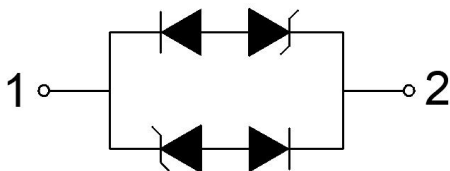


### Features

- 2-pin lead-less package
- Low Junction capacitance (Max value: 1.5pF)
- Peak Pulse current (8/20  $\mu$ s) MAX : 20A
- IEC61000-4-2 (ESD)  $\pm$ 30kV (air),  $\pm$ 30kV (contact)
- Low leakage current
- Working voltages:5V
- RoHS Compliant

### Appearance & Symbol



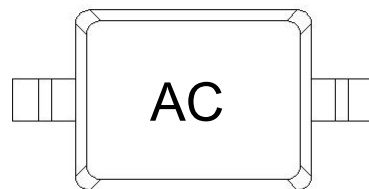
### Mechanical Characteristics

- Package: SOD-323
- Lead Finish:Matte Tin
- Case Material: "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Tape Reel :3000pcs

### Applications

- LED Lighting Modules
- RS232/RS485
- CAN and LIN Bus
- Portable Instrumentation
- General Purpose I/O
- Automotive application

### Marking Information



AC=Marking Code

### Absolute Maximum Ratings (T=25°C, RH=45%-75%, unless otherwise noted)

| Parameters                                                     | Symbol           | Value       | Unit |
|----------------------------------------------------------------|------------------|-------------|------|
| Peak Pulse Power (tp=8/20μs waveform)                          | P <sub>PP</sub>  | 400         | W    |
| Peak Pulse Current (8/20μs)                                    | I <sub>PP</sub>  | 20          | A    |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | V <sub>ESD</sub> | ±30<br>±30  | KV   |
| Operating Temperature Range                                    | T <sub>J</sub>   | -55 to +125 | °C   |
| Storage Temperature Range                                      | T <sub>stg</sub> | -55 to +150 | °C   |

### Electrical Characteristics (T=25°C, RH=45%-75%, unless otherwise noted)

| Parameter                 | Symbol           | Test Condition                                | Min | Typ | Max  | Unit |
|---------------------------|------------------|-----------------------------------------------|-----|-----|------|------|
| Reverse Working Voltage   | V <sub>RWM</sub> |                                               |     |     | 5    | V    |
| Reverse Breakdown Voltage | V <sub>BR</sub>  | I <sub>R</sub> = 1mA                          | 6.2 |     | 9    | V    |
| Reverse Leakage Current   | I <sub>R</sub>   | V <sub>R</sub> = 5V                           |     |     | 0.2  | uA   |
| Clamping voltage          | V <sub>C</sub>   | I <sub>PP</sub> = 1A, T <sub>P</sub> =8/20us  |     |     | 10.5 | V    |
| Clamping voltage          | V <sub>C</sub>   | I <sub>PP</sub> = 20A, T <sub>P</sub> =8/20us |     |     | 20   | V    |
| Junction capacitance      | C <sub>j</sub>   | V <sub>R</sub> = 0V, f = 1MHz                 |     | 1.0 | 1.5  | pF   |

## Typical Characteristics

FIG1: Power rating derating curve

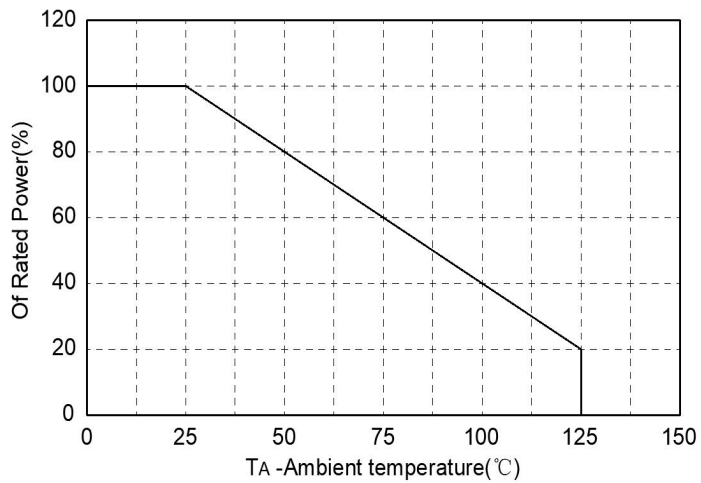


FIG2: pulse Waveform

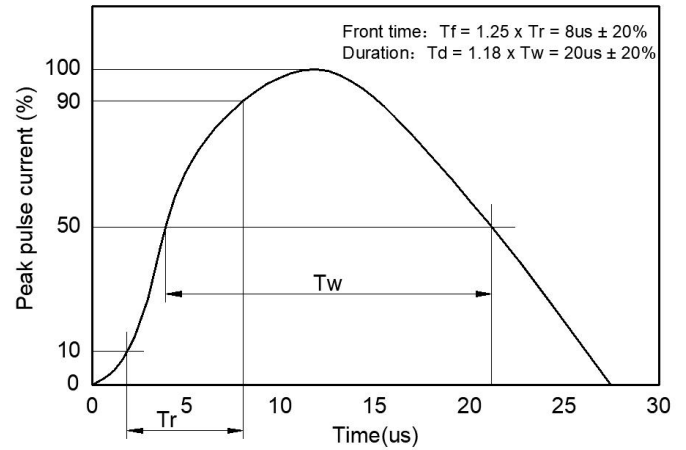


FIG3: Capacitance between terminals characteristics

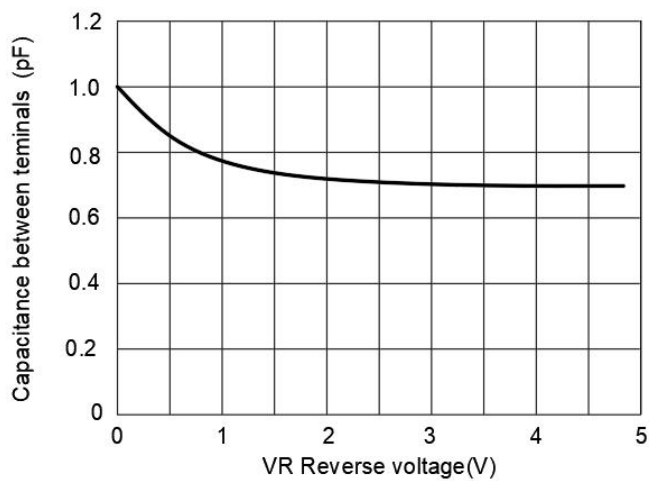
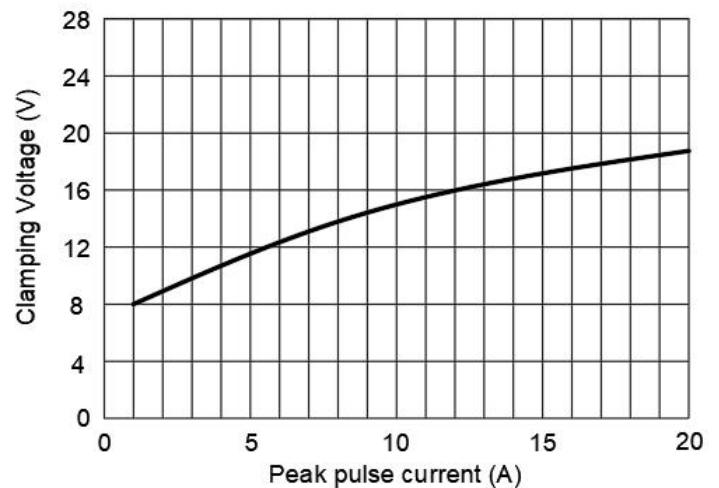
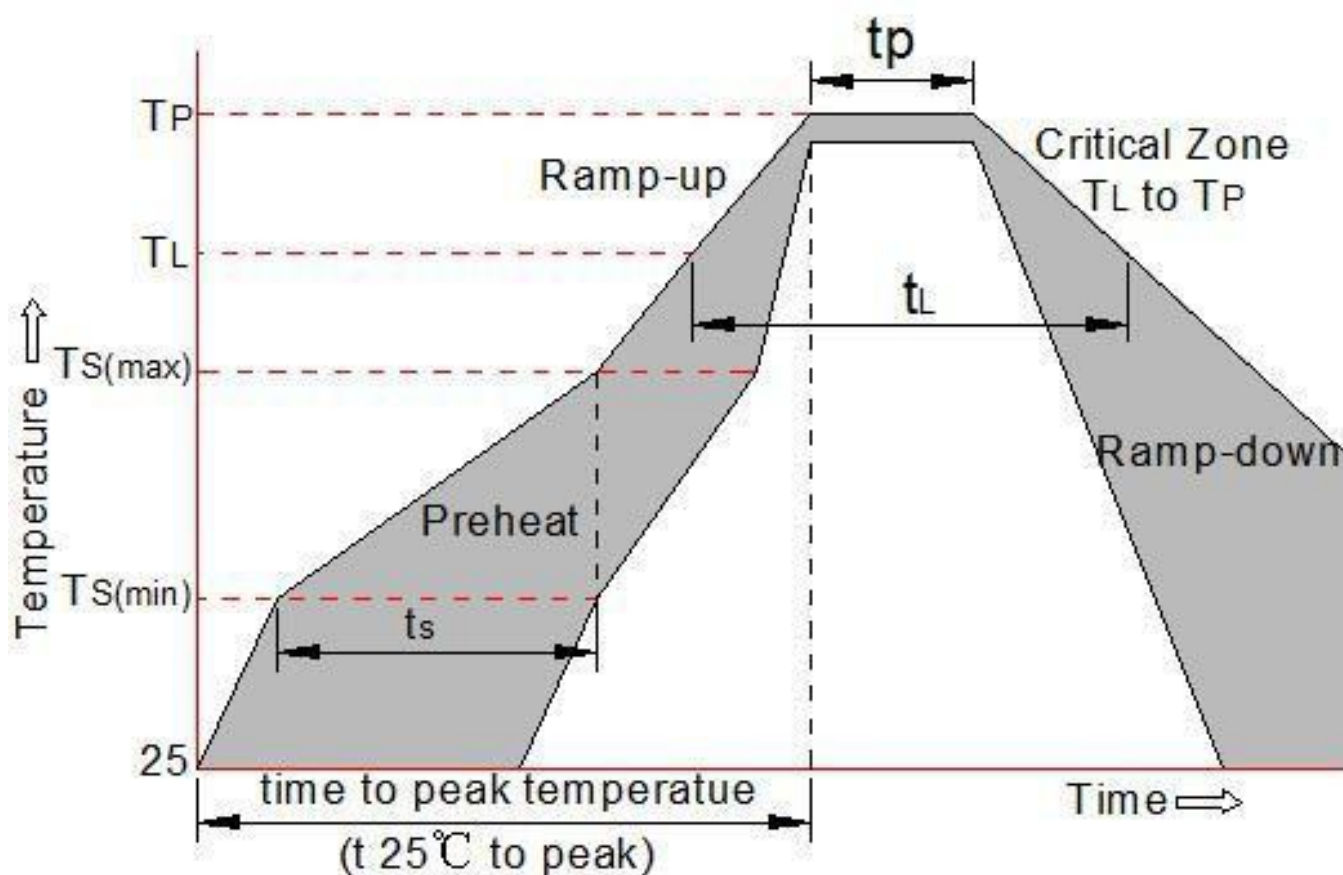


FIG4: Clamping Voltage vs. Peak Pulse Current

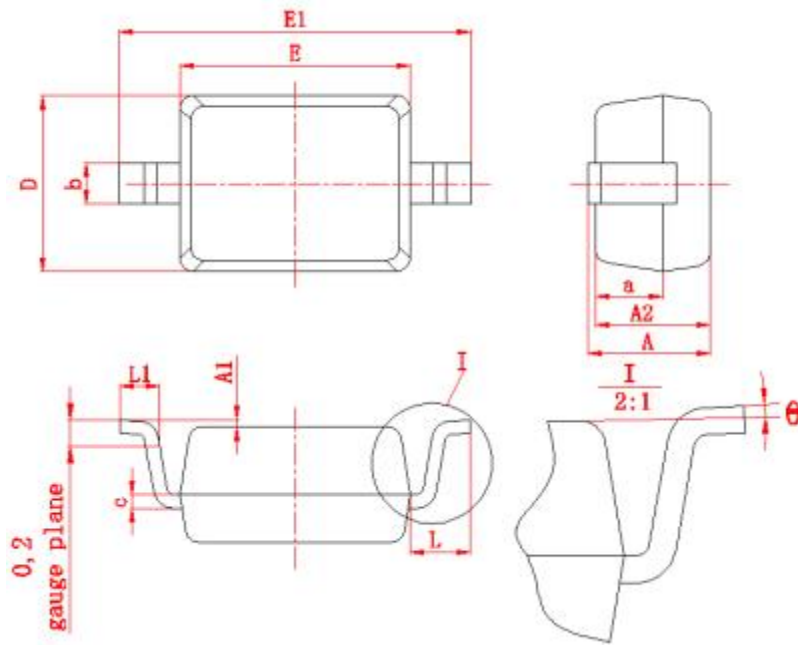


## Soldering parameters

| Reflow Condition                                        |                                   | Pb-Free assembly<br>(see as bellow) |
|---------------------------------------------------------|-----------------------------------|-------------------------------------|
| Pre Heat                                                | -Temperature Min ( $T_{s(min)}$ ) | +150°C                              |
|                                                         | -Temperature Max( $T_{s(max)}$ )  | +200°C                              |
|                                                         | -Time (Min to Max) ( $t_s$ )      | 60-180 secs.                        |
| Average ramp up rate (Liquid us Temp ( $T_L$ ) to peak) |                                   | 3°C/sec. Max                        |
| $T_{s(max)}$ to $T_L$ - Ramp-up Rate                    |                                   | 3°C/sec. Max                        |
| Reflow                                                  | -Temperature( $T_L$ ) (Liquid us) | +217°C                              |
|                                                         | -Temperature( $t_L$ )             | 60-150 secs.                        |
| Peak Temp ( $T_p$ )                                     |                                   | +260(+0/-5)°C                       |
| Time within 5°C of actual Peak Temp ( $t_p$ )           |                                   | 30 secs. Max                        |
| Ramp-down Rate                                          |                                   | 6°C/sec. Max                        |
| Time 25°C to Peak Temp ( $T_p$ )                        |                                   | 8 min. Max                          |
| Do not exceed                                           |                                   | +260°C                              |

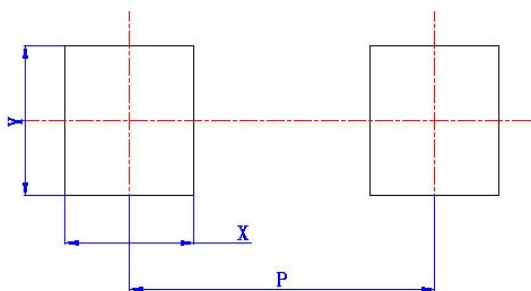


#### Package mechanical data



| Symbol   | Millimeters |      |
|----------|-------------|------|
|          | Min.        | Max. |
| A        | 0.80        | 1.05 |
| A1       | 0           | 0.1  |
| A2       | 0.8         | 0.95 |
| a        | (0.5)       |      |
| D        | 1.2         | 1.4  |
| E        | 1.6         | 1.8  |
| E1       | 2.5         | 2.75 |
| b        | 0.25        | 0.35 |
| c        | 0.08        | 0.15 |
| L        | (0.475)     |      |
| L1       | 0.25        | 0.45 |
| $\theta$ | 0°          | 8°   |

#### Suggested Land Pattern



| Symbol | Dimension in Millimeters |
|--------|--------------------------|
|        | Typ.                     |
| X      | (0.7)                    |
| Y      | (0.7)                    |
| P      | (2.3)                    |