

### 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: 15V
- ✧ 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

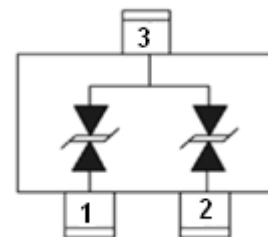
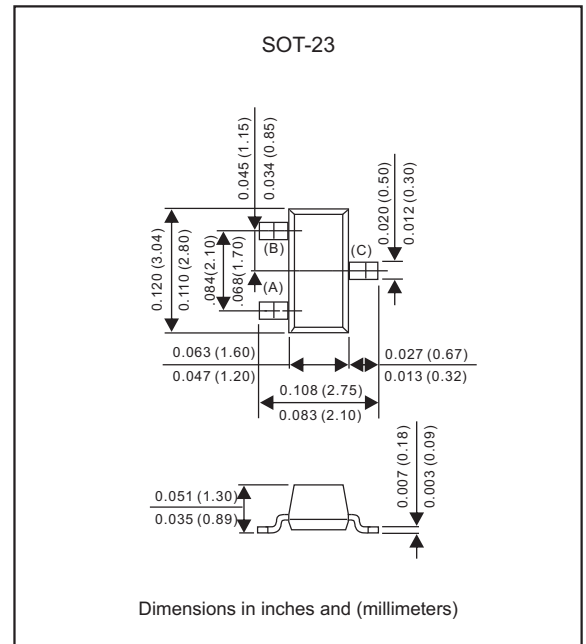
### PROTECTION SOLUTION TO MEET

- ✧ IEC61000-4-2 (ESD)  $\pm 15kV$  (air),  $\pm 8kV$  (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ IEC61000-4-5 (Lightning) 10A (8/20 $\mu s$ )

### MECHANICAL CHARACTERISTICS

- ✧ SOT-23 package
- ✧ Molding compound flammability rating : UL 94V-0
- ✧ Quantity per reel : 3,000pcs
- ✧ Lead finish : lead free
- ✧ Marking code: BB2

### Package outline



PIN Configuration

### 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 $\mu\text{s}$ waveform | $P_{PP}$  | 350           | W                  |
| ESD per IEC 61000-4-2 (Air)                                 | $V_{ESD}$ | +/- 15        | kV                 |
| ESD per IEC 61000-4-2 (Contact)                             |           | +/- 8         |                    |
| 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 ( $T_A=25^{\circ}\text{C}$ )

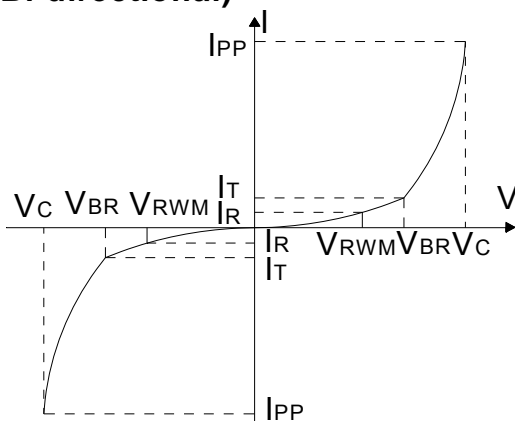
| Parameter                 | Symbol      | Conditions  | Min  | Typ | Max | Unit          |
|---------------------------|-------------|---|------|-----|-----|---------------|
| Reverse working voltage   | $V_{RWM}$   |   |      |     | 15  | V             |
| Reverse breakdown voltage | $V_{BR}$    | $I_T = 1\text{mA}$                                    | 16.7 |     |     | V             |
| Reverse leakage current   | $I_R$       | $V_{RWM} = 15\text{V}$                                |      |     | 1   | $\mu\text{A}$ |
| Clamping voltage          | $V_C$       | $I_{PP}^{(1)} = 1\text{A}$ , $t_p = 8/20\mu\text{s}$  |      |     | 24  | V             |
|                           |             | $I_{PP}^{(1)} = 10\text{A}$ , $t_p = 8/20\mu\text{s}$ |      |     | 35  | V             |
| Junction capacitance      | $C_J^{(2)}$ | $V_{RWM} = 0\text{V}$ , $f = 1\text{MHz}$             |      | 25  |     | pF            |

② Surge waveform: 8/20 $\mu\text{s}$

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 $\mu\text{s}$ )**

