

## Transient Voltage Suppressors

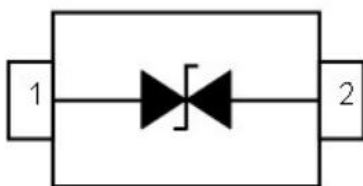
### DESCRIPTION

The JESD5Z12VC 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. Because of its small size, it is suited for use in cellular phones, portable devices, digital cameras, power supplies and many other portable applications.

### ORDERING INFORMATION

- ◇Device: JESD5Z12VC
- ◇Package: SOD-523
- ◇Material: Halogen free
- ◇Packing: Tape & Reel
- ◇Quantity per reel: 3,000pcs

### PIN CONFIGURATION



### FEATURES

- ◇IEC61000-4-2 Level 4 ESD Protection
- ◇Protects one directional Vcc or dateline
- ◇Low clamping voltage
- ◇Working voltages : 12V
- ◇Low leakage current

### MACHANICAL DATA

- ◇SOD-523 package
- ◇Flammability Rating: UL 94V-0
- ◇Packaging: Tape and Reel
- ◇High temperature soldering guaranted:260°C/10s
- ◇Reel size: 7 inch

### APPLICATIONS

- ◇Cell Phone Handsets and Accessories
- ◇Microprocessor based equipment
- ◇Personal Digital Assistants (PDA's)
- ◇Notebooks, Desktops, and Servers
- ◇Portable Instrumentation
- ◇Peripherals
- ◇Pagers

### PACKAGE OUTLINE



**ABSOLUTE MAXIMUM RATING**

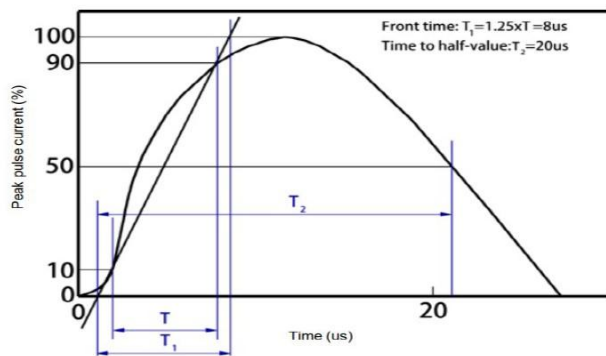
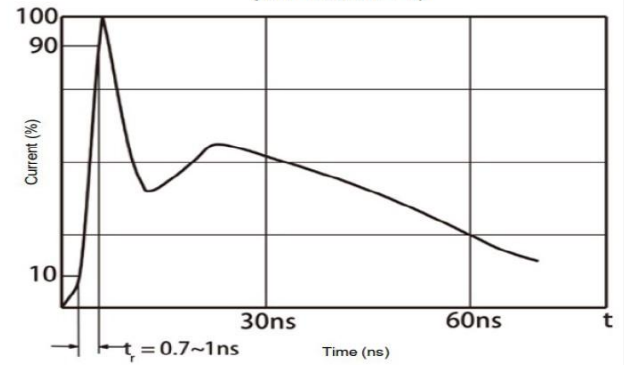
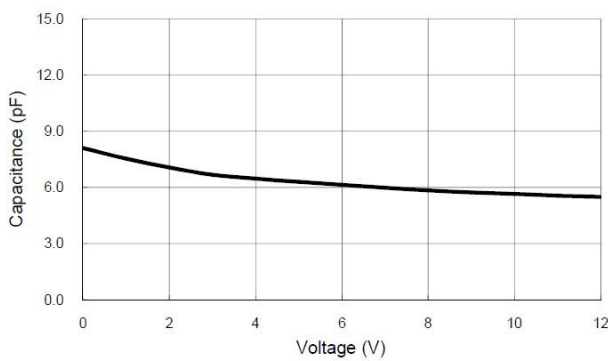
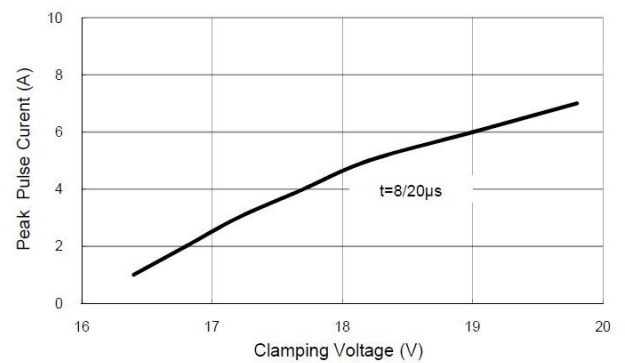
| Symbol         | Parameter                                                               | Value                | Units            |
|----------------|-------------------------------------------------------------------------|----------------------|------------------|
| $V_{ESD}$      | ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact)          | $\pm 30$<br>$\pm 30$ | kV               |
| $P_D$          | Total Power Dissipation on FR-5 Board (Note 1) @ $T_a=25^\circ\text{C}$ | 150                  | mW               |
| $T_J, T_{STG}$ | Junction and Storage Temperature                                        | -55/+150             | $^\circ\text{C}$ |
| $T_L$          | Lead Solder Temperature – Maximum (10 Second Duration)                  | 260                  | $^\circ\text{C}$ |

These ratings are limiting values above which the serviceability of the diode may be impaired

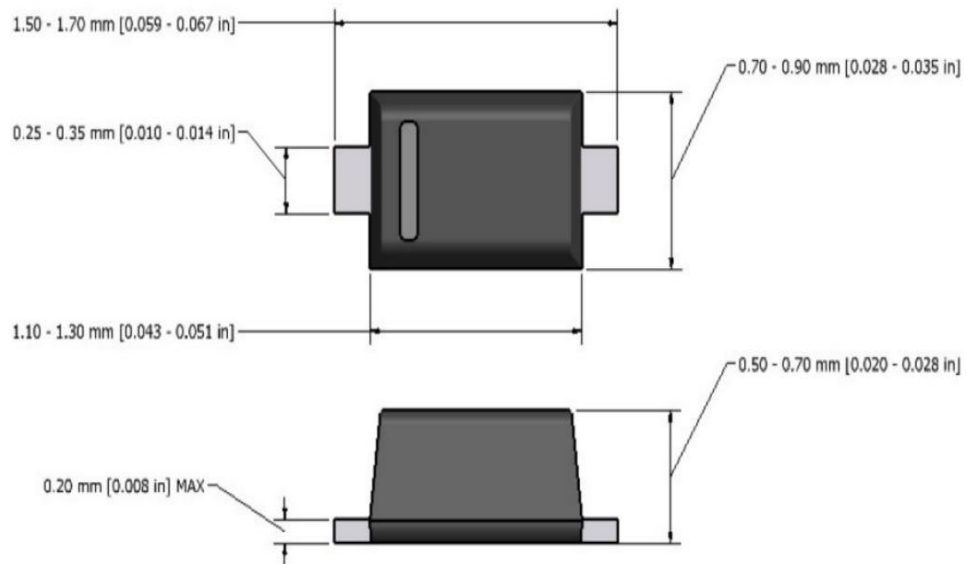
Note 1. FR-5=1.0x0.75x0.62 in.

**ELECTRICAL CHARACTERISTICS ( $T_{amb}=25^\circ\text{C}$ )**

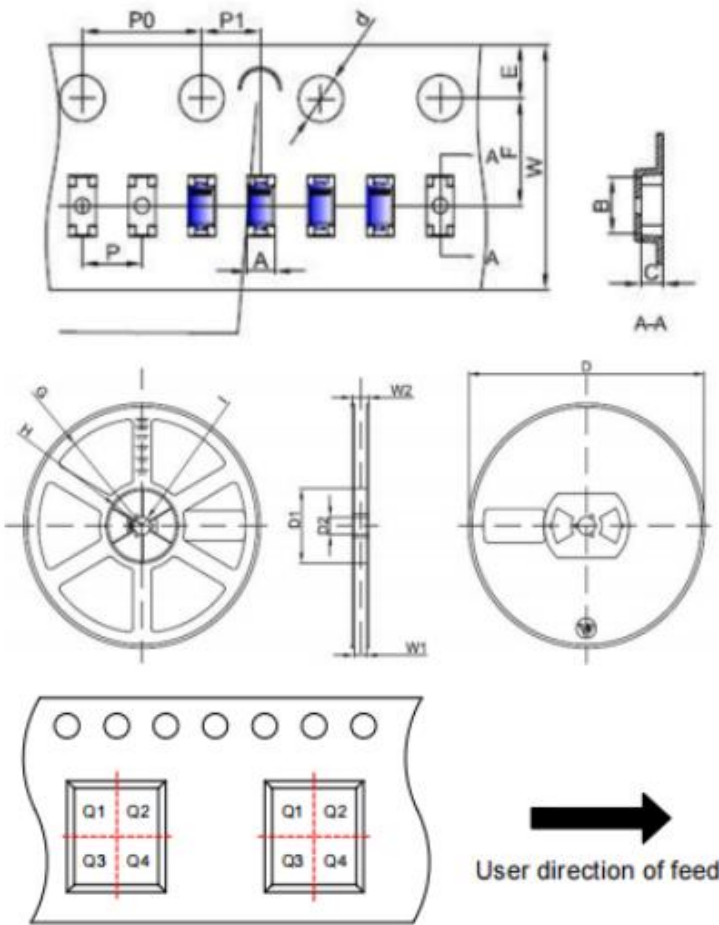
| Symbol    | Parameter                 | Test Condition                              | Min  | Typ | Max | Units         |
|-----------|---------------------------|---------------------------------------------|------|-----|-----|---------------|
| $V_{RWM}$ | Reverse Working Voltage   |                                             |      |     | 12  | V             |
| $V_{BR}$  | Reverse Breakdown Voltage | $I_T = 1\text{mA}$                          | 13.3 |     |     | V             |
| $I_R$     | Reverse Leakage Current   | $V_{RWM} = 12\text{V}$                      |      |     | 1.0 | $\mu\text{A}$ |
| $V_C$     | Clamping Voltage          | $I_{PP} = 1\text{A}, t_p = 8/20\mu\text{s}$ |      |     | 19  | V             |
| $V_C$     | Clamping Voltage          | $I_{PP} = 6\text{A}, t_p = 8/20\mu\text{s}$ |      |     | 25  | V             |
| $C_J$     | Junction Capacitance      | $V_R = 0\text{V}, f = 1\text{MHz}$          |      | 8   | 15  | pF            |

**ELECTRICAL CHARACTERISTICS CURVE**
**Fig 1 8/20 $\mu$ s Waveform per IEC61000-4-5**

**Fig 2 Contact Discharge Current Waveform per IEC 61000-4-2)**

**Fig 3 Voltage vs Capacitance**

**Fig 4 Clamping Voltage vs Peak Pulse Current**


**SOD-523 PACKAGE OUTLINE DIMENSIONS**



**Note:** Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.

**TAPE AND REEL SPECIFICATION-SOD-523**


Pin 1 quadrant: Q1&amp;Q2

**Packaging Description:**

SOD-523 parts are shipped in tape. The carrier tape is made from a dissipative(carbon filled) polycarbonate resin. The cover tape is a multilayer film(heat activated adhesive in nature)primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 5,000 or 8,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and made of polystyrene plastic(anti-static coated).

| Symbol | Millimeters | Inches |
|--------|-------------|--------|
|        | Typ.        | Typ.   |
| A      | 0.95        | 0.037  |
| B      | 1.92        | 0.076  |
| C      | 0.73        | 0.029  |
| d      | Φ1.50       | Φ0.059 |
| E      | 1.75        | 0.069  |
| F      | 3.50        | 0.138  |
| P0     | 4.00        | 0.157  |
| P      | 2.00        | 0.079  |
| P1     | 2.00        | 0.079  |
| W      | 8.00        | 0.315  |
| D      | Φ178        | Φ7.008 |
| D1     | 54.40       | 2.142  |
| D2     | 13.00       | 0.512  |
| G      | R78.00      | R3.071 |
| H      | R25.60      | R1.008 |
| I      | R6.50       | R0.256 |
| W1     | 9.50        | 0.374  |
| W2     | 12.30       | 0.484  |