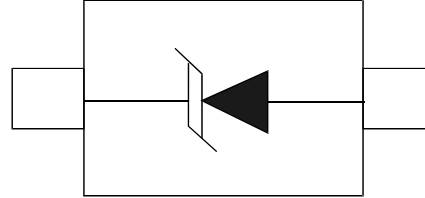


### Features

- Unidirectional ESD protection of one line
- Max. peak pulse power:  $P_{PP} = 160\text{ W}$
- Ultra low leakage current:  $I_{RM} < 1\text{ nA}$
- ESD protection up to 23 kV
- IEC 61000-4-2, level 4 (ESD)
- IEC 61000-4-5 (surge);  $I_{PP} = 3\text{ A}$



### Applications

- Computers and peripherals
- Communication systems
- Audio and video equipment
- Data lines
- Controller Area Network (CAN) bus protection

### Mechanical Data

- SOD-323 package
- Molding compound flammability rating: UL94V-0
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

### Quick reference data

#### Quick reference data

| Symbol    | Parameter                | Conditions                           | Min | Typ | Max | Unit |
|-----------|--------------------------|--------------------------------------|-----|-----|-----|------|
| $V_{RWM}$ | reverse standoff voltage |                                      | -   | -   | 24  | V    |
| $C_d$     | diode capacitance        | $V_R = 0\text{ V}; f = 1\text{ MHz}$ | -   | 23  | 50  | pF   |

### Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134).

| Symbol           | Parameter            | Conditions               |     | Min | Max  | Unit |
|------------------|----------------------|--------------------------|-----|-----|------|------|
| P <sub>PP</sub>  | peak pulse power     | t <sub>p</sub> = 8/20 μs | [1] | -   | 160  | W    |
| I <sub>PP</sub>  | peak pulse current   | t <sub>p</sub> = 8/20 μs | [1] | -   | 3    | A    |
| T <sub>j</sub>   | junction temperature |                          |     | -   | 150  | °C   |
| T <sub>amb</sub> | ambient temperature  |                          |     | -65 | +150 | °C   |
| T <sub>stg</sub> | storage temperature  |                          |     | -65 | +150 | °C   |

[1] Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC 61000-4-5.

### ESD maximum ratings

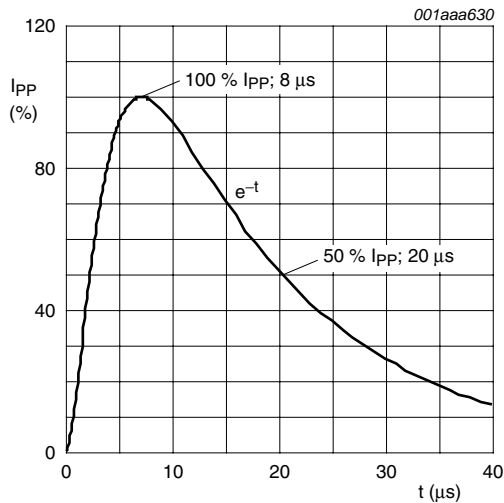
T<sub>amb</sub> = 25 °C unless otherwise specified.

| Symbol           | Parameter                       | Conditions                        |     | Min | Max | Unit |
|------------------|---------------------------------|-----------------------------------|-----|-----|-----|------|
| V <sub>ESD</sub> | electrostatic discharge voltage | IEC 61000-4-2 (contact discharge) | [1] | -   | 23  | kV   |

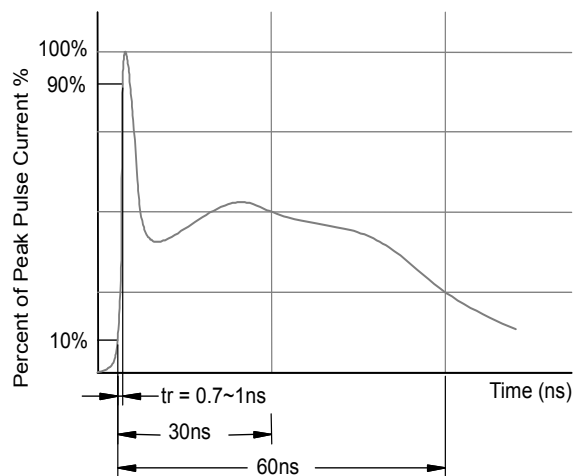
[1] Device stressed with ten non-repetitive ESD pulses.

### ESD standards compliance

| Standard                                | Conditions                      |
|---|---------------------------------|
| IEC 61000-4-2; level 4 (ESD)            | > 15 kV (air); > 8 kV (contact) |
| MIL-STD-883; class 3 (human body model) | > 4 kV                          |



8/20 μs pulse waveform according to IEC 61000-4-5



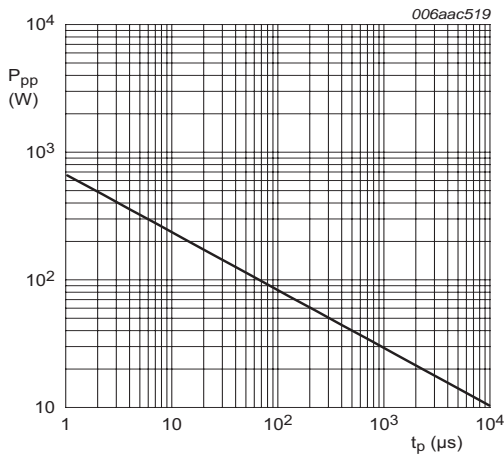
ESD pulse waveform according to IEC 61000-4-2

### Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$  unless otherwise specified.

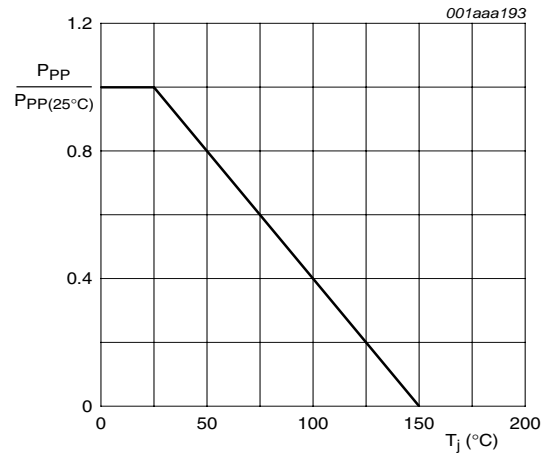
| Symbol    | Parameter                | Conditions                           | Min    | Typ  | Max  | Unit     |
|-----------|--------------------------|--------------------------------------|--------|------|------|----------|
| $V_{RWM}$ | reverse standoff voltage |                                      | -      | -    | 24   | V        |
| $I_{RM}$  | reverse leakage current  | $V_{RWM} = 24\text{ V}$              | -      | < 1  | 50   | nA       |
| $V_{BR}$  | breakdown voltage        | $I_R = 5\text{ mA}$                  | 26.5   | 27.0 | 27.5 | V        |
| $C_d$     | diode capacitance        | $f = 1\text{ MHz}; V_R = 0\text{ V}$ | -      | 23   | 50   | pF       |
| $V_{CL}$  | clamping voltage         |                                      | [1][2] |      |      |          |
|           |                          | $I_{PP} = 1\text{ A}$                | -      | -    | 36   | V        |
|           |                          | $I_{PP} = 3\text{ A}$                | -      | -    | 70   | V        |
| $r_{dyn}$ | dynamic resistance       | $I_R = 10\text{ A}$                  | [2][3] | 1.53 | -    | $\Omega$ |

- [1] Non-repetitive current pulse 8/20  $\mu\text{s}$  exponential decay waveform according to IEC 61000-4-5.
- [2] Measured from pin 1 to pin 2.
- [3] Non-repetitive current pulse, Transmission Line Pulse (TLP)  $t_p = 100\text{ ns}$ ; square pulse; ANS/IESD STM5-1-2008.

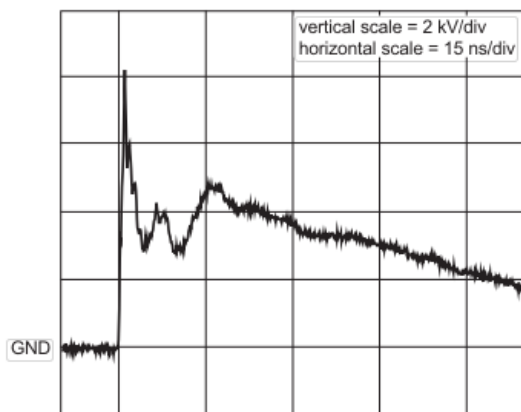


$T_{amb} = 25\text{ }^{\circ}\text{C}$

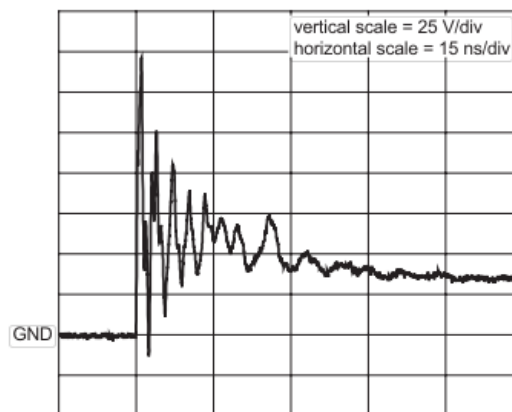
Peak pulse power dissipation as a function of pulse time; typical values



Relative variation of peak pulse power as a function of junction temperature; typical values

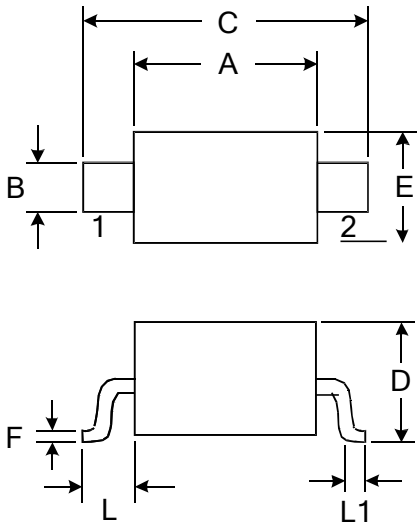


unclamped +8 kV ESD pulse waveform (IEC 61000-4-2 network)



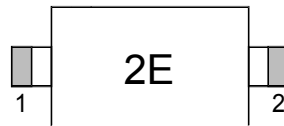
clamped +8 kV ESD pulse waveform (IEC 61000-4-2 network)

**Outline Drawing – SOD-323**



| DIMENSIONS |            |       |          |       |
|------------|------------|-------|----------|-------|
| SYMBOL     | MILLIMETER |       | INCHES   |       |
|            | MIN        | MAX   | MIN      | MAX   |
| A          | 1.600      | 1.800 | 0.063    | 0.071 |
| B          | 0.250      | 0.350 | 0.010    | 0.014 |
| C          | 2.500      | 2.700 | 0.098    | 0.106 |
| D          |            | 1.000 |          | 0.039 |
| E          | 1.200      | 1.400 | 0.047    | 0.055 |
| F          | 0.080      | 0.150 | 0.003    | 0.006 |
| L          | 0.475 REF  |       | 0.019REF |       |
| L1         | 0.250      | 0.400 | 0.010    | 0.016 |
| H          | 0.000      | 0.100 | 0.000    | 0.004 |

**Marking**



**Ordering information**

| Order code      | Package | Baseqty | Deliverymode  |
|-----------------|---------|---------|---------------|
| UMW PESD24VS1UA | SOD-323 | 3000    | Tape and reel |

单击下面可查看定价，库存，交付和生命周期等信息

[>>UMW\(友台半导体\)](#)