

# RSD36C

## ■Description

The RSD36C is a bidirectional ESD diode designed to protect one I/O or power line against ESD and surge events. Utilizing advanced protection technology, it features low clamping voltage and fast response time, making it suitable for high-speed data lines and power supply protection in portable electronic devices.

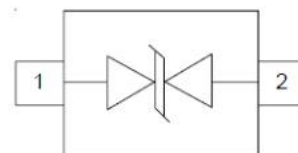
## ■Features

- 220W (8x20μs) Peak Pulse Power (PPK)
- Low Clamping Voltage (VC: 70V @ 1A, 90V @ 2.5A)
- SOD-323 Package (Lead-Free, RoHS Compliant)
- Matte Tin Lead Finish (Pb-Free)
- Meets IEC61000-4-2 Level 4:Contact Discharge >20kV ;  
Air Discharge >20kV
- Low Reverse Leakage Current ( $I_R \leq 1\mu A$  @ 36V VRWM)
- Junction Capacitance: 20pF Typ. (VR=0V, f=1MHz)

## ■Applications

- Smart Phones
- Laptop Computers
- Portable Electronics
- High-Speed Data Lines and Power Supply Protection

## Circuit Diagram



## Marking Diagram



## Ordering Information

| DEVICE | PACKAGE          |
|--------|------------------|
| RSD36C | 3000/Tape & Reel |

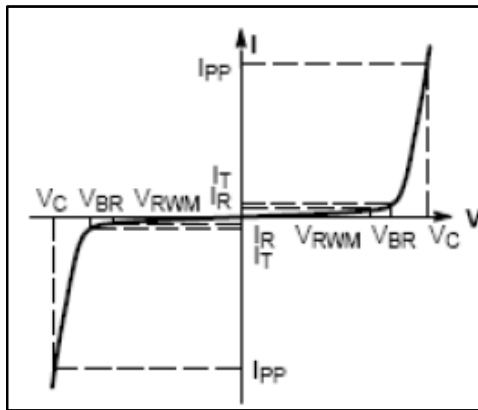
## ■Absolute Maximum Ratings(TA=25°C unless otherwise specified)

| Symbol  | Parameter                    | Value       | Unit |
|---------|------------------------------|-------------|------|
| TJ      | Junction Temperature         | -55 to +150 | °C   |
| TSTG    | Storage Temperature          | -55 to +150 | °C   |
| Ipp Max | Maximum Peak Pulse Current P | 2.5         | A    |
| PPK     | Peak Pulse Power             | 220         | W    |

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## Partial Electronic Parameters

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

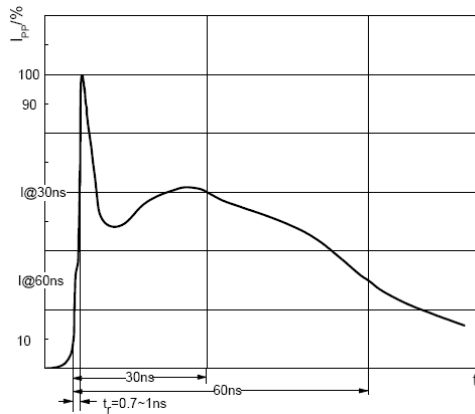


**V-I characteristics for a Bi-directional TVS**

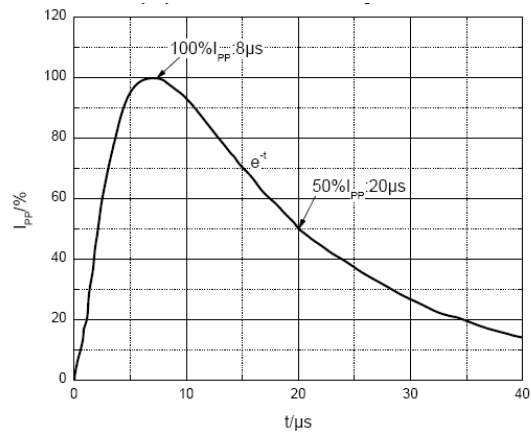
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## ■Electrical Characteristics( $T_A=25^{\circ}\text{C}$ unless otherwise specified)

| RSD36C |                              |                                              |     |     |     |               |
|--------|------------------------------|----------------------------------------------|-----|-----|-----|---------------|
| Symbol | Parameter                    | Conditions                                   | Min | Typ | Max | Unit          |
| VRWM   | Reverse Working Peak Voltage |                                              |     |     | 36  | V             |
| VBR    | Reverse Breakdown Voltage    | $I_T = 1\text{mA}$                           | 40  | 43  | 48  | V             |
| IR     | Reverse Leakage Current      | VRWM = 36V                                   |     |     | 1   | $\mu\text{A}$ |
| VC     | Clamping Voltage             | $I_{PP} = 1\text{A}$ (8/20 $\mu\text{s}$ )   |     |     | 70  | V             |
| VC     | Clamping Voltage             | $I_{PP} = 2.5\text{A}$ (8/20 $\mu\text{s}$ ) |     |     | 90  | V             |
| Ipp    | Peak Pulse Current           | $t_p = 8/20\mu\text{s}$                      |     |     | 2.5 | A             |
| CJ     | Capacitance                  | VR = 0V, f = 1MHz                            |     | 20  |     | pF            |



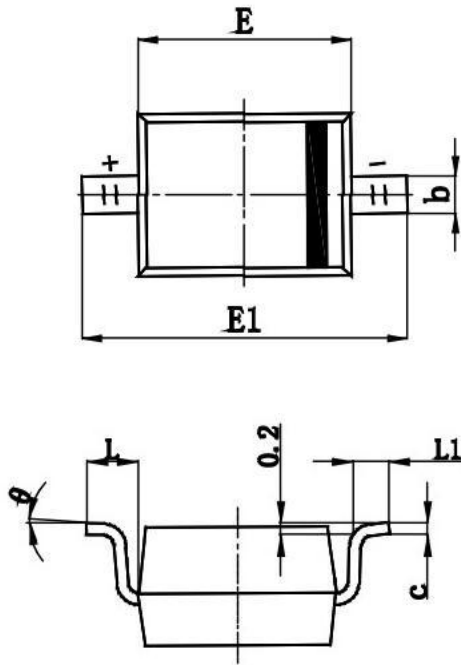
ESD pulse waveform according to IEC61000-4-2



8/20 $\mu\text{s}$  pulse waveform according to IEC 61000-4-5

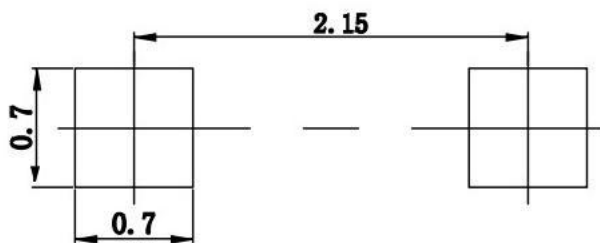
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## SOD-323 Package Outline Dimensions



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min.                      | Max.  | Min.                 | Max.  |
| A      |                           | 1.000 |                      | 0.039 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 0.800                     | 0.900 | 0.031                | 0.035 |
| b      | 0.250                     | 0.350 | 0.010                | 0.014 |
| c      | 0.080                     | 0.150 | 0.003                | 0.006 |
| D      | 1.200                     | 1.400 | 0.047                | 0.055 |
| E      | 1.600                     | 1.800 | 0.063                | 0.071 |
| E1     | 2.550                     | 2.750 | 0.100                | 0.108 |
| L      | 0.475 REF.                |       | 0.019 REF.           |       |
| L1     | 0.250                     | 0.400 | 0.010                | 0.016 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |

## SOD-323 Suggested Pad Layout



### Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.