Leiditech

# SD33CW

## BIDIRECTIONAL TVS DIODE

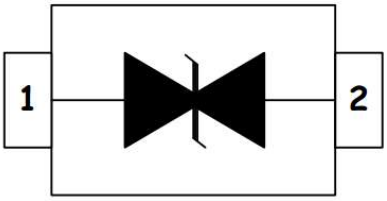
## Features

- Ultra low leakage: nA level
- Operating voltage: 33V
- Low clamping voltage
- Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±30kV
    - Contact discharge: ±30kV
  - – IEC61000-4-4 (EFT) 40A (5/50ns)
  - – IEC61000-4-5 (Lightning) 9.3A (8/20μs)
- RoHS Compliant

## Dimensions SOD-323



## Pin Configuration




## Applications

- USB 2.0 power and data line
- Set-top box and digital TV
- Digital video interface (DVI)
- Notebook Computers
- SIM Ports
- 10/100 Ethernet

## Mechanical Characteristics

- Package: SOD-323
- Lead Finish: Lead Free
- UL Flammability Classification Rating 94V-0
- Quantity Per Reel:3,000pcs
- Reel Size:7 inch

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

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Peak Pulse Power (8/20μs) | Ppp | 600 | W |
| ESD per IEC 61000−4−2 (Air) | $V_{ESD}$ | ± 30 | Kv |
| ESD per IEC 61000−4−2 (Contact) | | ± 30 | |
| Operating Temperature Range | $T_J$ | -55 to +125 | ℃ |
| Storage Temperature Range | $T_{STJ}$ | -55 to +150 | ℃ |



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## Electrical Characteristics(TA=25°C unless otherwise specified)

| Part Number | Device Marking | $V_{RWM}$ (V) | $V_{BR}$ (V) | $I_T$ (mA) | $V_C$ @1A | Vc | | $I_R$ μA (Max) | C (Pf) (Typ.) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | (Max) | (@A) | | |
| SD33CW | 30C | 33 | 36.7 | 1 | 53.1 | 71 | 8.5 | 1 | 38 |

## Characteristic Curves

FIGURE 1
PEAK PULSE POWER VS PULSE TIME

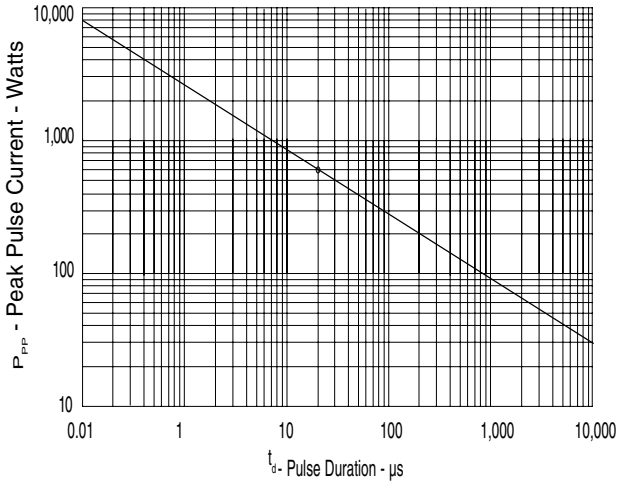



FIGURE 2
PULSE WAVE FORM

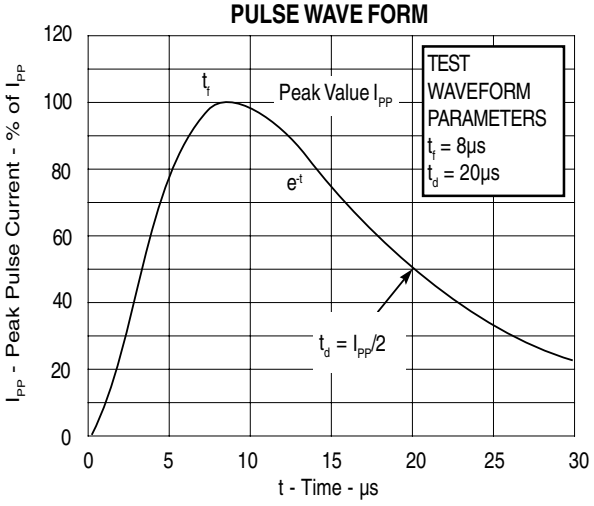



FIGURE 3
POWER DERATING CURVE

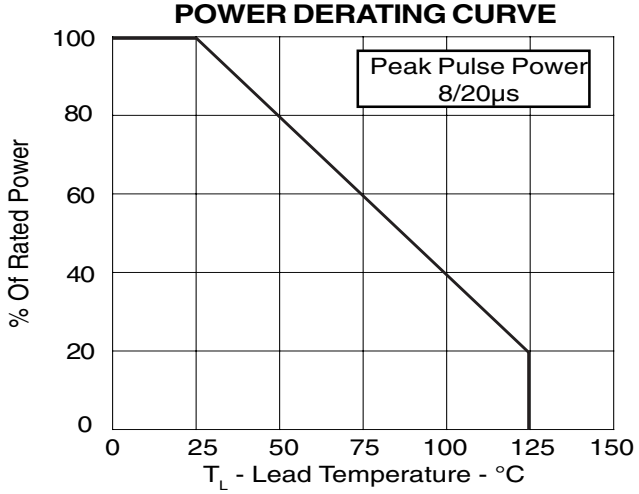
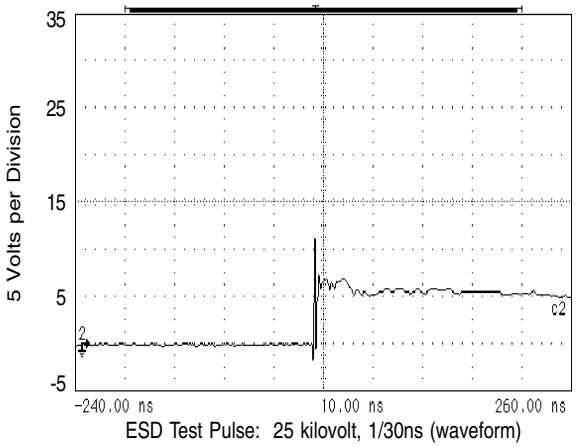



FIGURE 4
OVERSHOOT & CLAMPING VOLTAGE FOR SD03C

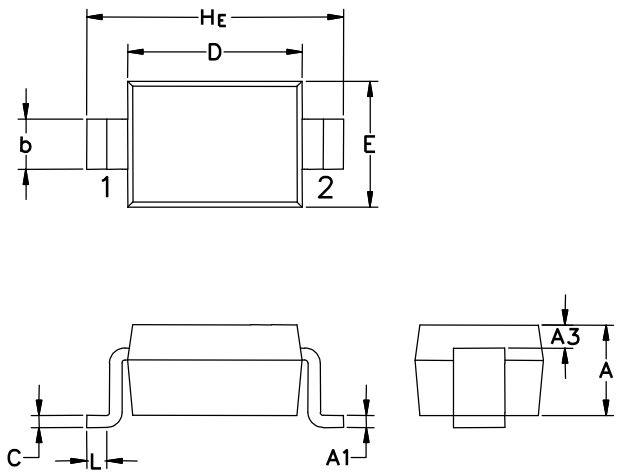



ESD Test Pulse: 25 kilovolt, 1/30ns (waveform)



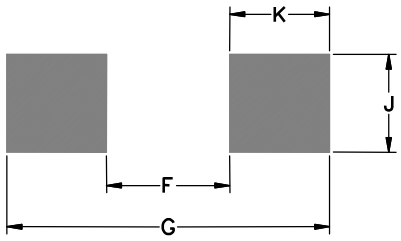
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## SOD-323 Package Outline & Dimensions




| Symbol | Millimeters | | | Inches | | |
|---|---|---|---|---|---|---|
| | Min. | Nom. | Max. | Min. | Nom. | Max. |
| A | 0.80 | 0.90 | 1.15 | 0.031 | 0.035 | 0.045 |
| A1 | 0.0.01 | 0.05 | 0.15 | 0.004 | 0.002 | 0.006 |
| A3 | 0.15 REF | | | 0.006 REF | | |
| b | 0.25 | 0.32 | 0.45 | 0.010 | 0.012 | 0.018 |
| C | 0.100 | 0.12 | 0.150 | 0.004 | 0.005 | 0.006 |
| D | 1.60 | 1.70 | 1.95 | 0.063 | 0.066 | 0.077 |
| E | 1.10 | 1.25 | 1.50 | 0.043 | 0.049 | 0.059 |
| L | 0.08 | | | 0.003 | | |
| $H_E$ | 2.65 | 2.85 | 3.10 | 0.104 | 0.112 | 0.122 |

### Soldering Footprint




| Symbol | Millimeters | Inches |
|---|---|---|
| F | 1.60 | 0.063 |
| G | 3.20 | 0.125 |
| J | 0.60 | 0.024 |
| K | 0.80 | 0.031 |

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