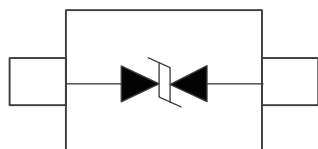


## Surface Mount Transient Voltage Suppressor Diode

### Features

- ✧ Bi-directional ESD protection of one line
- ✧ Solid-state silicon-avalanche technology
- ✧ Working Voltage: 36.0V
- ✧ Peak Power up to 440 Watts @ 8 x 20 $\mu$ s Pulse
- ✧ Low Leakage current
- ✧ IEC 61000-4-2 (ESD)  $\pm$ 25kV (air),  $\pm$ 25kV (contact)
- ✧ IEC 61000-4-4 (EFT) 40A (5/50ns)



Circuit Diagram

### Applications

- ✧ Control & Monitoring Systems
- ✧ Portable Electronics
- ✧ Digital Sensor I/O Ports
- ✧ 36 Volt DC Protection

### Mechanical Data

- ✧ UL Flame Rating : UL94V-0
- ✧ Reel Size : 7 inch
- ✧ RoHS/WEEE Compliant



SOD323

### Absolute Maximum Rating at $T_A = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

| Rating                                                         | Symbol    | Value                | Units              |
|----------------------------------------------------------------|-----------|----------------------|--------------------|
| Peak Pulse Power ( $t_p = 8/20\mu\text{s}$ )                   | $P_{PP}$  | 440                  | Watts              |
| Peak Pulse Current ( $t_p = 8/20\mu\text{s}$ ) (note1)         | $I_{pp}$  | 8                    | A                  |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | $V_{ESD}$ | $\pm 25$<br>$\pm 25$ | kV                 |
| Lead Soldering Temperature                                     | $T_L$     | 260(10seconds)       | $^{\circ}\text{C}$ |
| Junction Temperature                                           | $T_J$     | -55 to + 125         | $^{\circ}\text{C}$ |
| Storage Temperature                                            | $T_{stg}$ | -55 to + 150         | $^{\circ}\text{C}$ |

## Electrical Characteristics at $T_A = 25^\circ\text{C}$ , unless otherwise specified

| Parameter                 | Symbol    | Conditions                                    | Min. | Typical | Max. | Units         |
|---------------------------|-----------|-----------------------------------------------|------|---------|------|---------------|
| Reverse Stand-Off Voltage | $V_{RWM}$ |                                               |      |         | 36.0 | V             |
| Reverse Breakdown Voltage | $V_{BR}$  | $I_T=1\text{mA}$                              | 40   |         |      | V             |
| Reverse Leakage Current   | $I_R$     | $V_{RWM}=36.0\text{V}$ , $T=25^\circ\text{C}$ |      |         | 1    | $\mu\text{A}$ |
| Peak Pulse Current        | $I_{PP}$  | $t_p=8/20\mu\text{s}$                         |      |         | 8    | A             |
| Clamping Voltage          | $V_C$     | $I_{PP}=1\text{A}$ , $t_p=8/20\mu\text{s}$    |      | 42      |      | V             |
| Clamping Voltage          | $V_C$     | $I_{PP}=8\text{A}$ , $t_p=8/20\mu\text{s}$    |      | 55      |      | V             |
| Junction Capacitance      | $C_J$     | $V_R = 0\text{V}$ , $f = 1\text{MHz}$         |      | 20      | 30   | pF            |

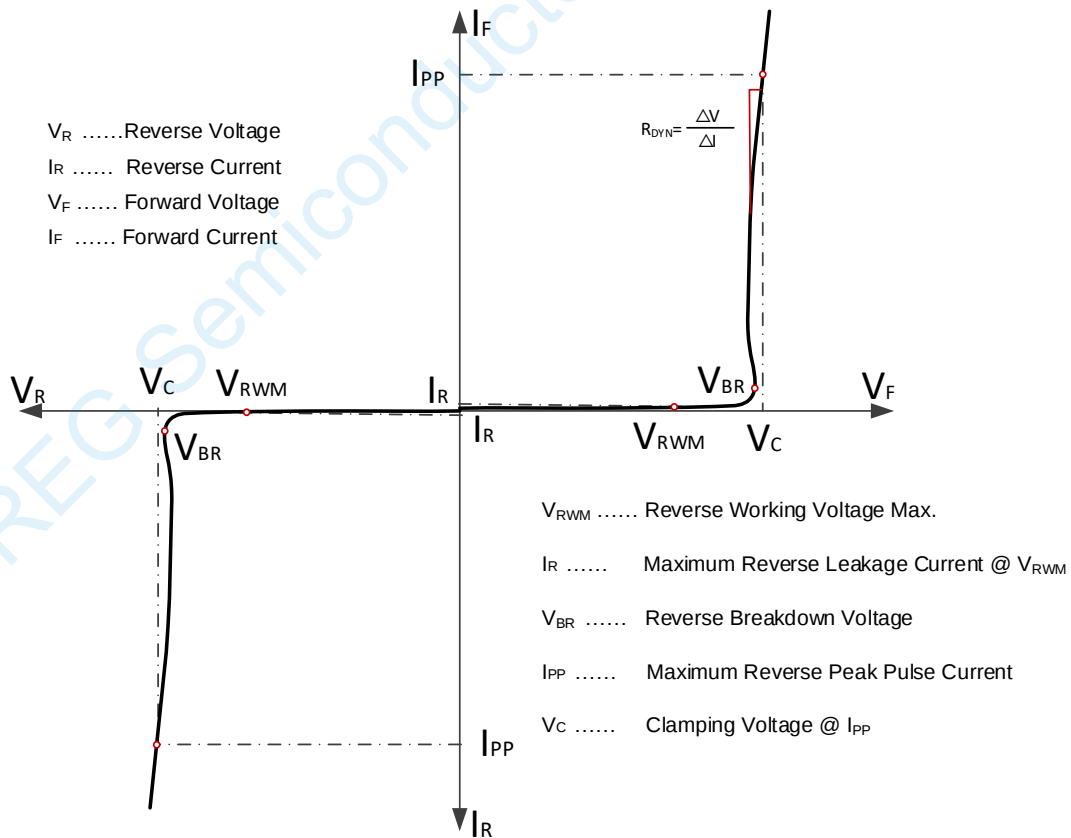
Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

1. All parameters specified at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

2. These parameters are guaranteed by design and characterization.

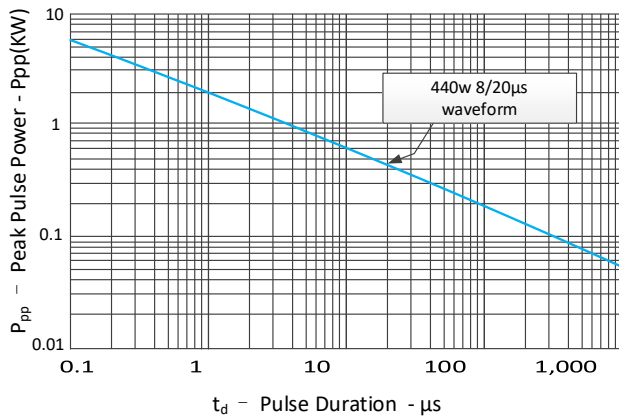
3. Standard IEC 61000-4-2 with  $C_{\text{Discharge}} = 150\text{ pF}$ ,  $R_{\text{Discharge}} = 330\ \Omega$

## Electrical Parameters at $T_A = 25^\circ\text{C}$ , unless otherwise specified

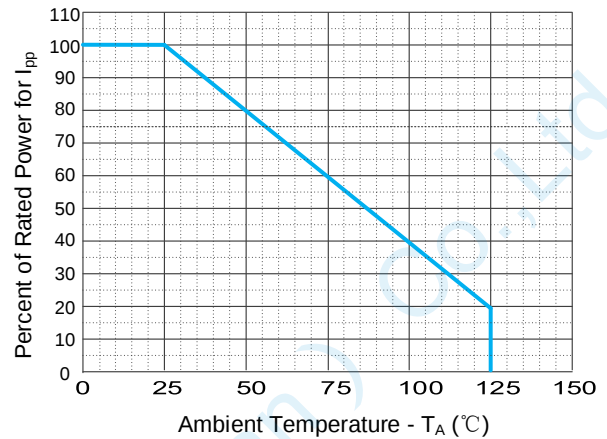


## Typical Characteristics at $T_A = 25^\circ\text{C}$ , unless otherwise specified

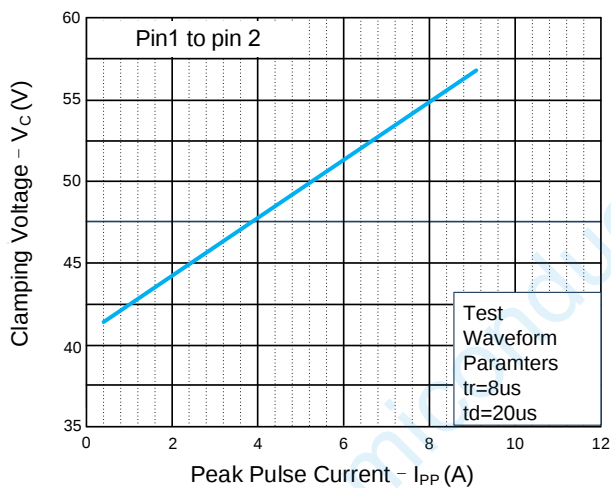
**Peak Pulse Power vs. Pulse Time**



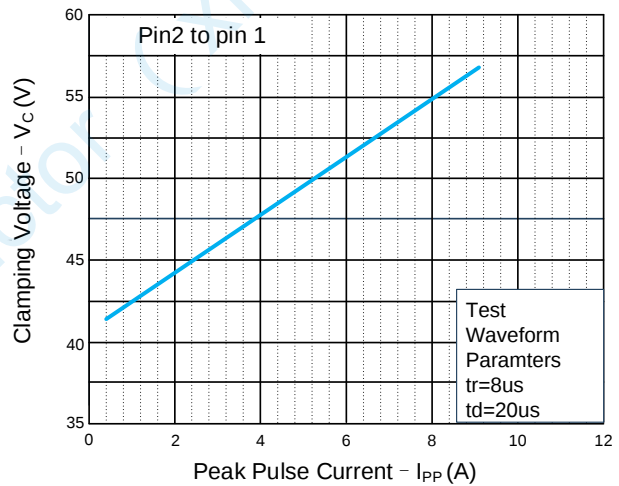
**Power derating vs. Ambient temperature**



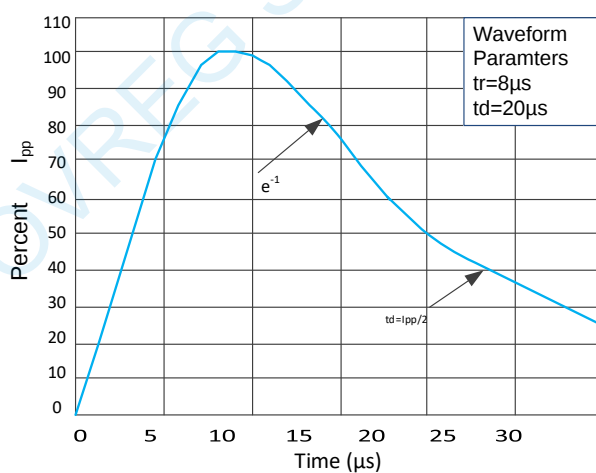
**Forward Clamping Voltage vs. peak Pulse Current**



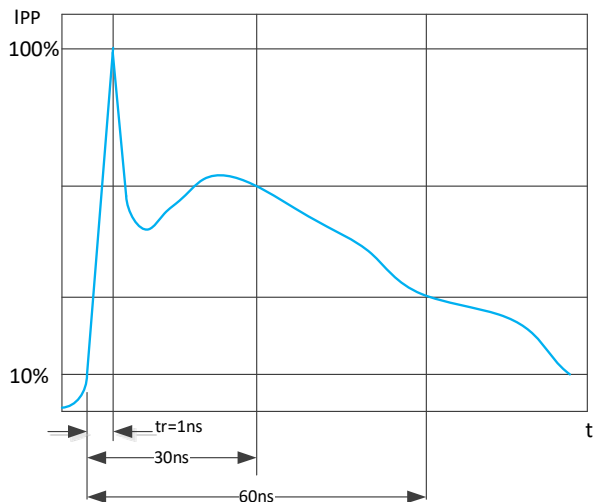
**Reverse Clamping Voltage vs. Peak Pulse Current**



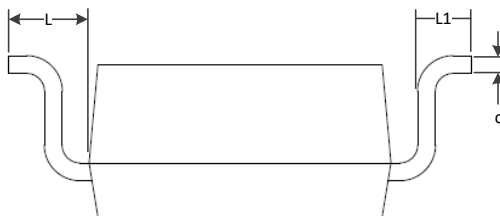
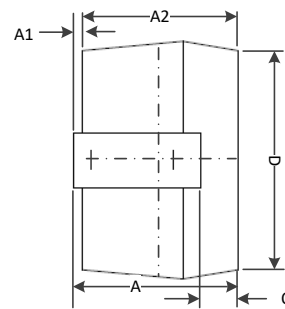
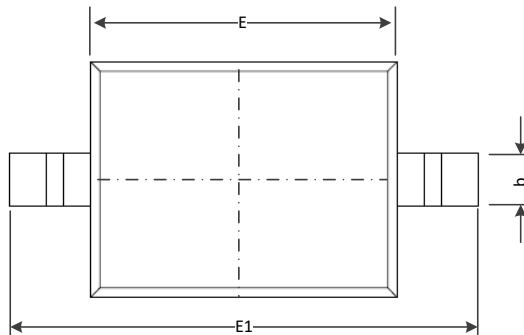
**8/20 $\mu\text{s}$  Pulse Waveform**



**IEC61000-4-2 +8kV Pulse Waveform**

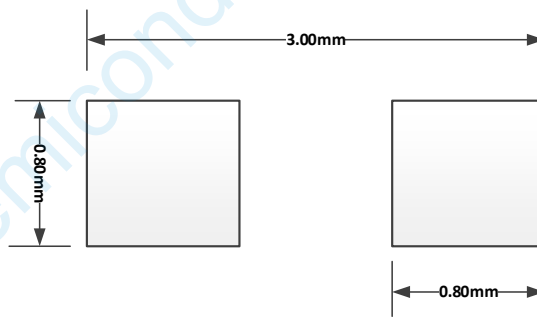


## Package information



| COMMON DIMENSION (MM) |           |       |       |
|-----------------------|-----------|-------|-------|
| PKG                   | SOD323    |       |       |
| Symbol                | MIN.      | NOM.  | MAX.  |
| A                     | 0.800     | 0.900 | 1.000 |
| A1                    | 0.000     | 0.050 | 0.100 |
| A2                    | 0.800     | 0.850 | 0.900 |
| b                     | 0.250     | 0.300 | 0.350 |
| c                     | 0.080     | -     | 0.150 |
| D                     | 1.200     | 1.300 | 1.400 |
| E                     | 1.600     | 1.700 | 1.800 |
| E1                    | 2.500     | 2.600 | 2.700 |
| L                     | 0.475 REF |       |       |
| L1                    | 0.250     | 0.260 | 0.270 |
| Q                     | 0.250 REF |       |       |

## Recommend PCB Layout



Notes: This PCB Layout Is For Reference Purposes Only

## Marking



## Ordering Information

| Part number | Material | Type | Reel size | MOQ     | MOQ/internal box | MOQ/carton         |
|-------------|----------|------|-----------|---------|------------------|--------------------|
| OVE3172K1   | GREEN    | T/R  | 7 inch    | 3k/reel | 10reel= 30k/box  | 4boxes=120k/carton |