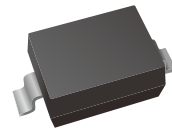


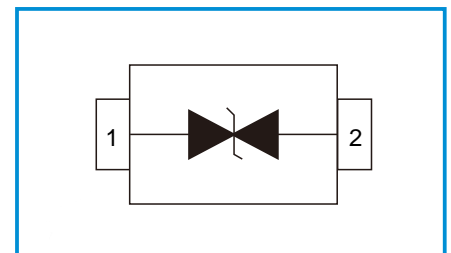
Ultra Low Capacitance ESD Protection Diode

Features

- Transient protection for high-speed data lines
 IEC 61000-4-2 (ESD) ±15kV (Air)
 ±8kV (Contact)
 IEC 61000-4-4 (EFT) 40A (5/50 ns)
- Cable Discharge Event (CDE)
- Ultra-small package
- Protects one data, control line
- Low capacitance: 0.25pF (Typical)
- Low leakage current
- Low clamping voltage
- Marking: 5BU



Functional Diagram



Applications

- 10/100M Ethernet Ports
- WAN/LAN Equipment
- Desktops, Servers and Notebooks
- Cellular Phones
- Switching Systems
- Audio/Video Inputs

Mechanical Characteristics

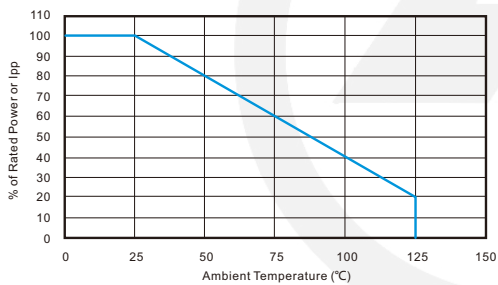
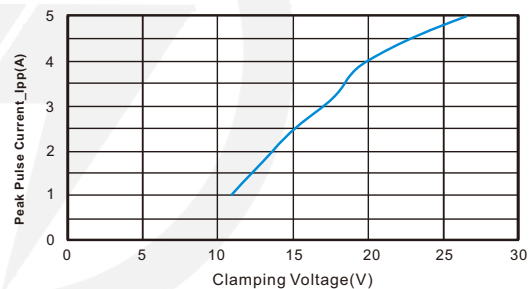
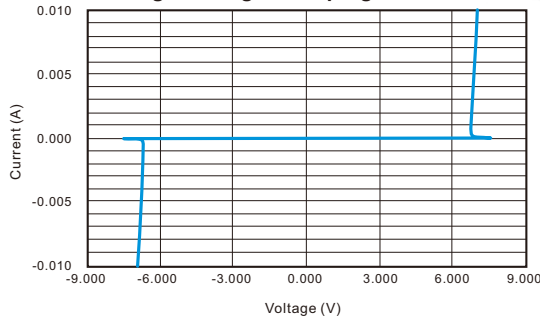
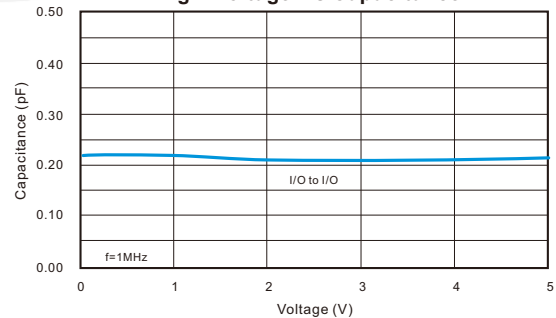
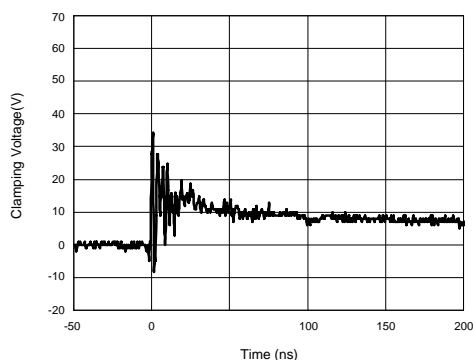
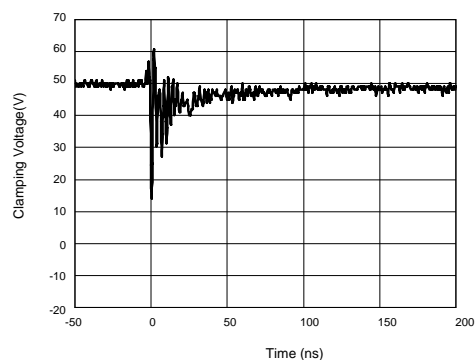
- SOD-323 package
- Flammability Rating: UL 94V-0
- Packaging: Tape and Reel
- High temperature soldering guaranteed: 260°C/10s
- Reel size: 7 inch

Absolute Maximum Ratings (T_{amb}=25°C unless otherwise specified)

| Symbol | Parameter | Value | Units |
|------------------|--|------------|-------|
| V _{ESD} | ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact) | ±20 ±20 | kV |
| P _{PP} | Peak Pulse Power (8/20μs) | 100 | W |
| T _{OPT} | Operating Temperature | -55~125 | °C |
| T _{STG} | Storage Temperature | -55~150 | °C |

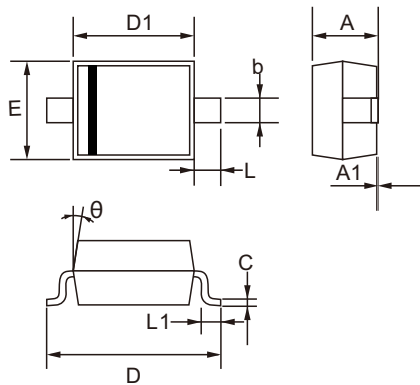
Electrical Characteristics (TA=25°C unless otherwise specified)

| Symbol | Parameter | Test Condition | Min | Typ | Max | Units |
|-----------|---------------------------|--------------------------------|-----|------|------|-------|
| V_{RWM} | Reverse Working Voltage | | | | 5.0 | V |
| V_{BR} | Reverse Breakdown Voltage | $I_T = 1mA$ | 6.0 | | | V |
| I_R | Reverse Leakage Current | $V_{RWM} = 5V$ | | | 100 | nA |
| V_C | Clamping Voltage | $I_{PP} = 1A, t_p = 8/20\mu s$ | | | 13 | V |
| | | $I_{PP} = 4A, t_p = 8/20\mu s$ | | | 25 | V |
| C_J | Junction Capacitance | $V_R = 0V, f = 1MHz$ | | 0.25 | 0.40 | pF |

Characteristic Curves
Fig1 Power Derating Curve

Fig2 Clamping Voltage vs Peak Pulse Current

Fig3 Voltage Sweeping of I/O to I/O

Fig4 Voltage vs Capacitance

Fig5 ESD Clamping (+8kv Contact per IEC 61000-4-2)

Fig6 ESD Clamping (-8kv Contact per IEC 61000-4-2)


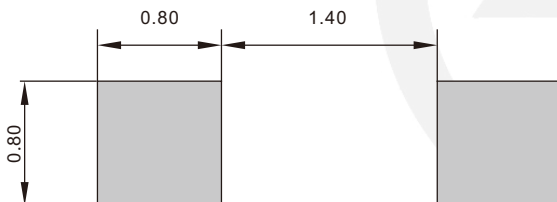
SOD-323 Package Outline

Unit: mm

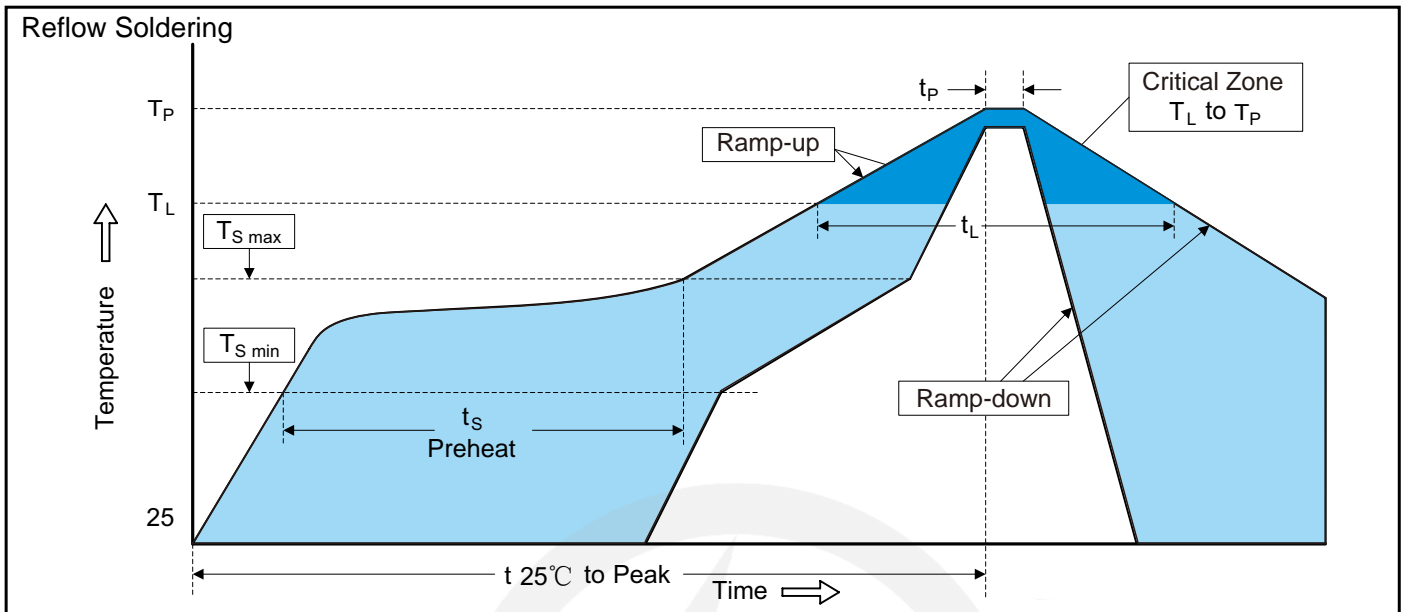


| SYMBOL | DIMENSIONS | |
|--------|------------|-------|
| | MIN. | MAX. |
| A | 0.800 | 1.100 |
| A1 | 0.000 | 0.200 |
| b | 0.250 | 0.400 |
| C | 0.080 | 0.177 |
| D | 2.300 | 2.800 |
| D1 | 1.400 | 1.800 |
| E | 1.150 | 1.400 |
| L1 | 0.100 | 0.400 |
| L | 0.475 TYP. | |
| θ | 8° | |

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 purpose only.

Recommended Soldering Conditions

Recommended Conditions

| Profile Feature | Pb-Free Assembly |
|---|----------------------------------|
| Average ramp-up rate (T_L to T_P) | 3°C/second max. |
| Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max) (t_s) | 150°C 200°C 60-180 seconds |
| $T_{S\ max}$ to T_L -Ramp-up Rate | 3°C/second max. |
| Time maintained above: -Temperature (T_L) -Time (t_L) | 217°C 60-150 seconds |
| Peak Temperature (T_P) | 260°C |
| Time within 5°C of actual Peak Temperature (t_P) | 20-40 seconds |
| Ramp-down Rate | 6°C/second max. |
| Time 25°C to Peak Temperature | 8 minutes max. |

7" Reel

 D2 $\Phi 178.0 \pm 2.0$

 D3 $\Phi 50.0 \text{ Min.}$

 D4 $\Phi 13.0 \pm 0.5$

 W1 16.0 ± 2.0

Quantity: 3000PCS