

FEATURES

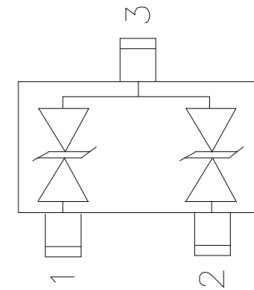
- ◇ 360 watts peak pulse power per line ($t_P=8/20\mu s$)
- ◇ Protect for two I/O lines with bi-directional
- ◇ Low clamping voltage
- ◇ Working voltages:5V
- ◇ Low leakage current
- ◇ RoHS compliant



SOT-23

MAIN APPLICATIONS

- ◇ RS-232, RS-422 & RS-485
- ◇ Servers, notebook, and desktop
- ◇ Cellular handsets and accessories
- ◇ Control & monitoring systems
- ◇ Portable electronics
- ◇ Wireless bus protection
- ◇ Set-top box



PIN Configuration

PROTECTION SOLUTION TO MEET

- ◇ IEC61000-4-2 (ESD) $\pm 30kV$ (air), $\pm 30kV$ (contact)

MECHANICAL CHARACTERISTICS

- ◇ SOT-23 package
- ◇ Molding compound flammability rating: UL 94V-0
- ◇ Weight 8 milligrams (approximate)
- ◇ Quantity per reel: 3,000 pcs
- ◇ Reel size: 7 inch
- ◇ Lead finish: lead free
- ◇ Marking code: M05C

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 μs waveform | P_{PP} | 360 | 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.) | $^{\circ}\text{C}$ |
| 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} | | | | 5 | V |
| Reverse breakdown voltage | V_{BR} | $I_T=1\text{mA}$ | 5.5 | | 8.5 | V |
| Reverse leakage current | I_R | $V_{RWM}=5\text{V}$ | | | 1.0 | μA |
| Clamping voltage (pin1 to pin3, pin2 to pin3) | V_C | $I_{PP}^{\textcircled{1}}=1\text{A}$, $t_P=8/20\mu\text{s}$ | | | 10 | V |
| | | $I_{PP}^{\textcircled{1}}=30\text{A}$, $t_P=8/20\mu\text{s}$ | | | 12 | V |
| Junction capacitance | $C_J^{\textcircled{2}}$ | $V_{RWM}=0\text{V}$, $f=1\text{MHz}$ | | 60 | | pF |
| Junction capacitance | $C_J^{\textcircled{3}}$ | $V_{RWM}=0\text{V}$, $f=1\text{MHz}$ | | 30 | | pF |

① Surge waveform: 8/20 μs

② C_J measured @ $V_{RWM}=0\text{V}$, 1MHz (pin1 to pin3, pin2 to pin3)

③ C_J measured @ $V_{RWM}=0\text{V}$, 1MHz (pin1 to pin2, pin2 to pin1)

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

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

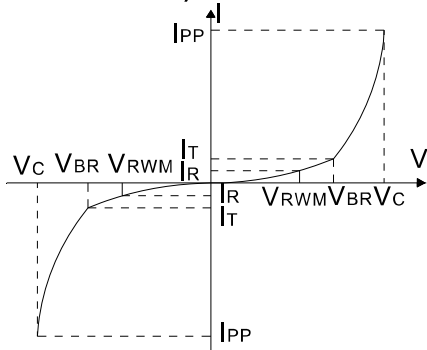


FIG.2: Pulse waveform (8/20 μs)

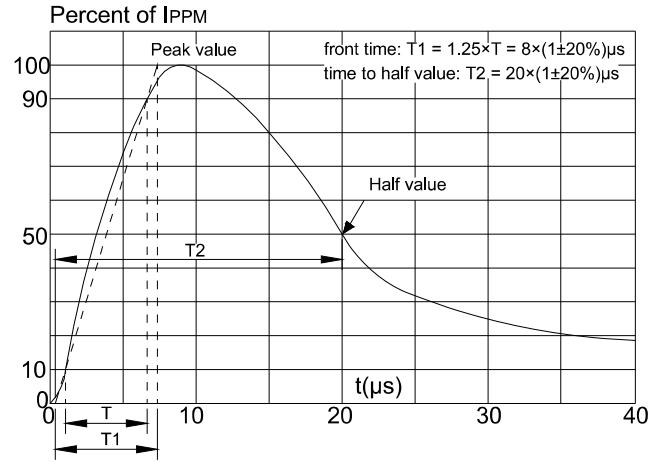


FIG.3: Pulse derating curve

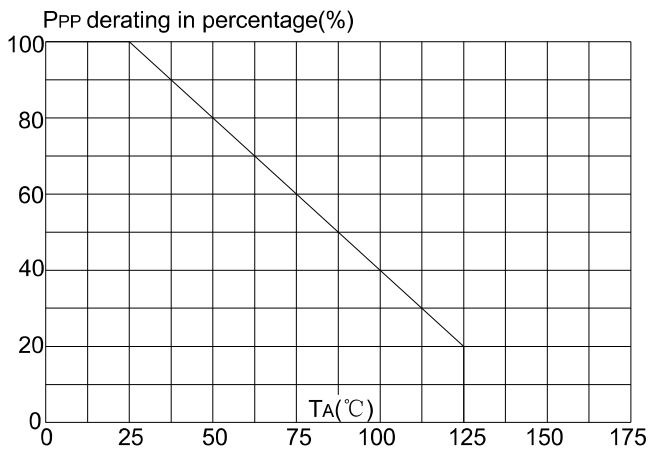
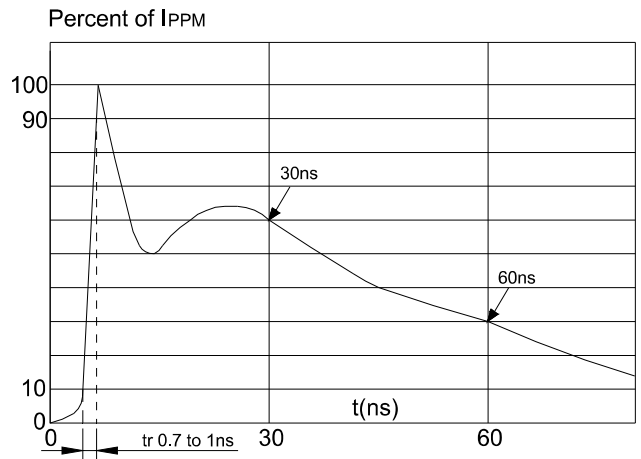
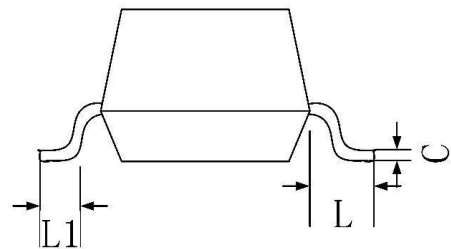
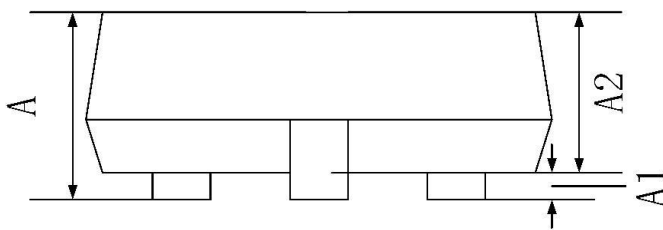
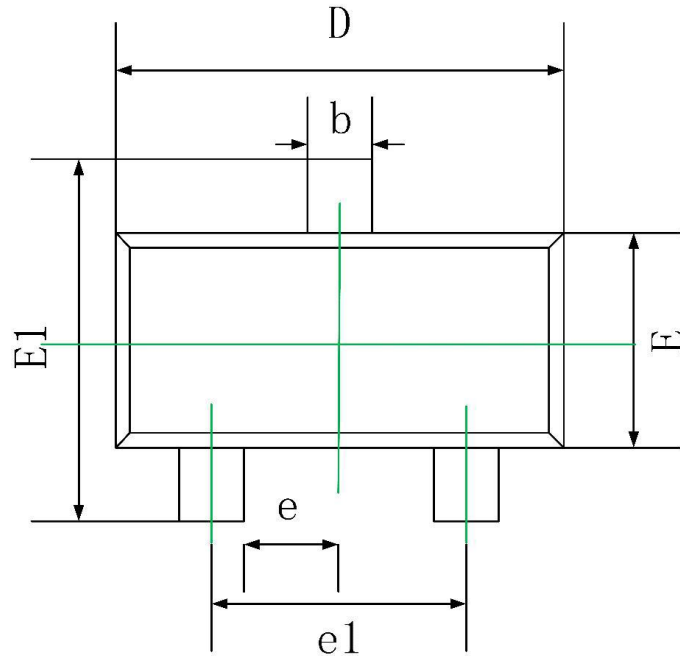


FIG.4: ESD clamping (30kV contact)



SOT-23 Package Information



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|-------|----------------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 0.900 | 1.150 | 0.035 | 0.045 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.050 | 0.035 | 0.041 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.800 | 3.000 | 0.110 | 0.118 |
| E | 1.200 | 1.400 | 0.047 | 0.055 |
| E1 | 2.250 | 2.550 | 0.089 | 0.100 |
| e | 0.950 TYP. | | 0.037 TYP. | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.550 REF. | | 0.022 REF. | |
| L1 | 0.300 | 0.500 | 0.012 | 0.020 |