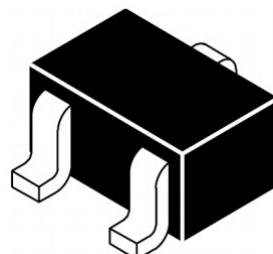


## 2-Line Uni-directional TVS Diode Array

### Features

- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Complies with following standards:
  - 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) 8A (8/20  $\mu\text{s}$ )
- RoHS Compliant

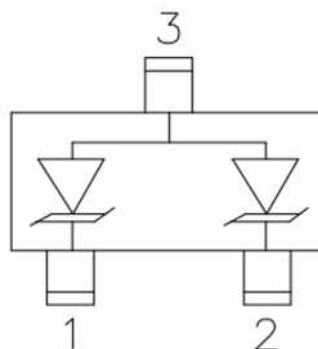
### Dimensions SOT-323



### Applications

- Peripherals
- Industrial Equipment
- Notebook Computers
- Portable Instrumentation
- Microprocessor Based Equipment
- Cell Phone Handsets and Accessories
- Personal Digital Assistants (PDAs) and Pagers

### Pin Configuration



### Mechanical Characteristics

- Package: SOT-323
- Lead Finish: Lead Free
- UL Flammability Classification Rating 94V-0
- Quantity Per Reel: 3000pcs
- Reel Size: 7 inch
- Device Marking: ST5R

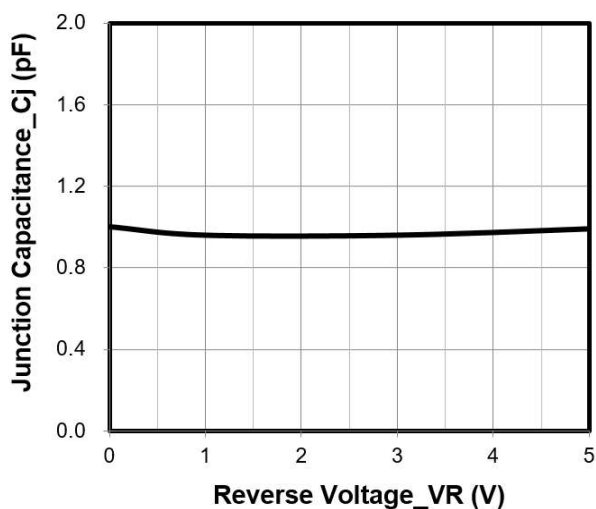
### Absolute Maximum Ratings (T<sub>amb</sub>=25°C unless otherwise specified)

| Parameter                              | Symbol           | Value       | Unit |
|----------------------------------------|------------------|-------------|------|
| Peak Pulse Power (8/20 $\mu\text{s}$ ) | P <sub>pp</sub>  | 180         | W    |
| ESD per IEC 61000-4-2 (Air)            | V <sub>ESD</sub> | $\pm 30$    | Kv   |
| ESD per IEC 61000-4-2 (Contact)        |                  | $\pm 30$    |      |
| Operating Temperature Range            | T <sub>J</sub>   | -55 to +125 | °C   |
| Storage Temperature Range              | T <sub>STJ</sub> | -55 to +150 | °C   |

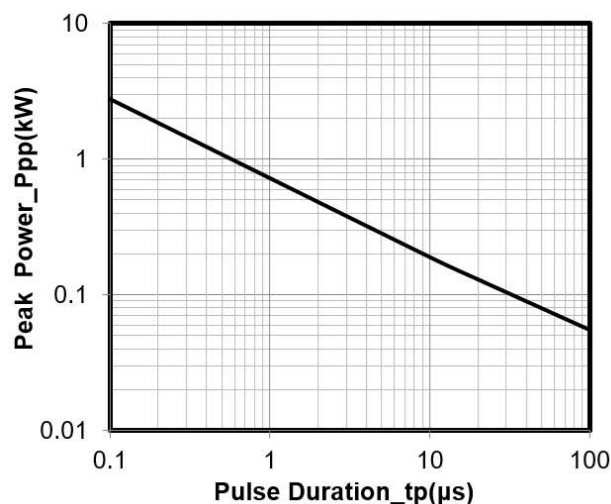
**Electrical Characteristics**(TA=25°C unless otherwise specified)

| Parameter               | Symbol    | Test Condition                                                | Min | Typ | Max | Unit          |
|-------------------------|-----------|---------------------------------------------------------------|-----|-----|-----|---------------|
| Reverse Working Voltage | $V_{RWM}$ |                                                               |     |     | 5   | V             |
| Breakdown Voltage       | $V_{BR}$  | $I_T = 1\text{mA}$                                            | 6   |     |     | V             |
| Reverse Leakage Current | $I_R$     | $V_{RWM} = 5\text{V}$                                         |     |     | 0.5 | $\mu\text{A}$ |
| Clamping Voltage        | $V_C$     | $I_{PP} = 1\text{A}$ (8 x 20 $\mu\text{s}$ pulse)             |     |     | 9   | V             |
| Clamping Voltage        | $V_C$     | $I_{PP} = 8\text{A}$ (8 x 20 $\mu\text{s}$ pulse)             |     | 14  | 16  | V             |
| Junction Capacitance    | $C_J$     | $V_R = 0\text{V}$ , $f = 1\text{MHz}$ , any I/O pin to ground |     | 1   |     | pF            |

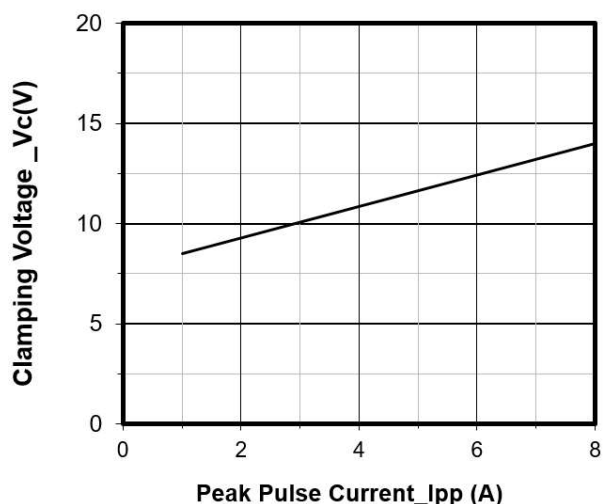
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



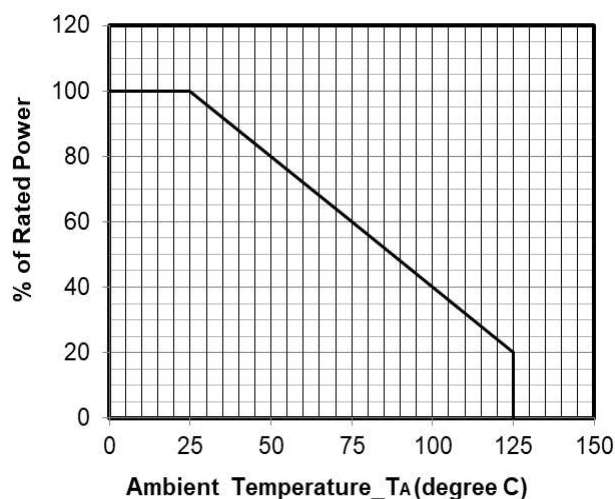
Junction Capacitance vs. Reverse Voltage



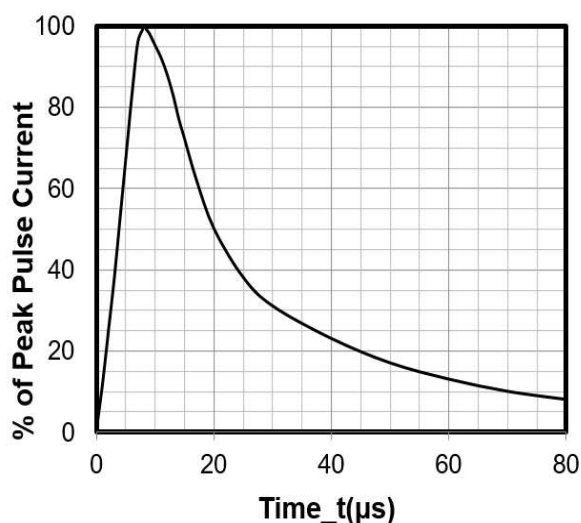
Peak Pulse Power vs. Pulse Time



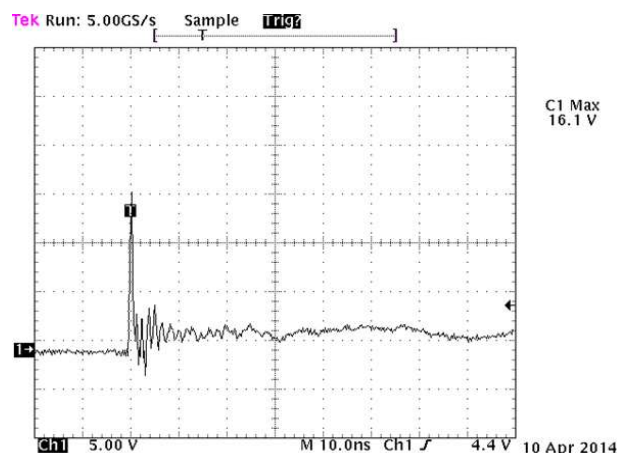
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20μs Pulse Waveform

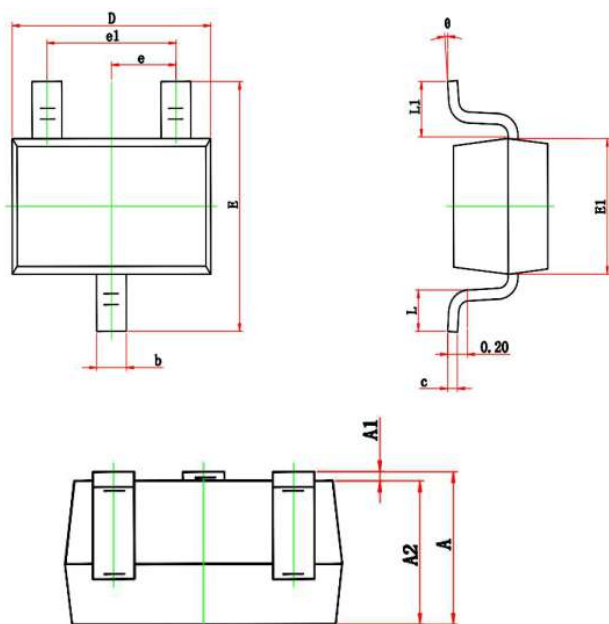


Note: Data is taken with a 10x attenuator

ESD Clamping Voltage

8 kV Contact per IEC61000-4-2

## SOT-323 Package Outline & Dimensions



| Symbol | Dim in mm |      |      |
|--------|-----------|------|------|
|        | Min       | Nor  | Max  |
| A      | 0.90      | 1.00 | 1.10 |
| A1     | 0.00      | 0.05 | 0.10 |
| A2     | 0.90      | 0.95 | 1.00 |
| b      | 0.20      | 0.30 | 0.40 |
| c      | 0.08      | 0.12 | 0.15 |
| D      | 2.00      | 2.10 | 2.20 |
| E      | 2.15      | 2.30 | 2.45 |
| E1     | 1.15      | 1.25 | 1.35 |
| e      | 0.650TPY. |      |      |
| e1     | 1.2       | 1.3  | 1.4  |
| L      | 0.26      | 0.36 | 0.46 |
| L1     | 0.525REF. |      |      |
| θ      | 0°        | 4°   | 8°   |

### Suggested Land Pattern

