

FEATURES

- ✧ 350 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 :24V
- ✧ Low leakage current
- ✧ RoHS compliant
- ✧ Compliant to Halogen-free
- ✧ Suffix"-Q1" for AEC-Q101

MAIN APPLICATIONS

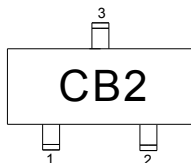
- ✧ RS-232, RS-422 & RS-485
- ✧ Servers, notebook, and desktop
- ✧ Cellular handsets and accessories
- ✧ Control & monitoring systems
- ✧ Portable electronics
- ✧ Wireless bus protection
- ✧ Set-top box
- ✧ ESD protection for In-vehicle network lines in automotive environments: CAN and CAN-FD

PROTECTION SOLUTION TO MEET

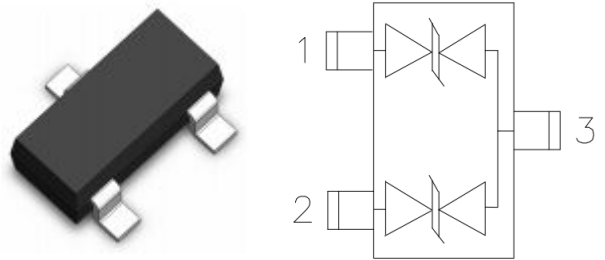
- ✧ IEC61000-4-2 (ESD) $\pm 30kV$ (air), $\pm 30kV$ (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ IEC61000-4-5 (Lightning) 6A(8/20 μs)

MECHANICAL CHARACTERISTICS

- ✧ SOT-23 package
- ✧ Molding compound flammability rating : UL 94V-0
- ✧ Lead finish : lead free
- ✧ Marking code: CB2



Pin Configuration



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

| Parameter | Symbol | Value | Unit |
|--|-----------|------------------|--------------------|
| Peak pulse power dissipation on 8/20 μs 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.) | $^{\circ}\text{C}$ |
| Operating junction temperature range | T_J | -55 to +150 | $^{\circ}\text{C}$ |
| 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} | | | | 24 | V |
| Reverse breakdown voltage | V_{BR} | $I_T = 1\text{mA}$ | 26.7 | | | V |
| Reverse leakage current | I_R | $V_{RWM} = 24\text{V}$ | | | 1 | μA |
| Clamping voltage | V_C | $I_{PP}^{\text{①}} = 1\text{A}$, $t_p = 8/20\mu\text{s}$ | | | 43 | V |
| | | $I_{PP}^{\text{①}} = 6\text{A}$, $t_p = 8/20\mu\text{s}$ | | | 60 | V |
| Junction capacitance | $C_J^{\text{②}}$ | $V_{RWM} = 0\text{V}$, $f = 1\text{MHz}$ | | 15 | 30 | pF |

① Surge waveform: 8/20 μs

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

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

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

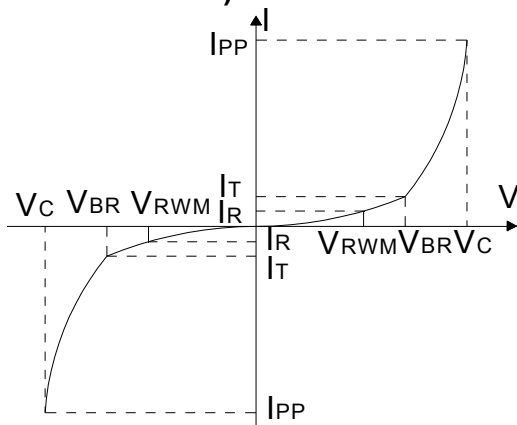


FIG.2: Pulse waveform (8/20 μs)

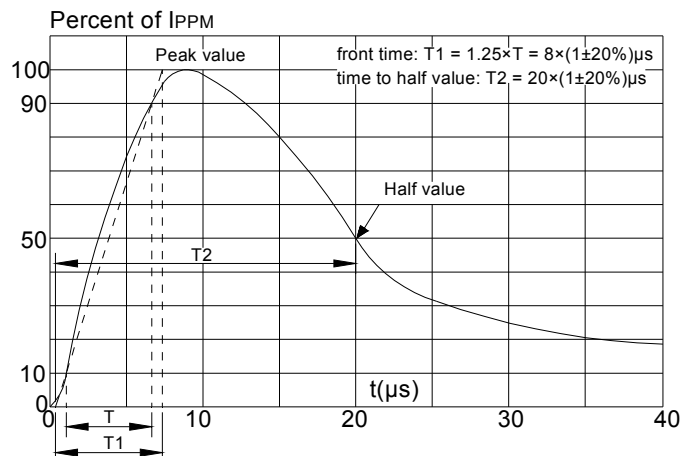


FIG.3: Pulse derating curve

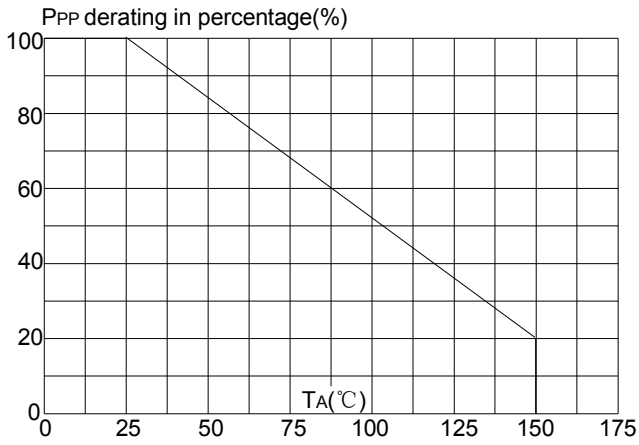
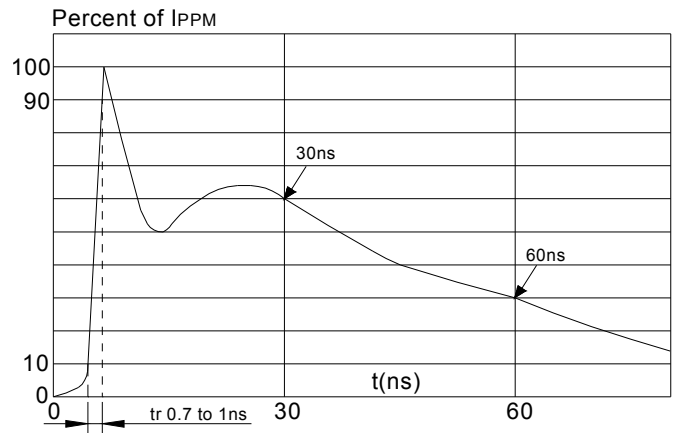
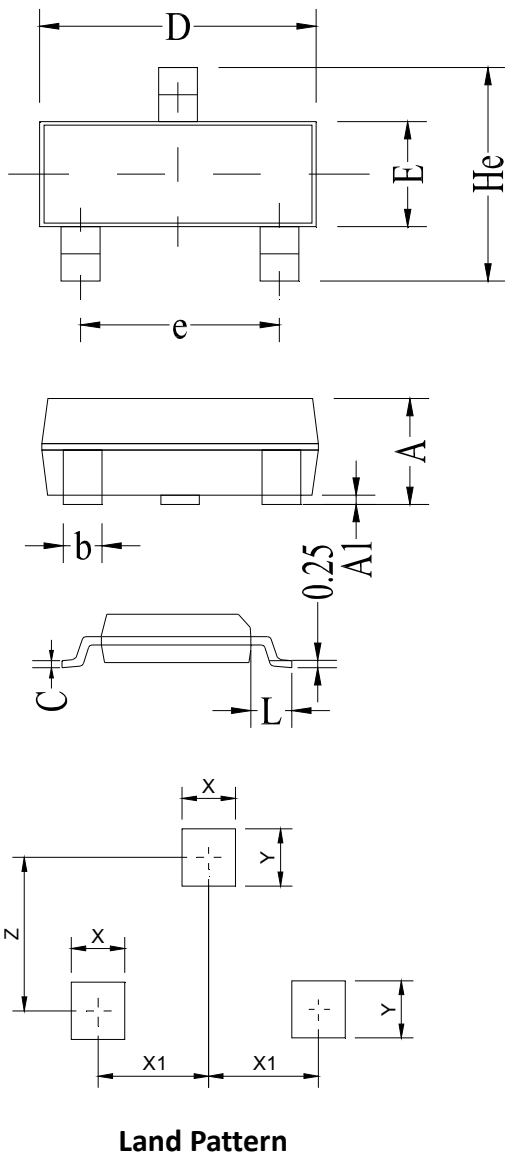


FIG.4: ESD clamping (30KV contact)



PACKAGE MECHANICAL DATA



| Symbol | Millimeter | | Inches | |
|--------|------------|------|--------|-------|
| | Min | Max | Min | Max |
| A | 0.9 | 1.15 | 0.035 | 0.045 |
| A1 | 0.00 | 0.10 | 0.000 | 0.004 |
| b | 0.30 | 0.50 | 0.012 | 0.020 |
| C | 0.08 | 0.25 | 0.003 | 0.01 |
| D | 2.8 | 3.0 | 0.11 | 0.118 |
| e | 1.8 | 2.0 | 0.071 | 0.079 |
| E | 1.2 | 1.4 | 0.047 | 0.055 |
| L | 0.40 | 0.70 | 0.016 | 0.028 |
| He | 2.25 | 2.55 | 0.089 | 0.1 |
| X | 0.8 | | 0.0315 | |
| X1 | 0.95 | | 0.037 | |
| Y | 0.80 | | 0.0315 | |
| Z | 2.02 | | 0.0795 | |