

## FEATURES

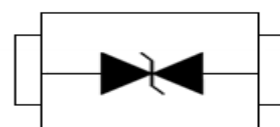
- ✧ 450 Watts peak pulse power per line ( $t_p=8/20\mu s$ )
- ✧ Protects one bi-directional I/O line
- ✧ Low clamping voltage
- ✧ Working voltages:3.3V
- ✧ Low leakage current
- ✧ RoHS compliant



SOD-323

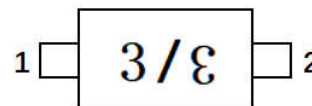
## MAIN APPLICATIONS

- ✧ Cell phone handsets and accessories
- ✧ Microprocessor based equipment
- ✧ Personal digital assistants (PDA's)
- ✧ Notebooks, desktops, and servers
- ✧ Portable instrumentation
- ✧ Peripherals
- ✧ Pagers



PIN Configuration

## MARKING



## PROTECTION SOLUTION TO MEET

- ✧ IEC61000-4-2 (ESD)  $\pm 30kV$  (air),  $\pm 30kV$  (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ IEC61000-4-5 (Lightning) 30A (8/20 $\mu s$ )

## MECHANICAL CHARACTERISTICS

- ✧ SOD-323 package
- ✧ Molding compound flammability rating : UL 94V-0
- ✧ Weight 5 milligrams (approximate)
- ✧ Quantity per reel:3,000pcs
- ✧ Lead finish : lead free

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

| Parameter                                                      | Symbol    | Value            | Unit               |
|----------------------------------------------------------------|-----------|------------------|--------------------|
| Peak pulse power dissipation on 8/20 $\mu\text{s}$ waveform    | $P_{PP}$  | 450              | W                  |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | $V_{ESD}$ | +/- 30<br>+/- 30 | kV                 |
| Lead soldering temperature                                     | $T_L$     | 260 (10 sec.)    | $^{\circ}\text{C}$ |
| Operating junction temperature range                           | $T_J$     | -55 to +125      | $^{\circ}\text{C}$ |
| Storage temperature range                                      | $T_{STG}$ | -55 to +150      | $^{\circ}\text{C}$ |

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

| Parameter                 | Symbol    | Conditions                                      | Min | Typ | Max | Unit          |
|---------------------------|-----------|-------------------------------------------------|-----|-----|-----|---------------|
| Reverse working voltage   | $V_{RWM}$ |                                                 |     |     | 3.3 | V             |
| Reverse breakdown voltage | $V_{BR}$  | $I_T = 1\text{mA}$                              | 4   |     | 6   | V             |
| Reverse leakage current   | $I_R$     | $V_{RWM} = 3.3\text{V}$                         |     |     | 1   | $\mu\text{A}$ |
| Clamping voltage          | $V_C$     | $I_{PP} = 30\text{A}$ , $t_p = 8/20\mu\text{s}$ |     |     | 12  | V             |
| Junction capacitance      | $C_J$     | $V_{RWM} = 0\text{V}$ , $f = 1\text{MHz}$       |     | 50  | 100 | pF            |

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

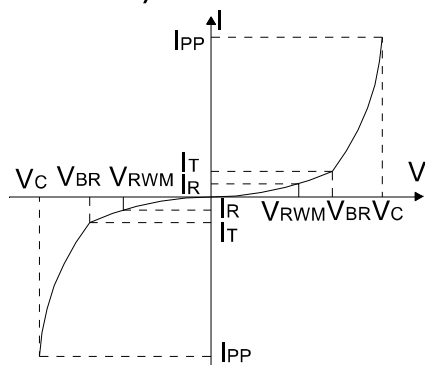
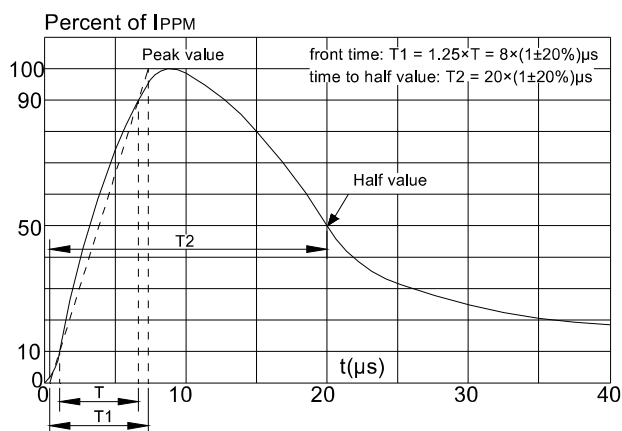
**FIG.1: V- I curve characteristics (Bi-directional)**

**FIG.2: Pulse waveform (8/20 $\mu\text{s}$ )**


**FIG.3: Pulse derating curve**

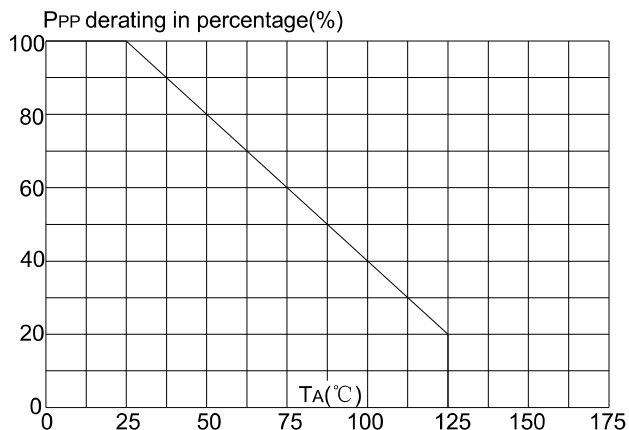
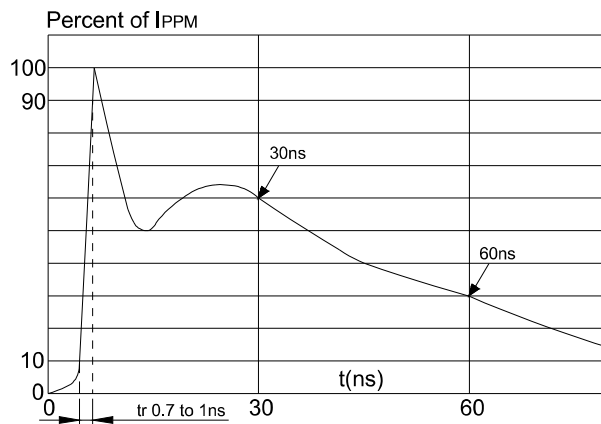
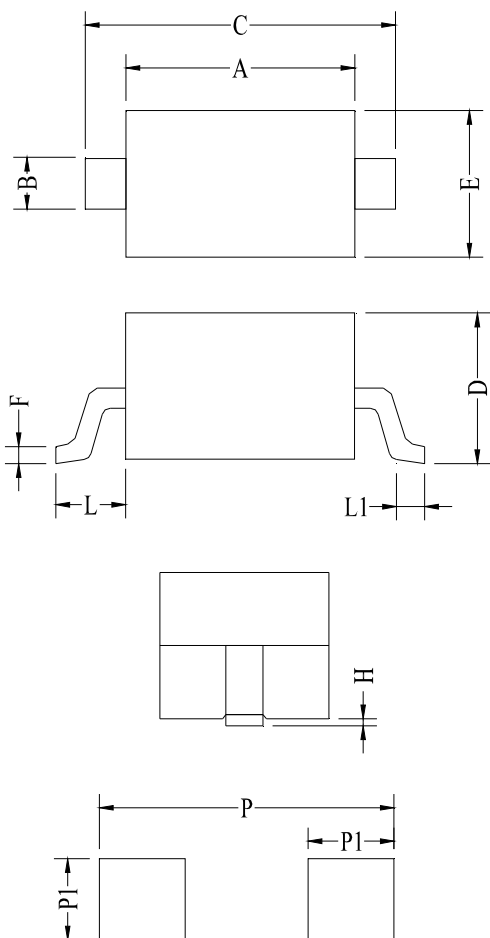


**FIG.4: ESD clamping**



## PACKAGE MECHANICAL DATA



**Land Pattern**

| 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    |       |