

## ESD24VAPB

### Description

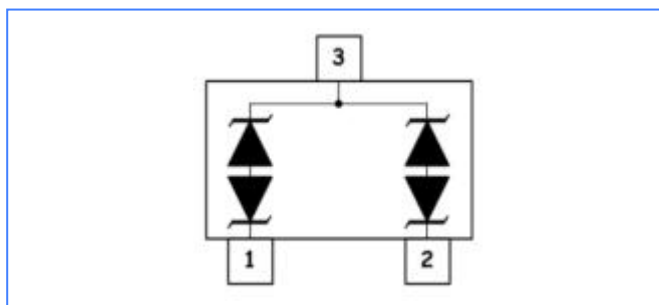
ESD24VAPB is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium.

### Features

- Ultra low leakage
- Operating voltage: 24V
- Package: SOT-23
- Protects two bidirectional line
- Low clamping voltage
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 15\text{kV}$
    - Contact discharge:  $\pm 8\text{kV}$
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) 5A (8/20 $\mu\text{s}$ )



### Functional Diagram



### Applications

- Portable Electronics
- Cellular Handsets and Accessories
- Industrial Controls
- Portable instrumentation
- Set-Top Box
- Peripherals

### Absolute Maximum Ratings( $T_{\text{amb}}=25^{\circ}\text{C}$ unless otherwise specified)

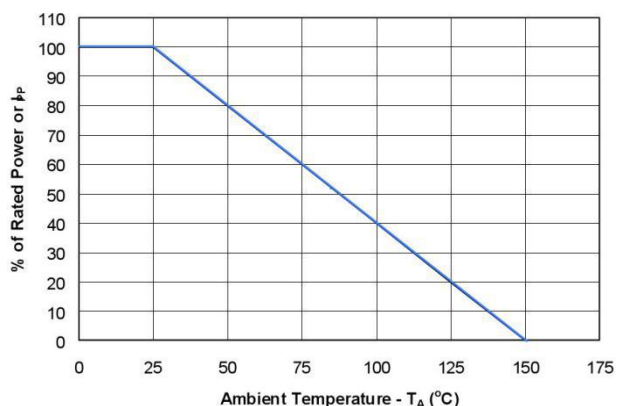
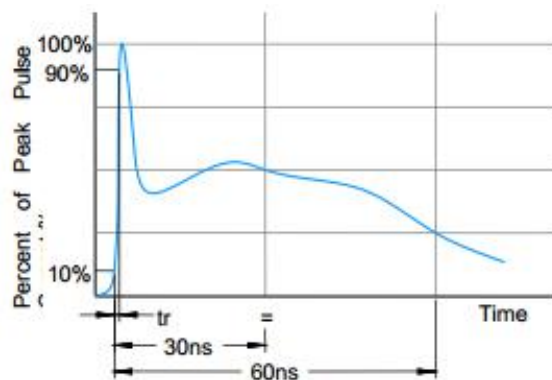
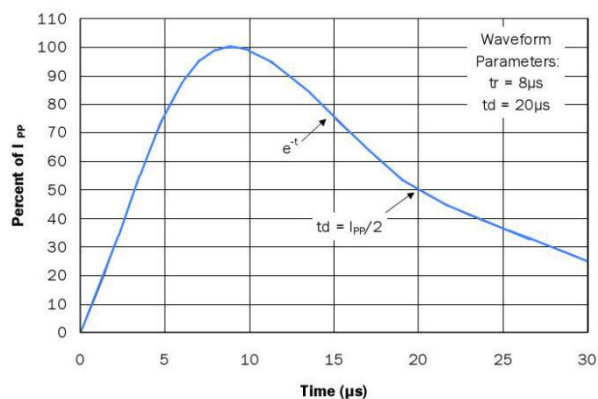
| Parameter                              | Symbol           | Value        | Unit               |
|----------------------------------------|------------------|--------------|--------------------|
| Peak Pulse Power (8/20 $\mu\text{s}$ ) | $P_{\text{PP}}$  | 300          | Watts              |
| ESD per IEC 61000-4-2 (Air)            | $V_{\text{ESD}}$ | $\pm 15$     | KV                 |
| ESD per IEC 61000-4-2 (Contact)        |                  | $\pm 8$      | KV                 |
| Lead Soldering Temperature             | $T_{\text{L}}$   | 260 (10 sec) | $^{\circ}\text{C}$ |
| Operating Temperature Range            | $T_{\text{J}}$   | -55 to +150  | $^{\circ}\text{C}$ |
| Storage Temperature Range              | $T_{\text{STJ}}$ | -55 to +150  | $^{\circ}\text{C}$ |

## Electrical Characteristics (TA = 25 °C unless otherwise noted)

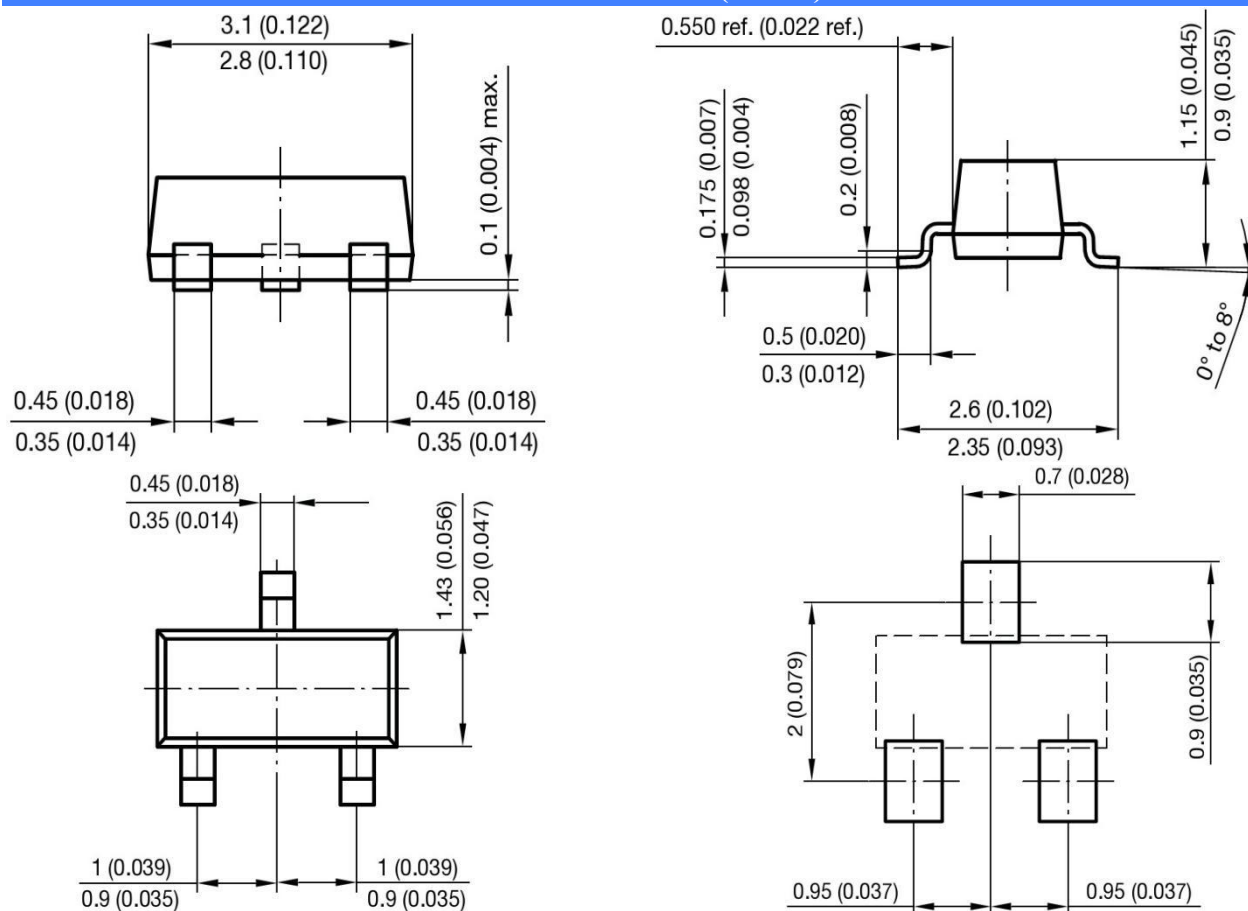
| Parameter                 | Symbol    | Conditions         | Min. | Typ. | Max. | Units   |
|---------------------------|-----------|--------------------|------|------|------|---------|
| Reverse Stand-off Voltage | $V_{RWM}$ |                    |      |      | 24   | V       |
| Reverse Breakdown Voltage | $V_{BR}$  | $I_t = 1mA$        | 27   |      |      | V       |
| Reverse Leakage Current   | $I_R$     | $V_R = V_{RWM}$    |      |      | 1    | $\mu A$ |
| Clamping Voltage          | $V_C$     | @1A                |      |      | 40   | V       |
|                           |           | @5A                |      |      | 45   | V       |
| Junction Capacitance      | $C_J$     | $V_R=0V, f = 1MHz$ |      | 25   |      | pF      |

## Characteristics Curves

Figure 1- Power Derating Curve


Figure 2- ESD Pulse Waveform  
(according to IEC 61000-4-2)

Figure3- 8/20 $\mu s$  Pulse Waveform


### PACKAGE OUTLINE DIMENSIONS in millimeters (inches) :SOT-23



## Mounting Pad Layout

## Disclaimer

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.