

## Features

- 360Watts peak pulse power ( $t_p = 8/20\mu s$ )
- Unidirectional configurations
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current

## IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2  $\pm 30kV$  contact  $\pm 30kV$  air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 20A (8/20 $\mu s$ )



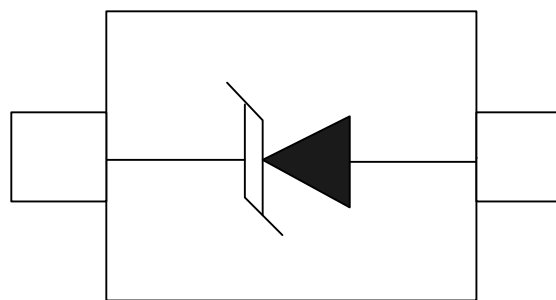
## Applications

- USB Vbus,
- Power Line
- Power management

## Mechanical Characteristics

- SOD323 package
- Molding compound flammability rating: UL 94V-0
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

## Schematic & PIN Configuration



SOD-323

### Absolute Maximum Rating

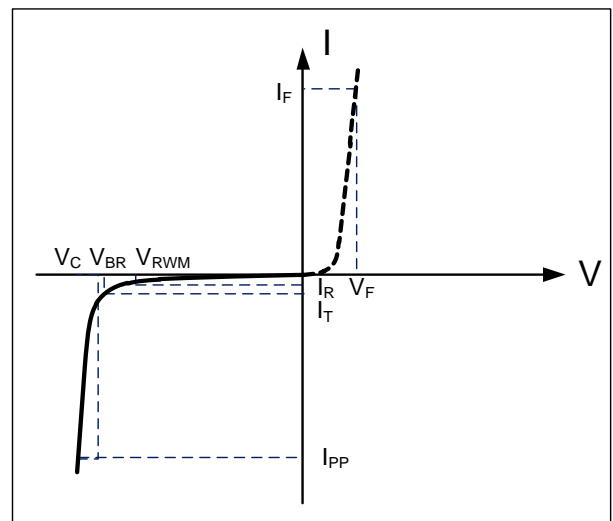
| Rating   | Symbol    | Value          | Units       |
|--|-----------|----------------|-------------|
| Peak Pulse Power ( $t_p = 8/20\mu s$ )                         | $P_{PP}$  | 360            | Watts       |
| Peak Pulse Current ( $t_p = 8/20\mu s$ ) (note1)               | $I_{pp}$  | 20             | 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) | $^{\circ}C$ |
| Junction Temperature   | $T_J$     | -55 to + 150   | $^{\circ}C$ |
| Storage Temperature  | $T_{stg}$ | -55 to + 150   | $^{\circ}C$ |

### Electrical Characteristics

| Parameter                 | Symbol    | Conditions                  | Min | Typical | Max | Units   |
|---------------------------|-----------|-----------------------------|-----|---------|-----|---------|
| Reverse Stand-Off Voltage | $V_{RWM}$ |                             |     |         | 5.0 | V       |
| Reverse Breakdown Voltage | $V_{BR}$  | $I_T=1mA$                   | 6.0 |         |     | V       |
| Reverse Leakage Current   | $I_R$     | $V_{RWM}=5V, T=25^{\circ}C$ |     |         | 1   | $\mu A$ |
| Clamping Voltage          | $V_C$     | $I_{PP}=20A, t_p=8/20\mu s$ |     | 17      | 19  | V       |
| Junction Capacitance      | $C_j$     | $V_R = 0V, f = 1MHz$        |     | 120     | 135 | pF      |

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

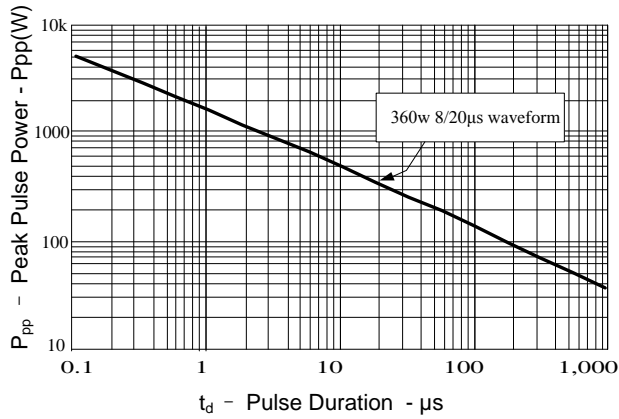
| Symbol    | Parameter                                   |
|-----------|---|
| $I_{PP}$  | Maximum Reverse Peak Pulse Current          |
| $V_C$     | Clamping Voltage @ $I_{PP}$                 |
| $V_{RWM}$ | Working Peak Reverse Voltage                |
| $I_R$     | Maximum Reverse Leakage Current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



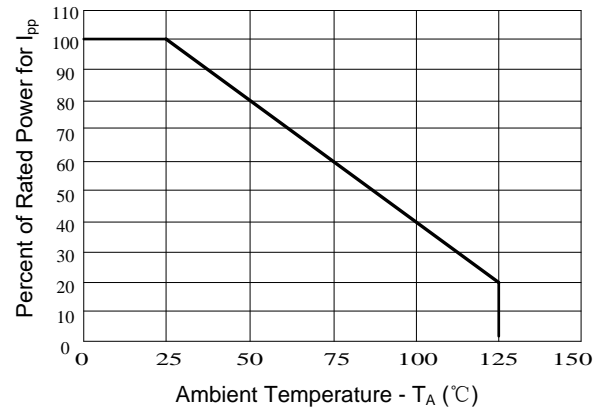
Note: 8/20 $\mu s$  pulse waveform.

## Typical Characteristics

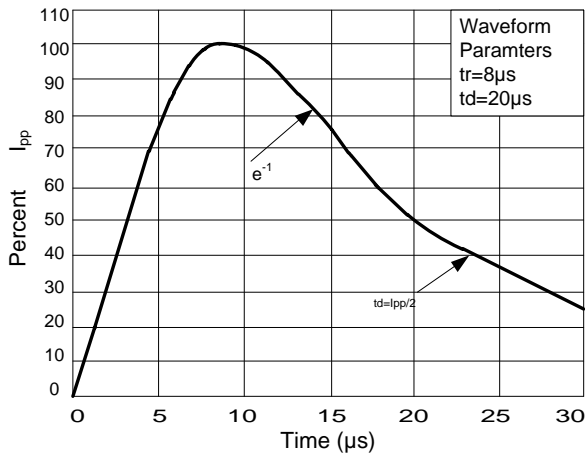
**Figure 1: Peak Pulse Power vs. Pulse Time**



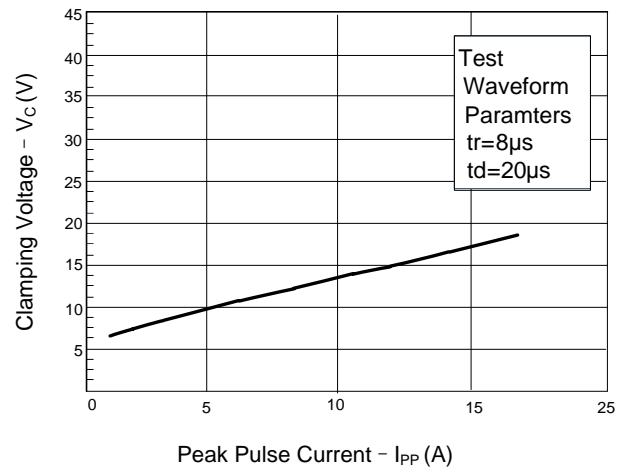
**Figure 2: Power Derating Curve**



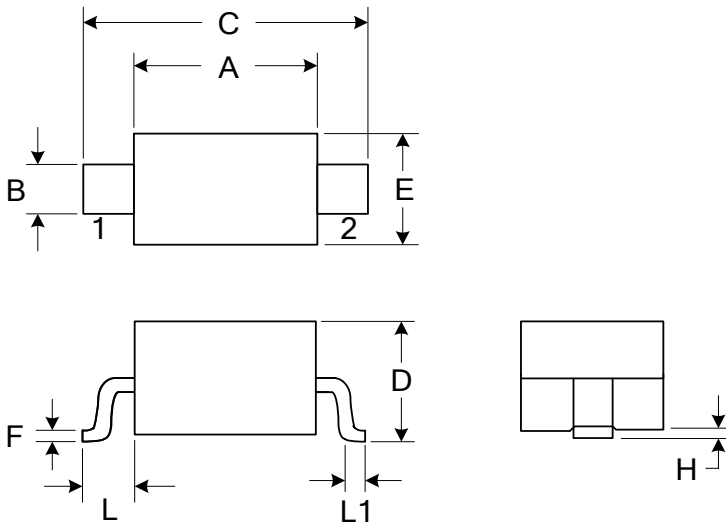
**Figure 3: Pulse Waveform**



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

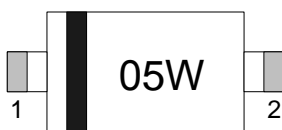


## Outline Drawing



| 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 |
|-----------------|---------|----------|---------------|
| PTD322H120M5C36 | SOD323  | 3K       | Tape and reel |