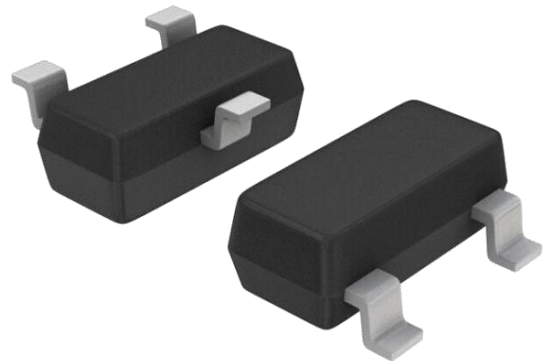




## Features

- 350 Watts peak pulse power ( $t_p = 8/20\mu s$ )
- Unidirectional and bidirectional configurations
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- IEC 61000-4-2  $\pm 30kV$  contact  $\pm 30kV$  air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 15A (8/20 $\mu s$ )



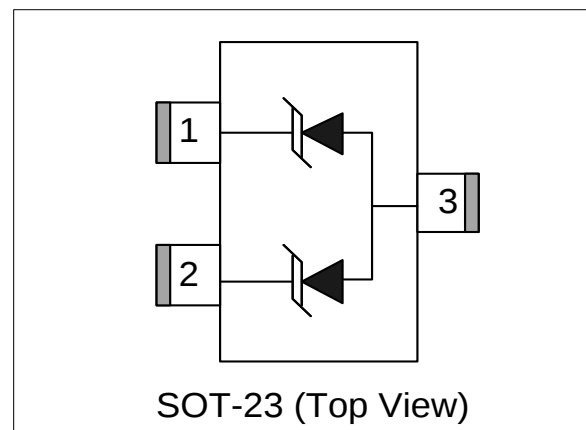
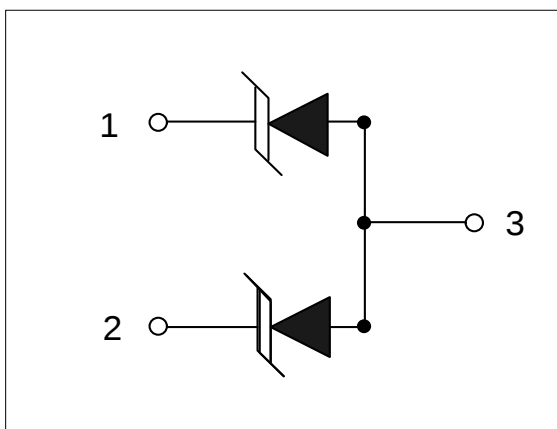
## Applications

- Dataline
- Automatic Teller Machines
- Net works
- Power line

## Mechanical Data

- SOT-23 package
- Molding compound flammability rating: UL 94V-0
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

## Schematic & PIN Configuration



SOT-23 (Top View)

### Absolute Maximum Rating

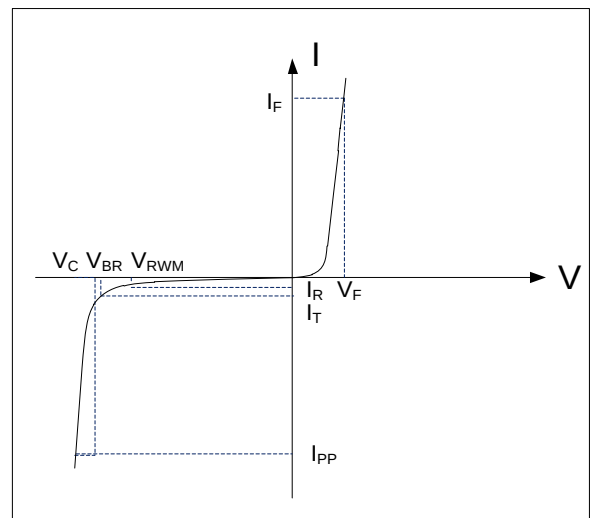
| Rating                                                         | Symbol    | Value          | Units |
|----------------------------------------------------------------|-----------|----------------|-------|
| Peak Pulse Power ( $t_p = 8/20\mu s$ )                         | $P_{PP}$  | 350            | Watts |
| Peak Pulse Current ( $t_p = 8/20\mu s$ ) (note1)               | $I_{PP}$  | 15             | A     |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | $V_{ESD}$ | 30<br>30       | kV    |
| Lead Soldering Temperature                                     | $T_L$     | 260(10seconds) | °C    |
| Junction Temperature                                           | $T_J$     | -55 to + 125   | °C    |
| Storage Temperature                                            | $T_{stg}$ | -55 to + 125   | °C    |

### Electrical Characteristics

| Parameter                 | Symbol    | Conditions                               | Min | Typical | Max | Units   |
|---------------------------|-----------|------------------------------------------|-----|---------|-----|---------|
| Reverse Stand-Off Voltage | $V_{RWM}$ |                                          |     |         | 8   | V       |
| Reverse Breakdown Voltage | $V_{BR}$  | $I_T = 1mA$                              | 9   |         |     | V       |
| Reverse Leakage Current   | $I_R$     | $V_{RWM} = 8V, T = 25^\circ C$           |     | 0.1     | 0.5 | $\mu A$ |
| Peak Pulse Current        | $I_{PP}$  | $t_p = 8/20\mu s$                        |     |         | 15  | A       |
| Clamping Voltage          | $V_C$     | $I_{PP} = 15A, t_p = 8/20\mu s$          |     |         | 25  | V       |
| Junction Capacitance      | $C_j$     | $V_R = 0V, f = 1MHz$<br>(Pin 1 to Pin 2) |     | 35      | 45  | pF      |

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

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



Note: 8/20 $\mu s$  pulse waveform.

## Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

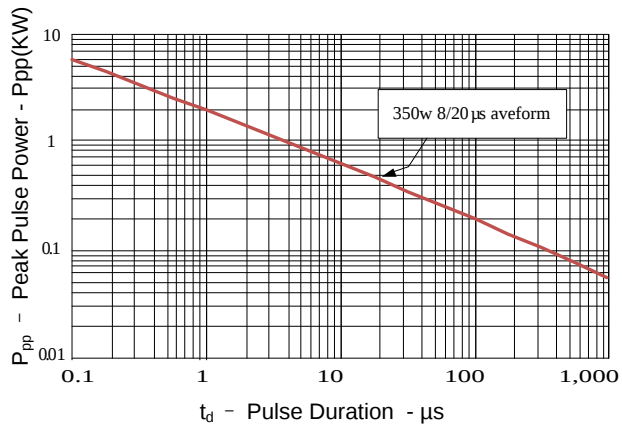


Figure 2: Power Derating Curve

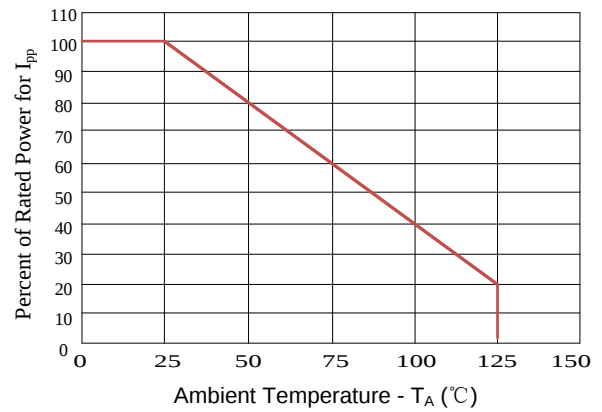


Figure 3: Pulse Waveform

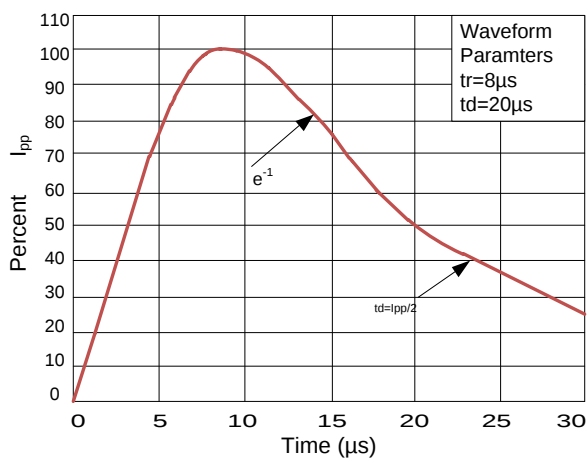
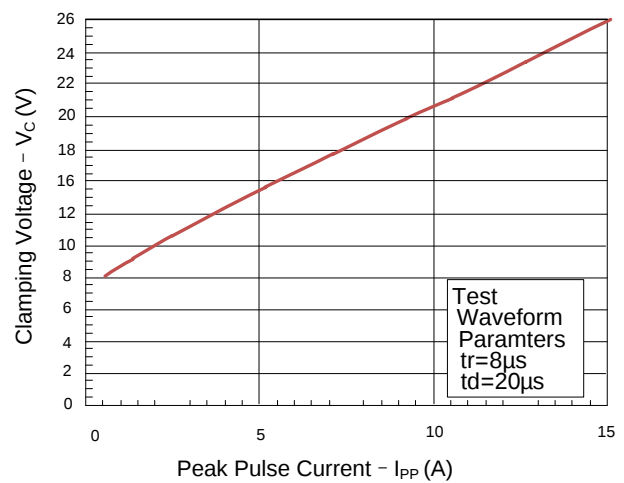
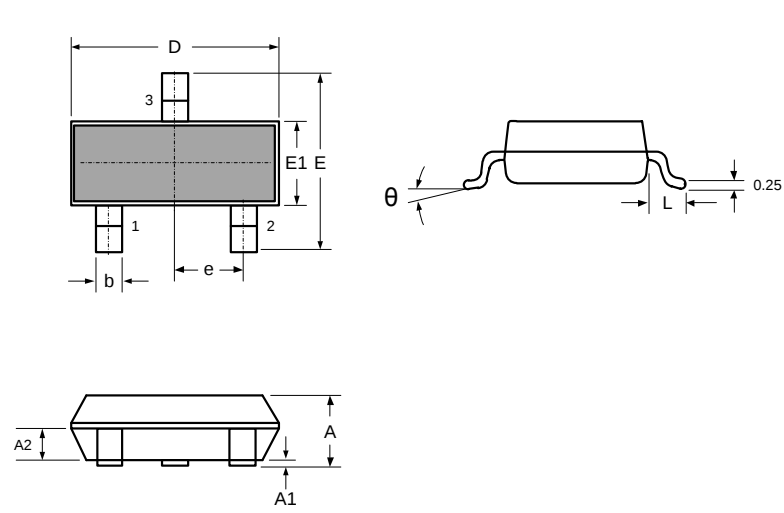


Figure 4: Clamping Voltage vs.  $I_{pp}$

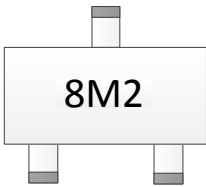


Outline Drawing – SOT-23



| SYMBOL   | DIMENSIONS |       |           |       |
|----------|------------|-------|-----------|-------|
|          | MILLIMETER |       | INCHES    |       |
|          | MIN        | MAX   | MIN       | MAX   |
| A        | 0.900      | 1.150 | 0.035     | 0.045 |
| A1       | 0.000      | 0.100 | 0.000     | 0.004 |
| A2       | 0.900      | 1.050 | 0.035     | 0.041 |
| D        | 2.800      | 3.000 | 0.110     | 0.118 |
| b        | 0.300      | 0.500 | 0.012     | 0.020 |
| E        | 2.250      | 2.550 | 0.089     | 0.100 |
| E1       | 1.200      | 1.400 | 0.047     | 0.055 |
| e        | 0.950 BSC  |       | 0.037 BSC |       |
| L        | 0.300      | 0.500 | 0.012     | 0.020 |
| $\theta$ | 0          | 8°    | 0         | 8°    |

Marking



Ordering information

| Order code   | Package | Base qty | Delivery mode |
|--------------|---------|----------|---------------|
| SEST23N0813P | SOT-23  | 3k       | Tape and reel |