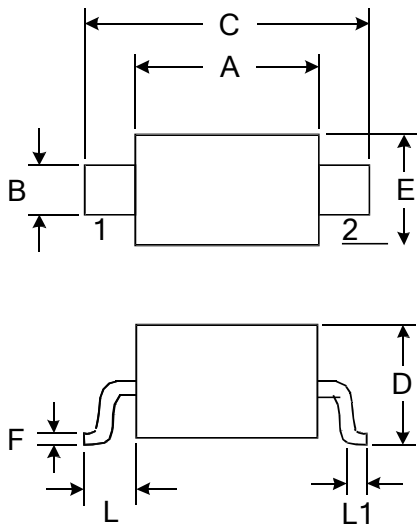
**Figure3: Pulse Waveform**



**Figure 4: Clamping Voltage vs.Ipp**

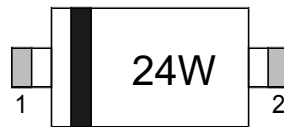


»Outline Drawing – SOD323



| DIMENSIONS |            |       |          |       |
|------------|------------|-------|----------|-------|
| SYMBOL     | MILLIMETER |       | INCHES   |       |
|            | MIN        | MAX   | MIN      | MAX   |
| A          | 1.600      | 1.800 | 0.063    | 0.071 |
| B          | 0.250      | 0.350 | 0.010    | 0.014 |
| C          | 2.500      | 2.700 | 0.098    | 0.106 |
| D          |            | 1.000 |          | 0.039 |
| E          | 1.200      | 1.400 | 0.047    | 0.055 |
| F          | 0.080      | 0.150 | 0.003    | 0.006 |
| L          | 0.475 REF  |       | 0.019REF |       |
| L1         | 0.250      | 0.400 | 0.010    | 0.016 |
| H          | 0.000      | 0.100 | 0.000    | 0.004 |

»Marking



Pin Style: 1. Cathode 2. Anode

»Ordering information

| Order code | Package | Base qty | Delivery mode |
|------------|---------|----------|---------------|
| BSD3A241V  | SOD323  | 3000     | Tape and reel |

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