

### 1. Features

- 150W peak pulse power ( $t_p=8/20\mu s$ )
- Transient protection for high speed data lines to IEC 61000-4-2 (ESD)  $\pm 15kV$  (air),  $\pm 8kV$  (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- Working voltages: 5V
- Protects one bidirectional line or two unidirectional lines
- Low operating and clamping voltages
- Solid-state silicon avalanche technology

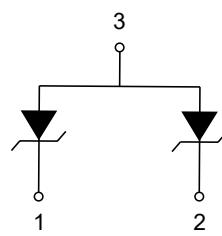
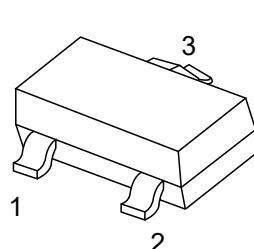
### 2. Applications

- USB Power & Data Line Protection
- Monitors and Flat Panel Displays
- I<sup>2</sup>C Bus Protection
- Portable Instrumentation
- Set Top Box

### 3. Mechanical Characteristics

- Package: SOT23
- Lead Finish: Matte Tin
- UL Flammability Classification Rating 94V-0
- Pb-Free, Halogen Free, RoHS/WEEE Compliant

### 4. Pinning information



**SOT-23**



## 5. Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$ unless otherwise specified)

| Parameter                       | Symbol    | Value      | Units |
|---------------------------------|-----------|------------|-------|
| Peak pulse power (8/20μs)       | $P_{PK}$  | 150        | W     |
| ESD per IEC 61000-4-2 (Air)     | $V_{ESD}$ | $\pm 15$   | kV    |
| ESD per IEC 61000-4-2 (Contact) |           | $\pm 8$    | kV    |
| Junction Temperature Range      | $T_J$     | -55 to 125 | °C    |
| Storage Temperature Range       | $T_{STG}$ | -55 to 150 | °C    |

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

| Part Number | $V_{RWM}$ | $I_{DRM}$ | $V_{BR}$ | $I_R$ | $V_C$ | $I_{PP}$ | $V_C$ | $I_{PP}$ | $C_O$ |
|-------------|-----------|-----------|----------|-------|-------|----------|-------|----------|-------|
|             | V         | μA        | V        | mA    | V     | A        | V     | A        | pF    |
|             |           | MAX       | MIN      |       | MAX   |          | MAX   |          | MAX   |
| SM05        | 5         | 1         | 6        | 1     | 9.8   | 1        | 15    | 10       | 100   |

## 7.Typical characteristic

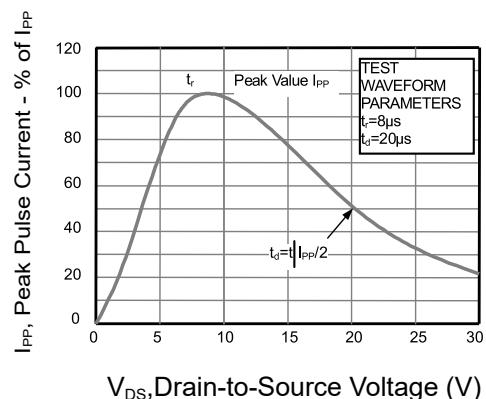


Figure 1: 8/20μs Pulse Waveform

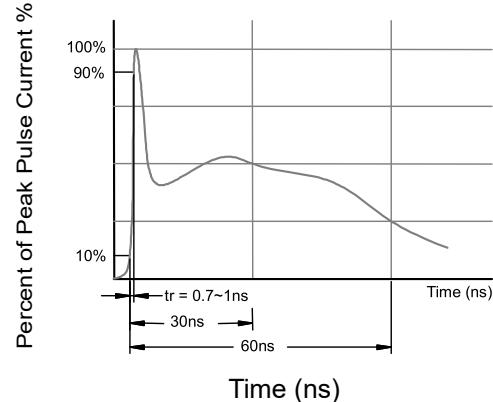
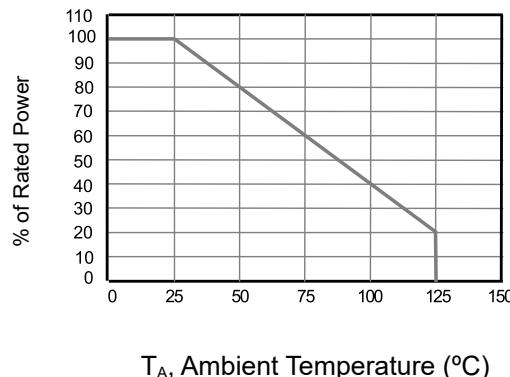
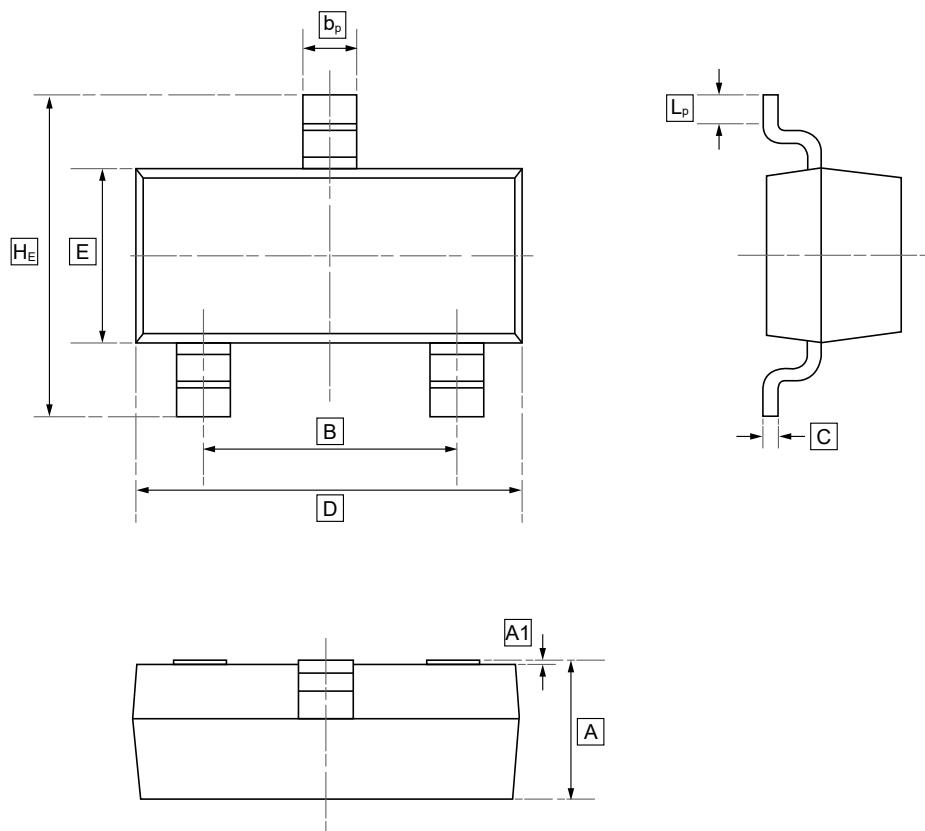
Figure 2: ESD Pulse Waveform  
(according to IEC 61000-4-2)

Figure 3: Power Derating Curve

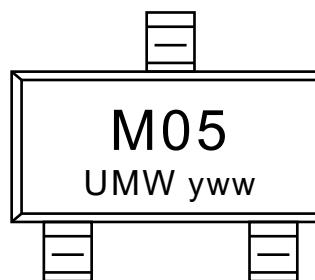
## 8.SOT-23 Package Outline Dimensions



### DIMENSIONS (mm are the original dimensions)

| Symbol     | A    | B    | b <sub>p</sub> | C    | D    | E    | H <sub>E</sub> | A1    | L <sub>p</sub> |
|------------|------|------|----------------|------|------|------|----------------|-------|----------------|
| <b>Min</b> | 0.95 | 1.78 | 0.35           | 0.08 | 2.70 | 1.20 | 2.20           | 0.013 | 0.20           |
| <b>Max</b> | 1.40 | 2.04 | 0.50           | 0.19 | 3.10 | 1.65 | 3.00           | 0.100 | 0.50           |

## **9.Ordering information**



yww: Batch Code

| Order Code   | Package | Base QTY | Delivery Mode |
|--------------|---------|----------|---------------|
| UMW SM05.TCT | SOT-23  | 3000     | Tape and reel |



## 10.Disclaimer

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