



### FEATURES

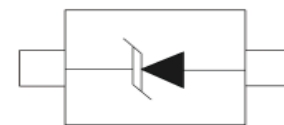
- ◇ 350 Watts peak pulse power per line ( $t_P=8/20\mu s$ )
- ◇ Protects one uni-directional I/O line
- ◇ Low clamping voltage
- ◇ Working voltage:3.3V
- ◇ Low leakage current
- ◇ RoHS compliant



SOD-323

### MAIN APPLICATIONS

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



Pin Configuration

### 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) 25A (8/20 $\mu s$ )

### MECHANICAL CHARACTERISTICS

- ◇ SOD-323 package
- ◇ Molding compound flammability rating : UL 94V-0
- ◇ Quantity per reel : 3,000pcs
- ◇ Lead finish : lead free
- ◇ Marking code : 03

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

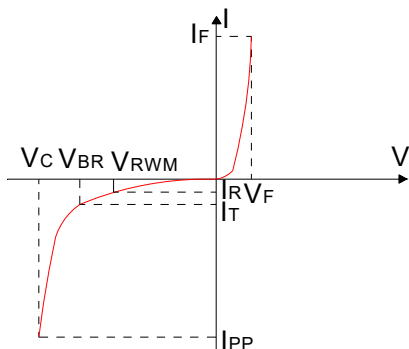
| Parameter  | Symbol    | Value            | Unit               |
|--|-----------|------------------|--------------------|
| Peak pulse power dissipation at 8/20 $\mu\text{s}$ waveform    | $P_{PP}$  | 350              | W                  |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | $V_{ESD}$ | +/- 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** ( $T_A=25^{\circ}\text{C}$ )

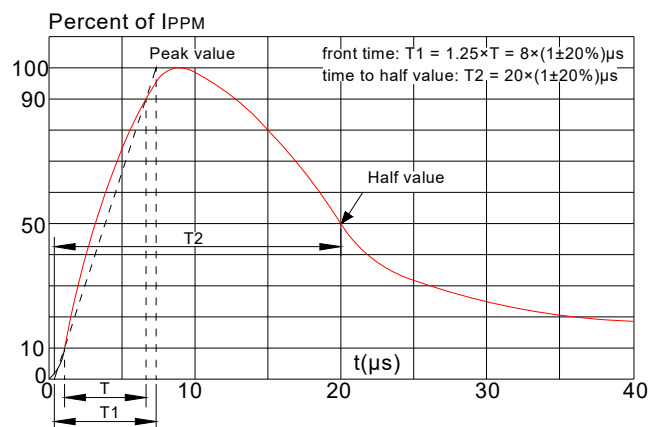
| Parameter                 | Symbol    | Conditions                                  | Min | Typ | Max | Unit          |
|---------------------------|-----------|---|-----|-----|-----|---------------|
| Reverse working voltage   | $V_{RWM}$ |   |     |     | 3.3 | V             |
| Reverse breakdown voltage | $V_{BR}$  | $I_T = 1\text{mA}$                          | 4   |     |     | V             |
| Reverse leakage current   | $I_R$     | $V_{RWM}=3.3\text{V}$                       |     | 1   | 5   | $\mu\text{A}$ |
| Peak pulse current        | $I_{PP}$  | $t_p=8/20\mu\text{s}$                       |     |     | 25  | A             |
| Clamping voltage          | $V_C$     | $I_{PP}=1\text{A}$ , $t_p=8/20\mu\text{s}$  |     | 6.5 | 8   | V             |
|                           |           | $I_{PP}=25\text{A}$ , $t_p=8/20\mu\text{s}$ |     | 10  | 15  | V             |
| Junction capacitance      | $C_J$     | $V_{RWM}=0\text{V}$ , $f=1\text{MHz}$       |     | 200 | 250 | pF            |

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

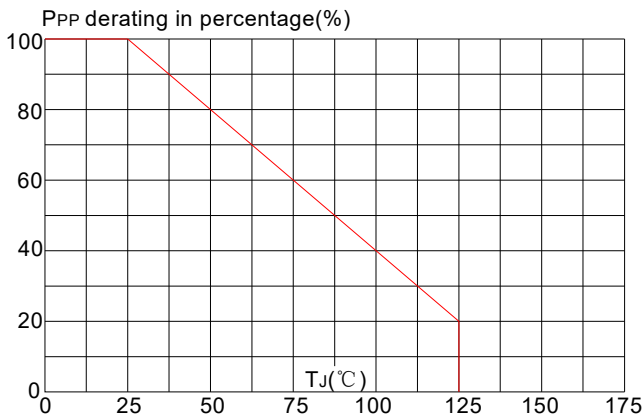
**FIG.1: V- I curve characteristics (Uni-directional)**



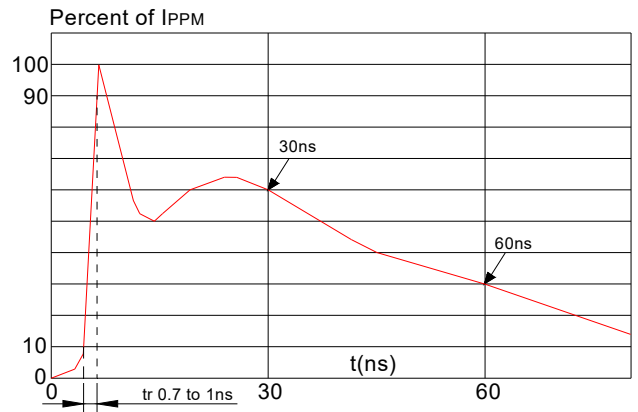
**FIG.2: Pulse waveform (8/20 $\mu\text{s}$ )**



**FIG.3: Pulse derating curve**

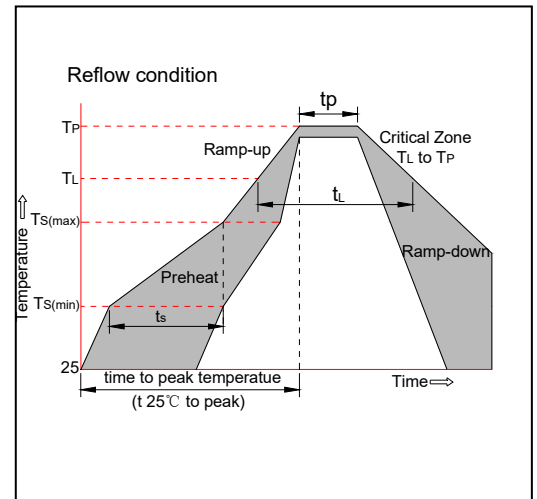


**FIG.4: ESD clamping (30kV contact)**

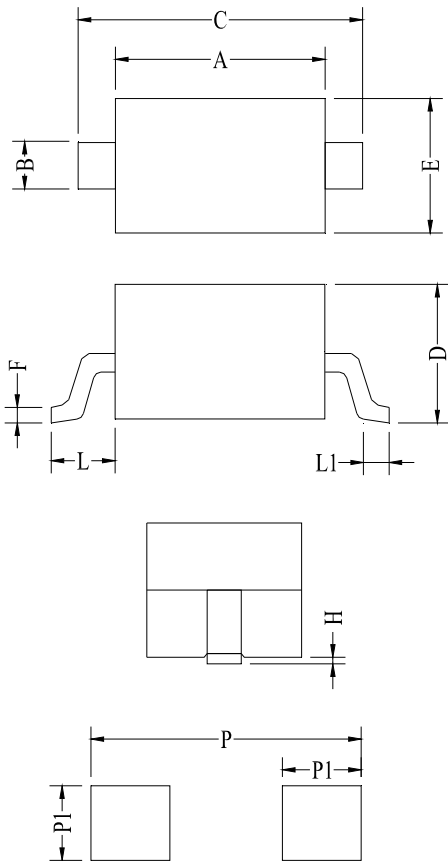


**SOLDERING PARAMETERS**

|   |   |   |
|---|---|---|
| Reflow Condition  |   | Pb-Free assembly<br>(see figure at right) |
| Pre Heat  | -Temperature Min (T <sub>s(min)</sub> ) | +150°C                                    |
|   | -Temperature Max(T <sub>s(max)</sub> )  | +200°C                                    |
|   | -Time (Min to Max) (ts)                 | 60-180 secs.                              |
| Average ramp up rate (Liquidus Temp (T <sub>L</sub> )to peak) |   | 3°C/sec. Max                              |
| T <sub>s(max)</sub> to T <sub>L</sub> - Ramp-up Rate          |   | 3°C/sec. Max                              |
| Reflow  | -Temperature(T <sub>L</sub> )(Liquidus) | +217°C                                    |
|   | -Temperature(t <sub>L</sub> )           | 60-150 secs.                              |
| Peak Temp (T <sub>p</sub> )                                   |   | +260(+0/-5)°C                             |
| Time within 5°C of actual Peak Temp (t <sub>p</sub> )         |   | 20-40secs.                                |
| Ramp-down Rate  |   | 6°C/sec. Max                              |
| Time 25°C to Peak Temp (T <sub>p</sub> )                      |   | 8 min. Max                                |
| Do not exceed   |   | +260°C                                    |



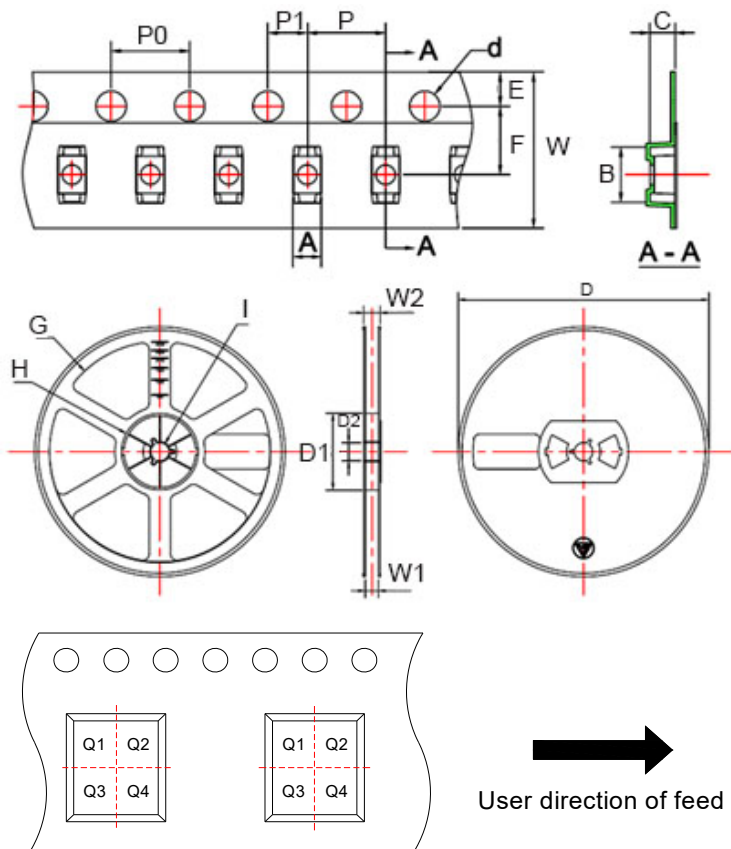
**PACKAGE MECHANICAL DATA**



**Land Pattern**

| Symbol | Millimeters |      |      | Inches   |       |       |
|--------|-------------|------|------|----------|-------|-------|
|        | Min         | Typ  | Max  | Min      | Typ   | Max   |
| A      | 1.60        | 1.70 | 1.80 | 0.063    | 0.067 | 0.071 |
| B      | 0.25        | 0.32 | 0.40 | 0.010    | 0.013 | 0.016 |
| C      | 2.30        | 2.60 | 2.80 | 0.091    | 0.102 | 0.110 |
| D      | 0.80        | 0.95 | 1.10 | 0.031    | 0.037 | 0.043 |
| E      | 1.20        | 1.30 | 1.40 | 0.047    | 0.051 | 0.055 |
| F      | 0.08        | 0.13 | 0.18 | 0.003    | 0.005 | 0.007 |
| L      | 0.475REF    |      |      | 0.019REF |       |       |
| L1     | 0.25        | 0.33 | 0.40 | 0.010    | 0.013 | 0.016 |
| H      | 0.00        | 0.06 | 0.14 | 0.000    | 0.002 | 0.006 |
| P      | 3.00        |      |      | 0.118    |       |       |
| P1     | 0.80        |      |      | 0.031    |       |       |

**TAPE AND REEL INFORMATION-SOD-323**



Pin 1 quadrant:Q1&Q2

**Packaging description:**

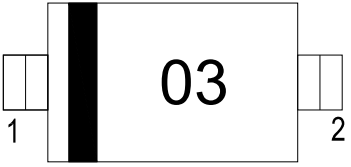
SOD-323 parts are shipped in tape. The carrier tape is made from a dissipative(carbon filled) polycarbonate resin. The cover tape is a multilayer film(heat activated adhesive in nature)primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. The reels are blue in color and made of recyclable plastic.

| Symbol | Millimeters | Inches |
|--------|-------------|--------|
|        | Typ         | Typ    |
| A      | 1.46        | 0.057  |
| B      | 2.90        | 0.114  |
| C      | 1.25        | 0.049  |
| d      | ∅1.50       | ∅0.059 |
| E      | 1.75        | 0.069  |
| F      | 3.50        | 0.138  |
| P0     | 4.00        | 0.157  |
| P      | 4.00        | 0.157  |
| P1     | 2.00        | 0.079  |
| W      | 8.00        | 0.315  |
| D      | ∅178.0      | ∅7.008 |
| D1     | 54.40       | 2.142  |
| D2     | 13.00       | 0.512  |
| G      | R78.0       | R3.071 |
| H      | R25.60      | R1.008 |
| I      | R6.50       | R0.256 |
| W1     | 9.50        | 0.374  |
| W2     | 12.30       | 0.484  |

**ORDERING INFORMATION**

| PART No. | PACKAGE TYPE | QUANTITY(PCS)<br>REEL | DESCRIPTION      |
|----------|--------------|-----------------------|------------------|
| JEU03D3  | SOD-323      | 3,000                 | 7 inch reel pack |

**MARKING CODE**

| Part Number | Marking Code   |
|-------------|--|
| JEU03D3     |  |


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