



**2-Line Bidirectional ESD Protection Diode**

**SOT23**

**Schematic & Pin configuration**

| Circuit diagram     | Pinning                                                  |
|---------------------|----------------------------------------------------------|
| <p>Marking: tAN</p> | <p>PIN1 Lines 1<br/>PIN2 Lines 2<br/>PIN3 common pin</p> |

**General description**

These dual monolithic silicon surge protection diodes are designed for applications requiring transient overvoltage protection capability. They are intended for use in voltage and ESD sensitive equipment, as computers, printers, business machines, communication systems, medical equipment and other applications. Their bi-directional double ESD design protects two separate lines using only one package. These devices are ideal for situations where board space is at a premium.

**Features and benefits**

- Bi-directional ESD protection of 2 lines
- Reverse stand-off voltage: 24.0V Max
- Low clamping voltage
- Low leakage current: nA Level
- Response time is typically <1 ns
- ESD Protection: 20kV(air)/15kV(contact)(IEC61000-4-2)

**Application information**

- ADAS Control Units CAN Bus
  - PowerTrain Control Units
  - Electronic Control Units
- Factory Automation
- Body Control Units
- Lightning Control (DALI)

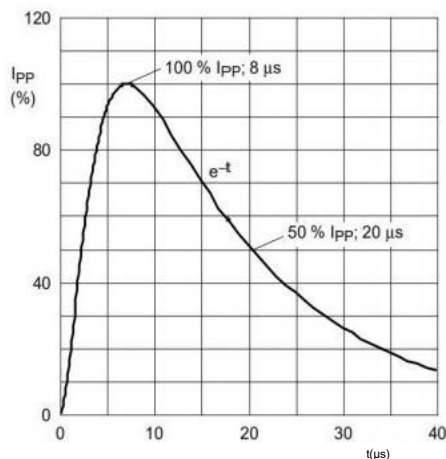
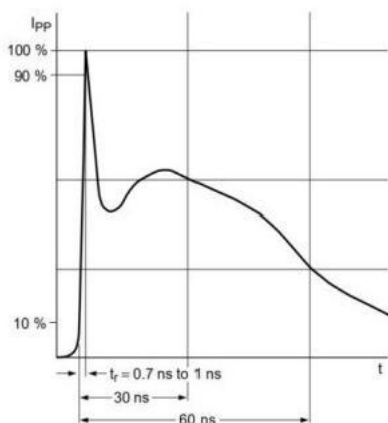
## Maximum Ratings (Top=25 C,unless otherwise specified)

| Parameter                                         | Symbol | Value       | Unit |
|---------------------------------------------------|--------|-------------|------|
| Peak Pulse Power (tp=8/20 μ s)                    | PPPM   | 160         | W    |
| Peak Pulse Current (tp=8/20 μ s)                  | IppM   | 4           | A    |
| Maximum lead temperature for soldering during 10s | TL     | 260         | ° °C |
| Storage Temperature Range                         | Tstg   | -55 to +150 | °C   |
| Operating Temperature Range                       | Top    | -40 to +125 | ° °C |
| Maximum junction temperature                      | Tj     | 150         | °C   |
| ESD voltage IEC 61000-4-2 (air discharge)         | VesD   | 20          | kV   |
| ESD voltage IEC 61000-4-2 (contact discharge)     | VESD   | 15          | kV   |

## Electrical Characteristics (Top=25C,unless otherwise specified)

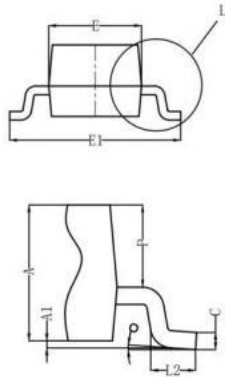
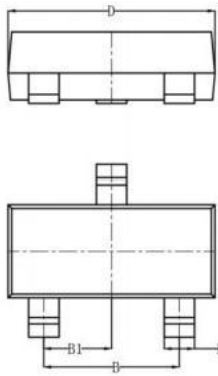
| Parameter                         | Symbol         | Min  | Typ      | Max      | Unit | Condition                                                                               |
|-----------------------------------|----------------|------|----------|----------|------|-----------------------------------------------------------------------------------------|
| Reverse Working Voltage           | VRWM           |      |          | 24.0     | V    |                                                                                         |
| Breakdown Voltage                 | VBR            | 26.7 |          | 32       | V    | I <sub>r</sub> =1mA                                                                     |
| Leakage Current I <sub>Leak</sub> | I <sub>r</sub> |      |          | 100      | nA   | VR <sub>WM</sub> =24V                                                                   |
| Clamping Voltage                  | V <sub>c</sub> |      | 35<br>38 | 38<br>40 | V    | I <sub>pp</sub> =4A, T <sub>p</sub> =8/20 μ s<br>(Pin 1 or 2 to 3)<br>(Pin 3 to 2 or 1) |
| Junction Capacitance              | C              |      | 10       | 12       | pF   | VR=0V, f=1MHz<br>(Pin 1 or 2 to 3)<br>(Pin 3 to 2 or 1)                                 |
|                                   |                |      | 5.0      | 6.0      | pF   | VR=24V. f=1MH7<br>(Pin 1 or 2 to 3)<br>(Pin 3 to 2 or 1)                                |

## Typical Characteristics



## Package Outline Dimensions

### SOT23



| Symbol | Dimensions (mm) |       |        |
|--------|-----------------|-------|--------|
|        | Min             | Typ   | Max    |
| A      | 0.900           | 1.000 | 1.1100 |
| A1     | 0.000           | 0.050 | 0.100  |
| L1     | 0.350           | 0.400 | 0.500  |
| C      | 0.100           | 0.110 | 0.120  |
| D      | 2.800           | 2.900 | 3.000  |
| E      | 1.250           | 1.300 | 1.350  |
| E1     | 2.250           | 2.400 | 2.550  |
| B      | 1.800           | 1.900 | 2.000  |
| B1     | 0.950 Typ       |       |        |
| L2     | 0.200           | 0.350 | 0.450  |
| P      | 0.550           | 0.575 | 0.600  |