

FEATURES:

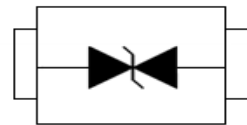
- ✧ Protects one bi-directional I/O line
- ✧ Low clamping voltage
- ✧ Low operating voltage: 15V
- ✧ ROHS compliant



SOD-323

MAIN APPLICATIONS

- ✧ Cell Phone Handsets and Accessories
- ✧ Personal Digital Assistants (PDA's)
- ✧ Notebooks, Desktops, and Servers
- ✧ Portable Instrumentation
- ✧ Pagers
- ✧ Microprocessor based equipment



PIN Configuration

PROTECTION SOLUTION TO MEET

- ✧ IEC61000-4-2 (ESD) $\pm 25\text{kV}$ (air), $\pm 25\text{kV}$ (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)

MECHANICAL CHARACTERISTICS

- ✧ Package SOD-323
- ✧ Molding Compound Flammability Rating : UL 94V-O
- ✧ Quantity Per Reel : 3,000pcs
- ✧ Lead Finish : Lead Free
- ✧ Marking : 15B

ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$, RH=45%-75%, unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---|------------------|---------------|------------------|
| Storage temperature range | T_{stg} | -55 to +150 | $^\circ\text{C}$ |
| Operating junction temperature range | T_j | -55 to +125 | $^\circ\text{C}$ |
| Lead Soldering Temperature | T_L | 260 (10 sec.) | $^\circ\text{C}$ |
| Peak pulse power dissipation on 8/20 μs waveform | P_{PP} | 350 | W |
| ESD per IEC 61000-4-2 (Air) | V_{ESD} | +/- 25 | kV |
| ESD per IEC 61000-4-2 (Contact) | | +/- 25 | |

ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$)

| Parameter | Symbol | Conditions | Min | Typ | Max | Units |
|---------------------------|----------|--|------|-----|-----|---------------|
| Reverse Working Voltage | V_R | | | | 15 | V |
| Reverse Breakdown Voltage | V_{BR} | $I_T = 1\text{mA}$ | 16.7 | | | V |
| Reverse Leakage Current | I_R | $V_R = 15\text{V}$ | | | 1.0 | μA |
| Peak Pulse Current | I_{pp} | $t_p = 8/20\mu\text{s}$ | | | 10 | A |
| Clamping Voltage | V_C | $I_{PP} = 1\text{A}, t_p = 8/20\mu\text{s}$ | | | 23 | V |
| | | $I_{PP} = 10\text{A}, t_p = 8/20\mu\text{s}$ | | | 35 | V |
| Junction Capacitance | C_J | $V_R = 0\text{V}, f = 1\text{MHz}$ | | 35 | 40 | pF |

RATINGS AND V-I CHARACTERISTICS CURVES ($T_A=25^{\circ}\text{C}$, unless otherwise noted)

FIG.1: V- I curve characteristics (Bi-directional)

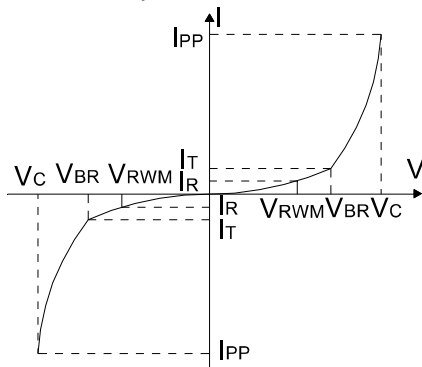


FIG.2: Pulse waveform (8/20 μs)

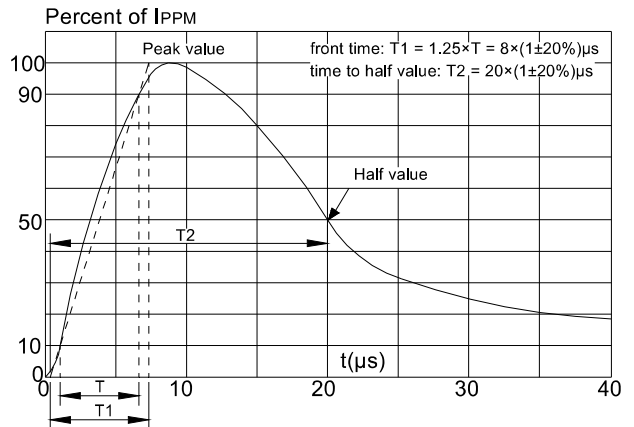


FIG.3: Pulse derating curve

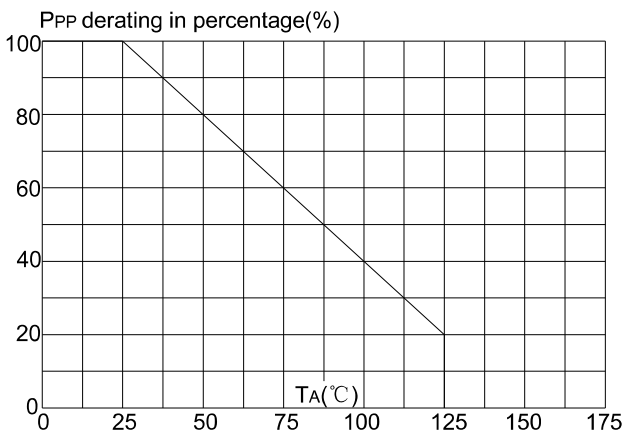
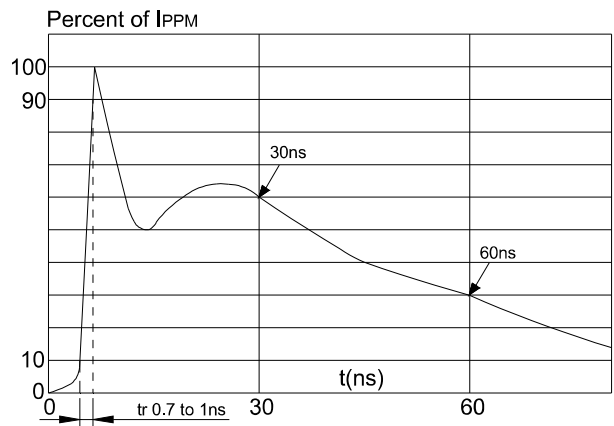
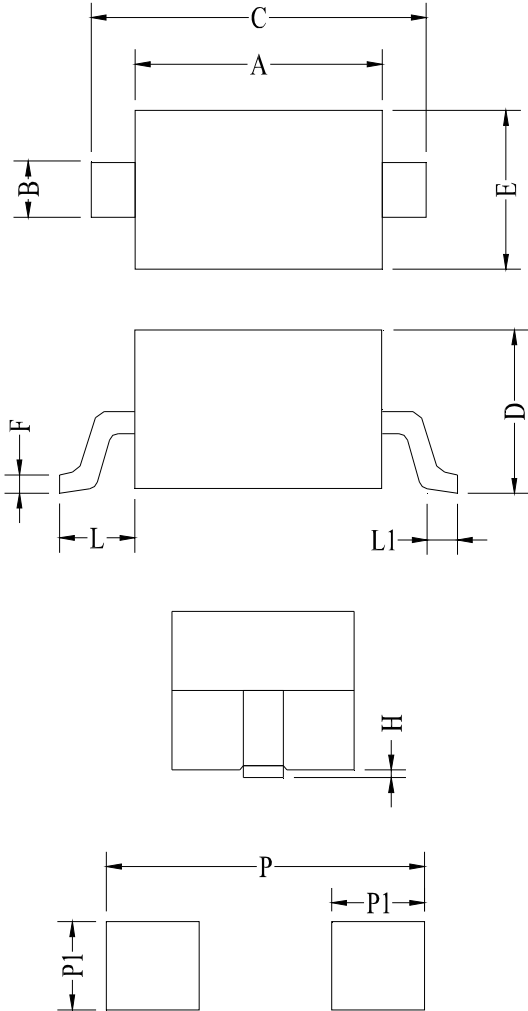


FIG.4: ESD clamping



PACKAGE MECHANICAL DATA

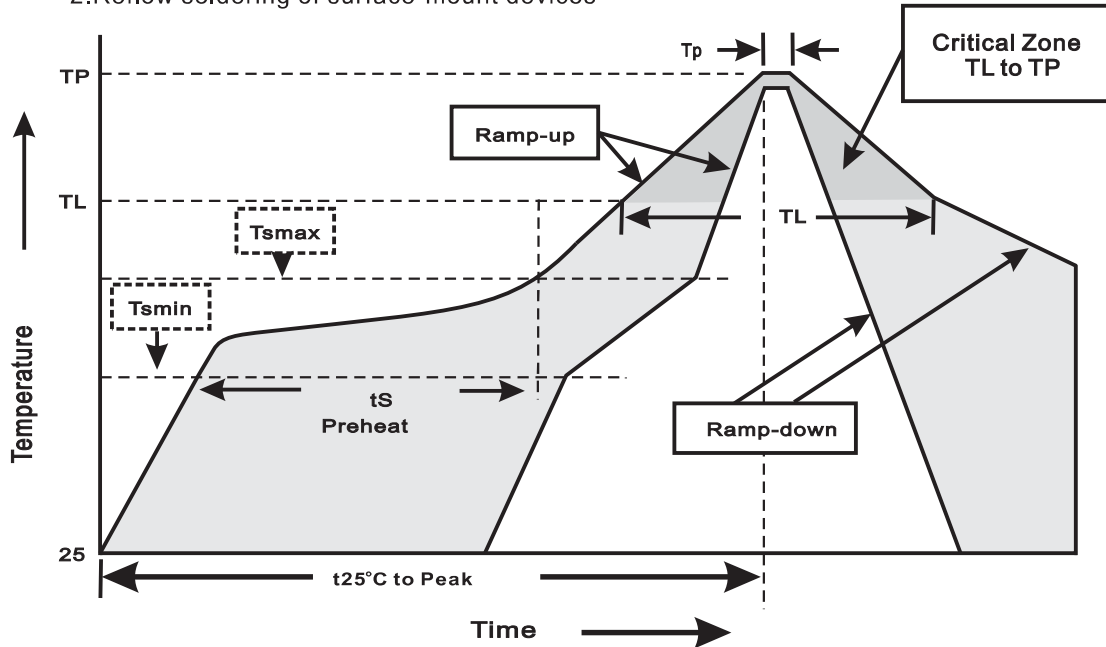


| Symbol | Millimeter | | Inches | |
|--------|------------|------|----------|-------|
| | Min | Max | Min | Max |
| A | 1.60 | 1.80 | 0.063 | 0.071 |
| B | 0.25 | 0.35 | 0.010 | 0.014 |
| C | 2.50 | 2.70 | 0.098 | 0.106 |
| D | 0.00 | 1.00 | 0.000 | 0.039 |
| E | 1.20 | 1.40 | 0.047 | 0.055 |
| F | 0.08 | 0.15 | 0.003 | 0.006 |
| L | 0.475REF | | 0.019REF | |
| L1 | 0.25 | 0.40 | 0.010 | 0.016 |
| H | 0.00 | 0.10 | 0.000 | 0.004 |
| P | 3.00 | | 0.118 | |
| P1 | 0.80 | | 0.031 | |

Land Pattern

Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
- 2.Reflow soldering of surface-mount devices



3.Reflow soldering

| Profile Feature | Soldering Condition |
|--|-----------------------------|
| Average ramp-up rate(TL to TP) | <3°C/sec |
| Preheat -Temperature Min(Tsmin) -Temperature Max(Tsmax) -Time(min to max)(ts) | 150°C 200°C 60~120sec |
| Tsmax to TL -Ramp-upRate | <3°C/sec |
| Time maintained above: -Temperature(TL) -Time(tL) | 217°C 60~260sec |
| Peak Temperature(TP) | 255°C-0/+5°C |
| Time within 5°C of actual Peak Temperature(tp) | 10~30sec |
| Ramp-down Rate | <6°C/sec |
| Time 25°C to Peak Temperature | <6minutes |

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