

### Features

- Low operating voltage: 3.3V
- Ultra low capacitance: 200pF
- Ultra low leakage: nA level
- Low clamping voltage
- -IEC 61000-4-2 (ESD) immunity test  
     Air discharge:  $\pm 30\text{kV}$   
     Contact discharge:  $\pm 30\text{kV}$
- -IEC61000-4-4 (EFT) 40A (5/50ns)
- -IEC61000-4-5(Lightning):20A(8/20 $\mu\text{s}$ )
- These are Pb-Free Devices
- Response Time is Typically < 1 ns

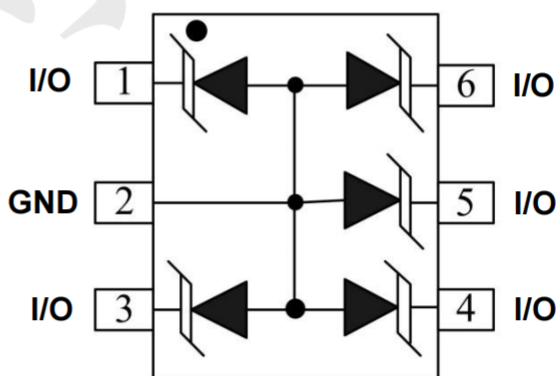
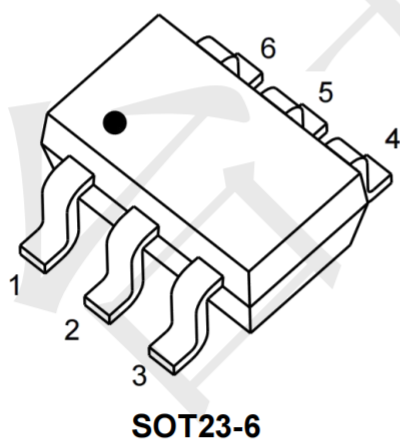
### Mechanical Characteristics

- Package: SOT23-6
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound
- Terminal Connections: See Diagram Below
- - IEC 61000-4-2 (ESD) immunity test

### Applications

- Cellular Handsets and Accessories
- Notebooks and Handhelds
- Portable Instrumentation
- Industrial Controls

### Dimensions and Pin Configuration



**Circuit and Pin Schematic**

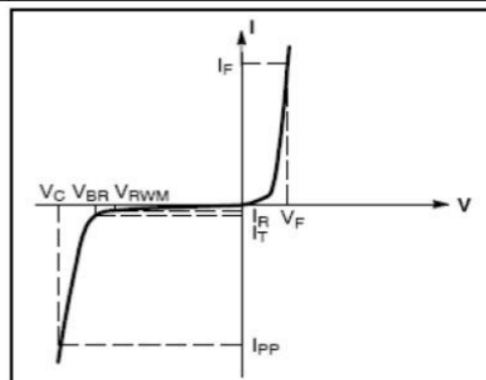
### Absolute Maximum Ratings( $T_{amb}=25^{\circ}\text{C}$ unless otherwise specified)

| Parameter                                | Symbol | Value       | Unit               |
|------------------------------------------|--------|-------------|--------------------|
| Peak Pulse Power (8/20 $\mu\text{s}$ )   | Ppp    | 300         | W                  |
| Peak Pulse Current (8/20 $\mu\text{s}$ ) | Ipp    | 20          | A                  |
| ESD per IEC 61000-4-2 (Air)              | VESD   | $\pm 30$    | KV                 |
| ESD per IEC 61000-4-2 (Contact)          |        | $\pm 30$    |                    |
| Operating Temperature Range              | TJ     | -55 to +125 | $^{\circ}\text{C}$ |
| Storage Temperature Range                | Tstg   | -55 to +150 | $^{\circ}\text{C}$ |

### Electrical Characteristics ( $T_A=25^{\circ}\text{C}$ unless otherwise specified)

| Parameter               | Symbol  | Min | Typ | Max | Unit          | Test Condition                                            |
|-------------------------|---------|-----|-----|-----|---------------|-----------------------------------------------------------|
| Reverse Working Voltage | VRWM    | --  | --  | 3.3 | V             | Any I/O pin to ground                                     |
| Breakdown Voltage       | VBR     | 4.0 | --  | 7.0 | V             | $I_T = 1\text{mA}$ , Any I/O pin to ground                |
| Reverse Leakage Current | IR      | --  | --  | 0.5 | $\mu\text{A}$ | $VRWM=3.3\text{V}$ , Any I/O pin to ground                |
| Forward Voltage         | VF      | --  | 0.8 | 1.1 | V             | $I_F = 10\text{mA}$ , ground to Any I/O pin               |
| Clamping Voltage        | VC      | --  | --  | 7   | V             | $I_{pp}=1\text{A}$ (8x 20us pulse),<br>I/O pin to ground  |
| Clamping Voltage        | VC      | --  | --  | 15  | V             | $I_{pp}=20\text{A}$ (8x 20us pulse),<br>I/O pin to ground |
| Junction Capacitance    | Cvo-GND | --  | --  | 200 | pF            | $VR=0\text{V}$ , $f=1\text{MHz}$ ,<br>Any I/O to GND      |

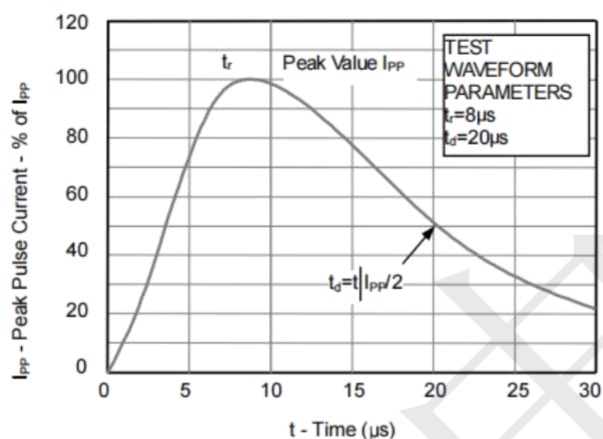
| Symbol    | Parameter                           |
|-----------|-------------------------------------|
| $V_C$     | Clamping Voltage @ $I_{PP}$         |
| $I_{PP}$  | Peak Pulse Current                  |
| $V_{BR}$  | Breakdown Voltage @ $I_T$           |
| $I_T$     | Test Current                        |
| $I_R$     | Reverse Leakage Current @ $V_{RWM}$ |
| $V_{RWM}$ | Reverse Standoff Voltage            |
| $V_F$     | Forward Voltage @ $I_F$             |
| $I_F$     | Forward Current                     |



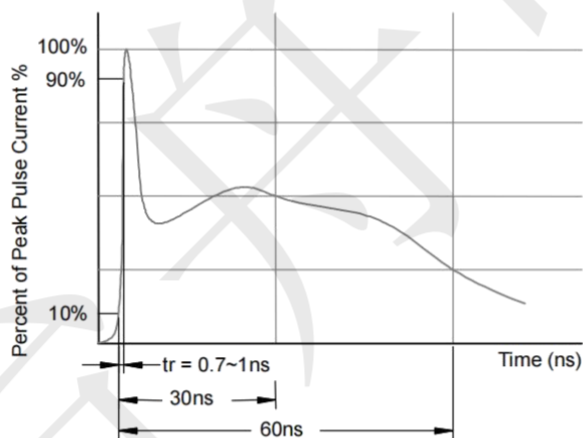
V-I characteristics for a uni-directional TVS

### Characteristic Curves

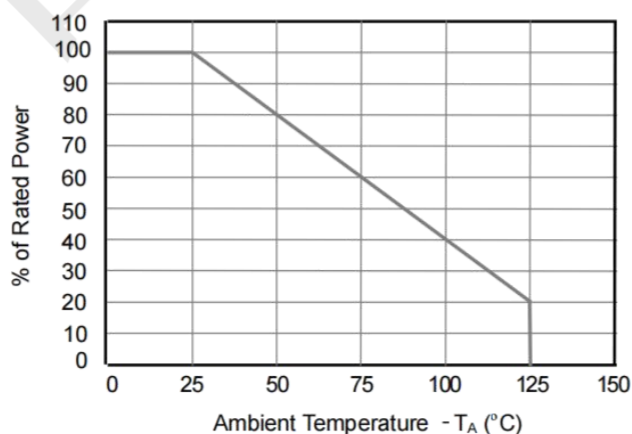
**Fig1. 8/20 $\mu$ s Pulse Waveform**



**Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)**

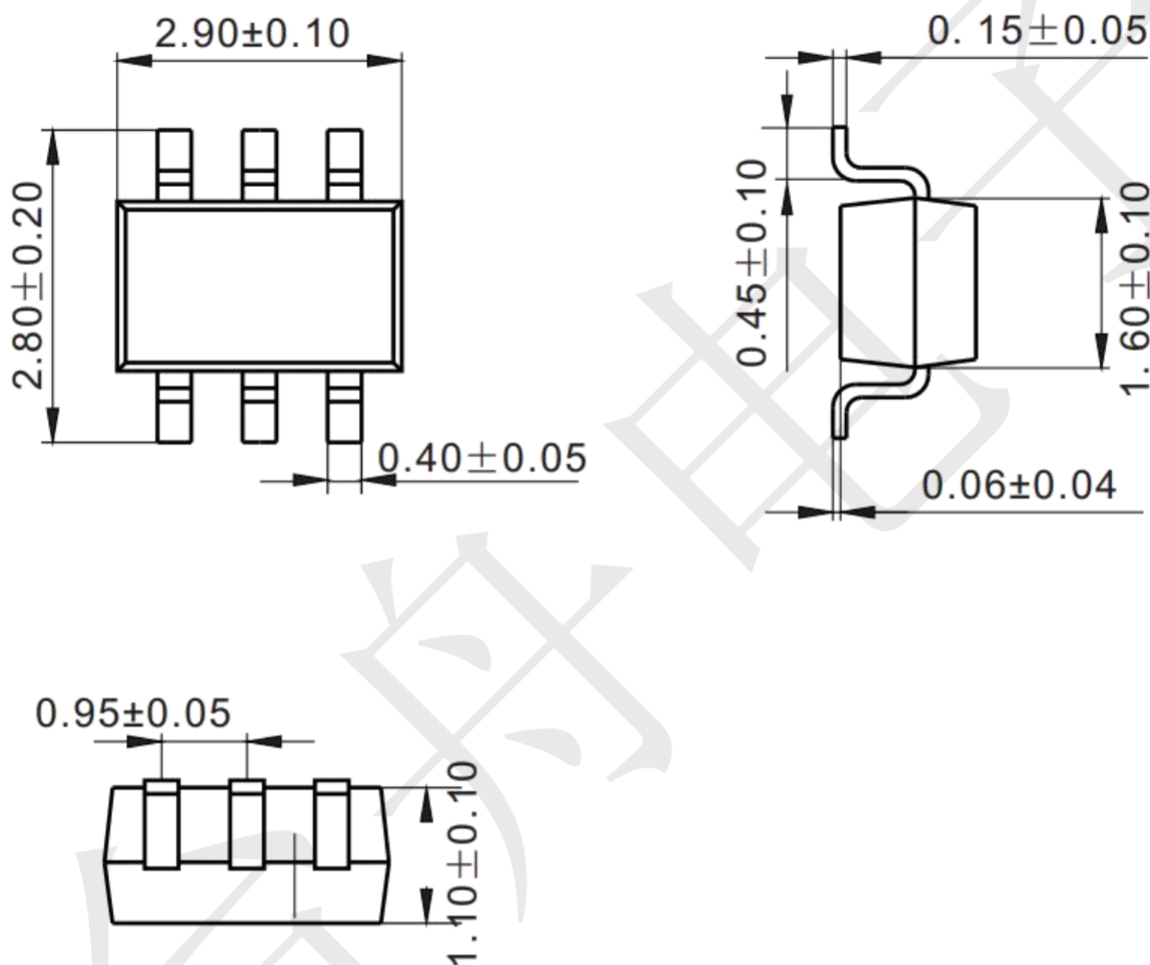


**Fig3. Power Derating Curve**



### Package informantion

SOT23-6 (Unit: mm)



### Mounting Pad Layout (unit: mm)

