



FEATURES

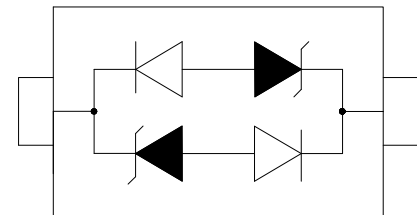
- ◇ 350 watts peak pulse power per line ($t_P=8/20\mu s$)
- ◇ Protects one bi-directional I/O line
- ◇ Low clamping voltage
- ◇ Working voltage:3.3V
- ◇ Low leakage current
- ◇ RoHS compliant



SOD-323

MAIN APPLICATIONS

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



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) 20A (8/20 μs)

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
- ◇ Marking code: CA1

ABSOLUTE MAXIMUM RATINGS (TA=25°C, RH=45%-75%, unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|--|------------------|------------------|------|
| Peak pulse power dissipation on 8/20μs waveform | P _{PP} | 350 | W |
| ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact) | V _{ESD} | +/- 30 +/- 30 | kV |
| Lead soldering temperature | T _L | 260 (10 sec.) | °C |
| Operating junction temperature range | T _J | -55 to +125 | °C |
| Storage temperature range | T _{STG} | -55 to +150 | °C |

ELECTRICAL CHARACTERISTICS (TA=25°C)

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---------------------------|------------------|--|-----|-----|------|------|
| Reverse working voltage | V _{RWM} | | | | 3.3 | V |
| Reverse breakdown voltage | V _{BR} | I _T =1mA | 3.6 | | | V |
| Reverse leakage current | I _R | V _{RWM} =3.3V | | | 0.1 | μA |
| Clamping voltage | V _C | I _{PP} =1A, t _p =8/20μs | | | 6.5 | V |
| | | I _{PP} =10A, t _p =8/20μs | | | 12 | V |
| | | I _{PP} =20A, t _p =8/20μs | | | 17.5 | V |
| Junction capacitance | C _J | V _{RWM} =0V, f=1MHz | | 1.0 | 1.5 | pF |

RATINGS AND V-I CHARACTERISTICS CURVES (TA=25°C, unless otherwise noted)

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

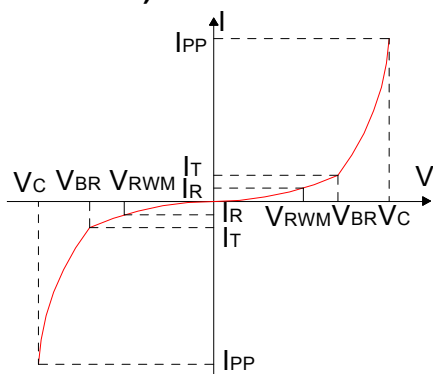


FIG.2: Pulse waveform (8/20μs)

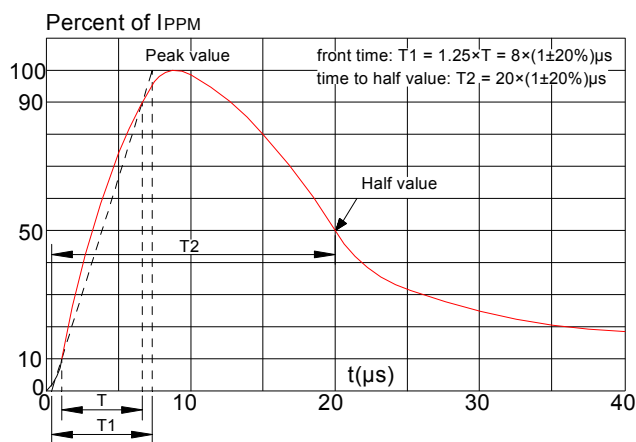


FIG.3: Pulse derating curve

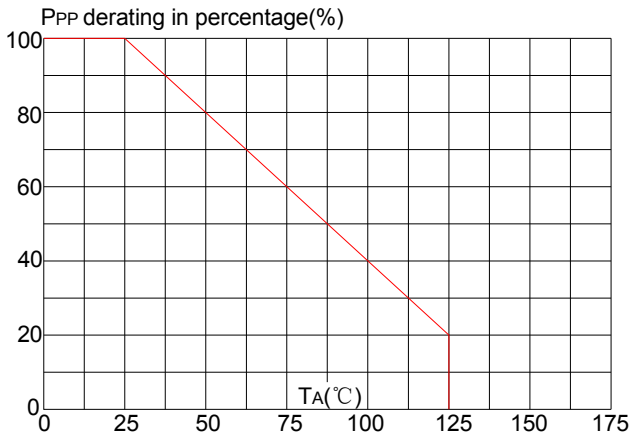
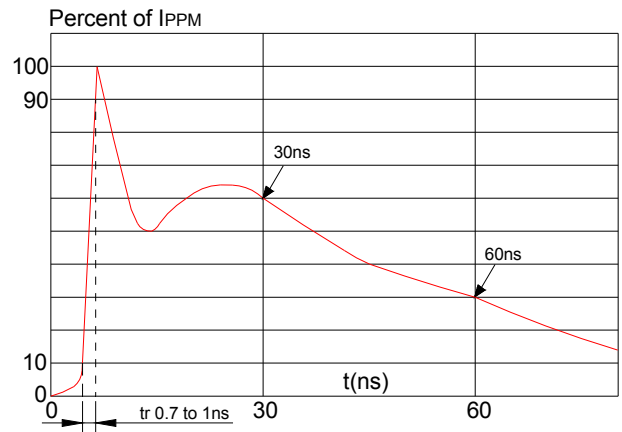
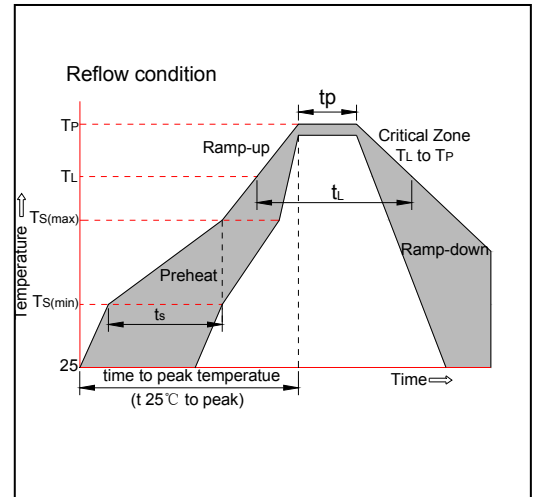


FIG.4: ESD clamping (30kV contact)

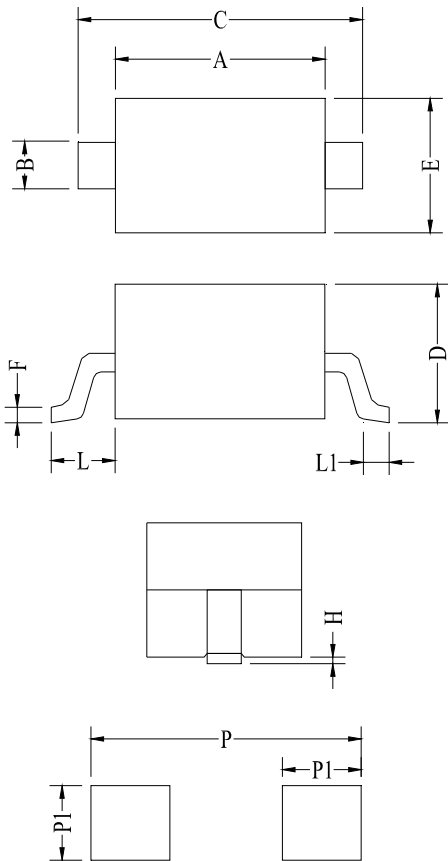


SOLDERING PARAMETERS

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



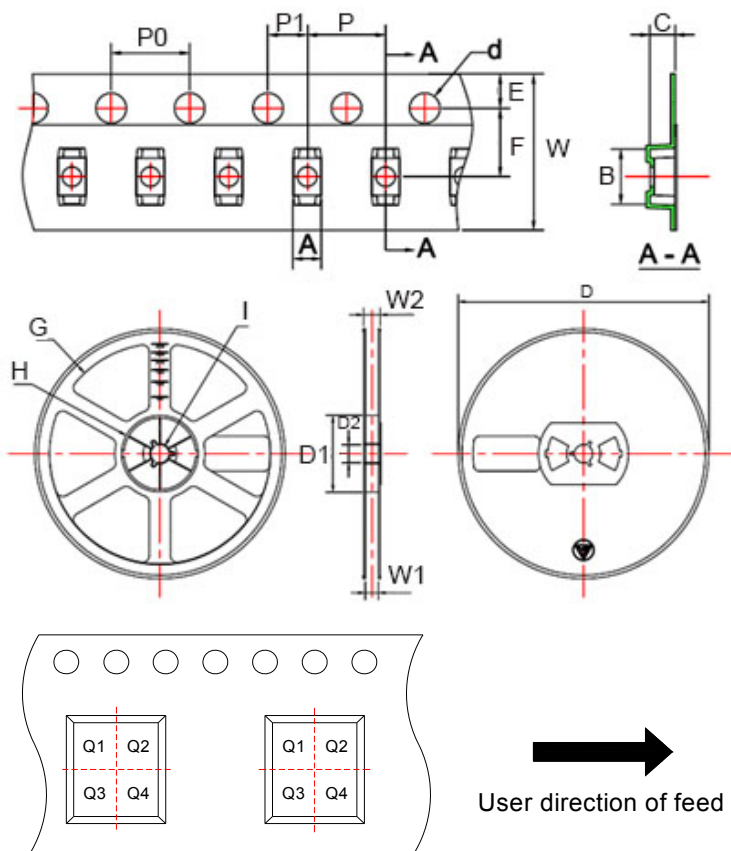
PACKAGE MECHANICAL DATA



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:

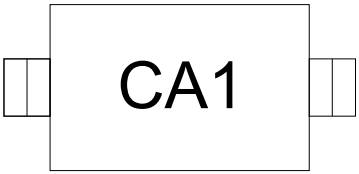
SOD-323 parts are shipped in tape. The carrier tape is made from a dissipative(carbon filled) polycarbonate resin. The cover tape is a multilayer film(heat activated adhesive in nature)primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. The reels are blue in 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 | ø1.50 | ø0.059 |
| 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 | ø178.0 | ø7.008 |
| 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) REEL | DESCRIPTION |
|----------|--------------|--------------------|------------------|
| JEB03CX | SOD-323 | 3,000 | 7 inch reel pack |

MARKING CODE

| Part Number | Marking Code |
|-------------|--|
| JEB03CX |  |

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