

## 1.Description

The UMW PESDNC3D5VB protects sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD) and other voltage induced transient events.

## 3.Features

- 350W peak pulse power per line ( $t_p=8/20\mu s$ )
- SOD-323 package
- Replacement for MLV(0805)
- Bidirectional configurations
- Protects one power or I/O port

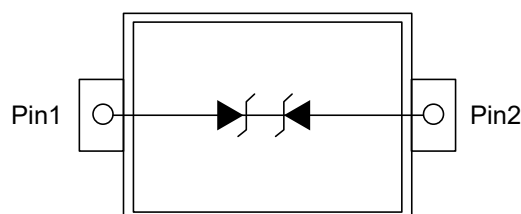
## 4.Mechanical Characteristics

- Lead finish:100% matte Sn(Tin)
- Mounting position: Any
- Qualified max reflowtemperature:260℃

## 2.Applications

- Laptop computers
- Cellular phones
- Digital cameras
- PDAs
- Low clamping voltage
- RoHS compliant
- Transient protection for data lines to
- IEC 61000-4-2(ESD) $\pm 30KV$ (air), $\pm 30KV$ (contact)
- IEC 61000-4-4(EFT)40A(5/50ns)

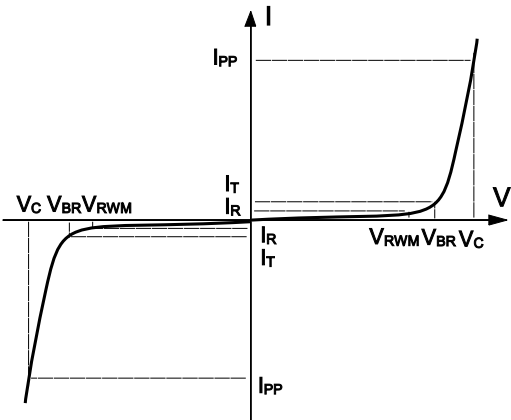
## 5.Pinning information



**SOD-323**



6.Electrical Parameters (T<sub>A</sub>=25°C unless otherwise noted )



| Symbol           | Parameter                                  |
|------------------|--|
| V <sub>RWM</sub> | Peak Reverse Working Voltage               |
| I <sub>R</sub>   | Reverse Leakage Current @ V <sub>RWM</sub> |
| V <sub>BR</sub>  | Breakdown Voltage @ I <sub>T</sub>         |
| I <sub>T</sub>   | Test Current                               |
| I <sub>PP</sub>  | Maximum Reverse Peak Pulse Current         |
| V <sub>C</sub>   | Clamping Voltage @ I <sub>PP</sub>         |
| P <sub>PP</sub>  | Peak Pulse Power                           |
| C <sub>J</sub>   | Junction Capacitance                       |
| I <sub>F</sub>   | Forward Current                            |
| V <sub>F</sub>   | Forward Voltage @ I <sub>F</sub>           |



## 7. Electrical Characteristic ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

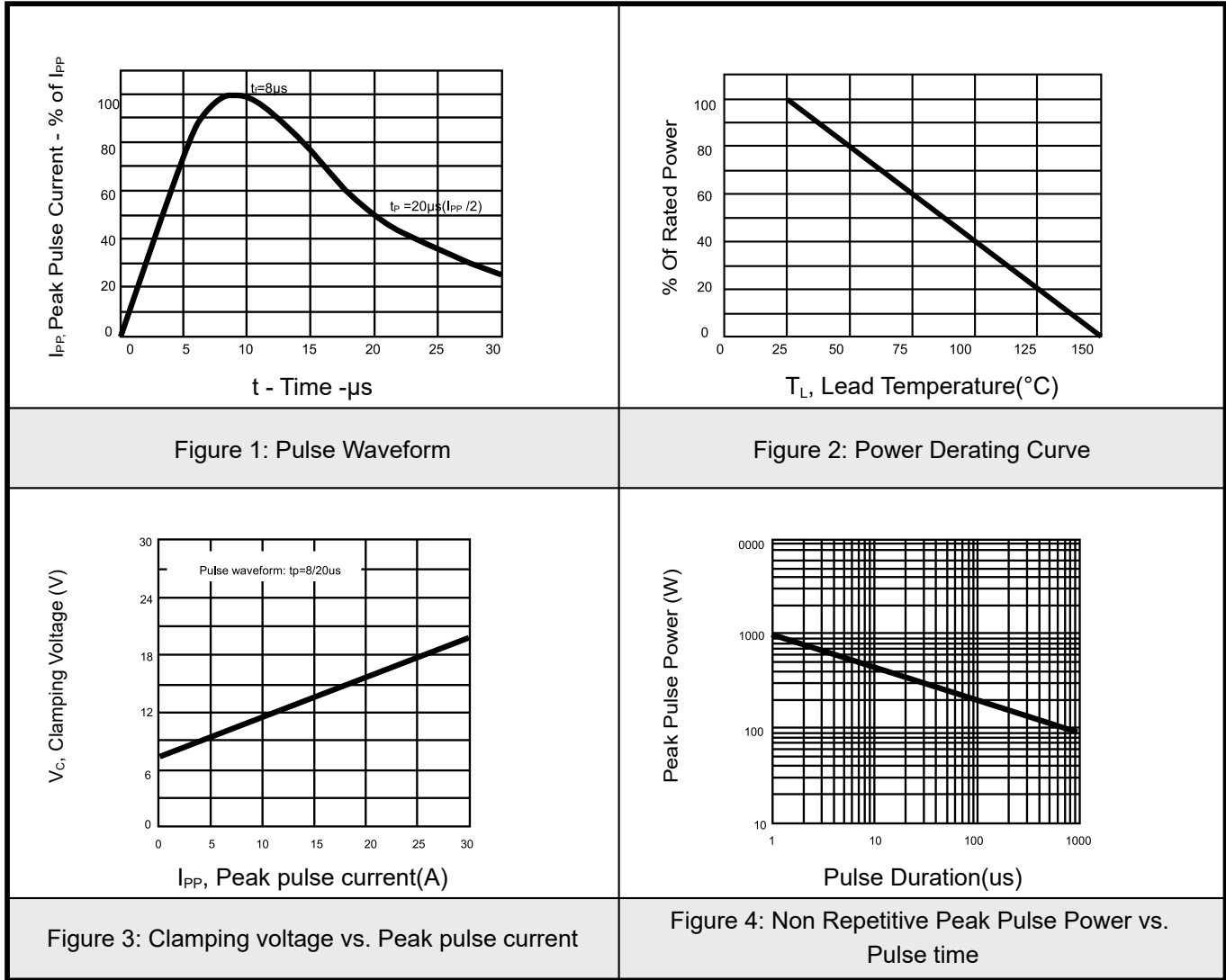
| Parameter               | Symbol    | Conditions                                   | Min | Typ | Max | Units         |
|-------------------------|-----------|--|-----|-----|-----|---------------|
| Working Voltage         | $V_{RWM}$ |  |     |     | 5   | V             |
| Breakdown Voltage       | $V_{BR}$  | $I_T=1\text{mA}$                             | 6   |     | 8   | V             |
| Reverse Leakage Current | $I_R$     | $V_{RWM}=5\text{V}$ , $T=25^{\circ}\text{C}$ |     |     | 1   | $\mu\text{A}$ |
| Clamping Voltage        | $V_C$     | $I_{PP}=1\text{A}$ , $t_p=8/20\mu\text{s}$   |     |     | 9.2 | V             |
|                         |           | $I_{PP}=5\text{A}$ , $t_p=8/20\mu\text{s}$   |     |     | 11  | V             |
|                         |           | $I_{PP}=24\text{A}$ , $t_p=8/20\mu\text{s}$  |     |     | 23  | V             |
| Junction Capacitance    | $C_J$     | $V_R=0\text{V}$ , $f=1\text{MHz}$            |     | 85  |     | pF            |

## 8. Absolute maximum rating @ $25^{\circ}\text{C}$

| Parameter                       | Symbol    | Value      | Units              |
|---------------------------------|-----------|------------|--------------------|
| Unidirectional Peak Pulse Power | $P_{PP}$  | 350        | W                  |
| Operating Temperature           | $T_J$     | -55 to 150 | $^{\circ}\text{C}$ |
| Storage Temperature             | $T_{STG}$ | -55 to 150 | $^{\circ}\text{C}$ |



9. Typical characteristic





## 10.Solder Reflow Recommendation

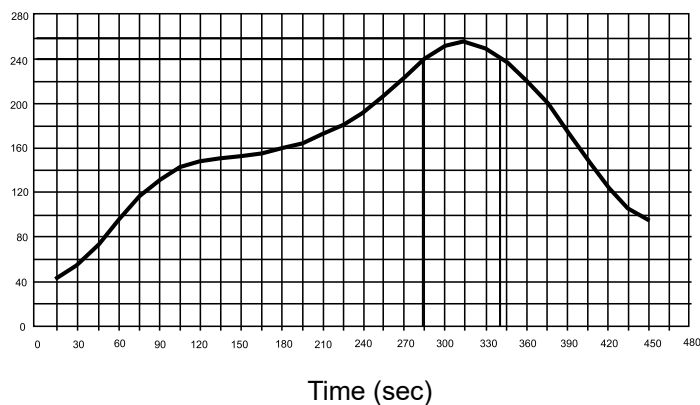


Figure 5: Peak Temp=257°C, Ramp Rate=0.802deg. °C/sec

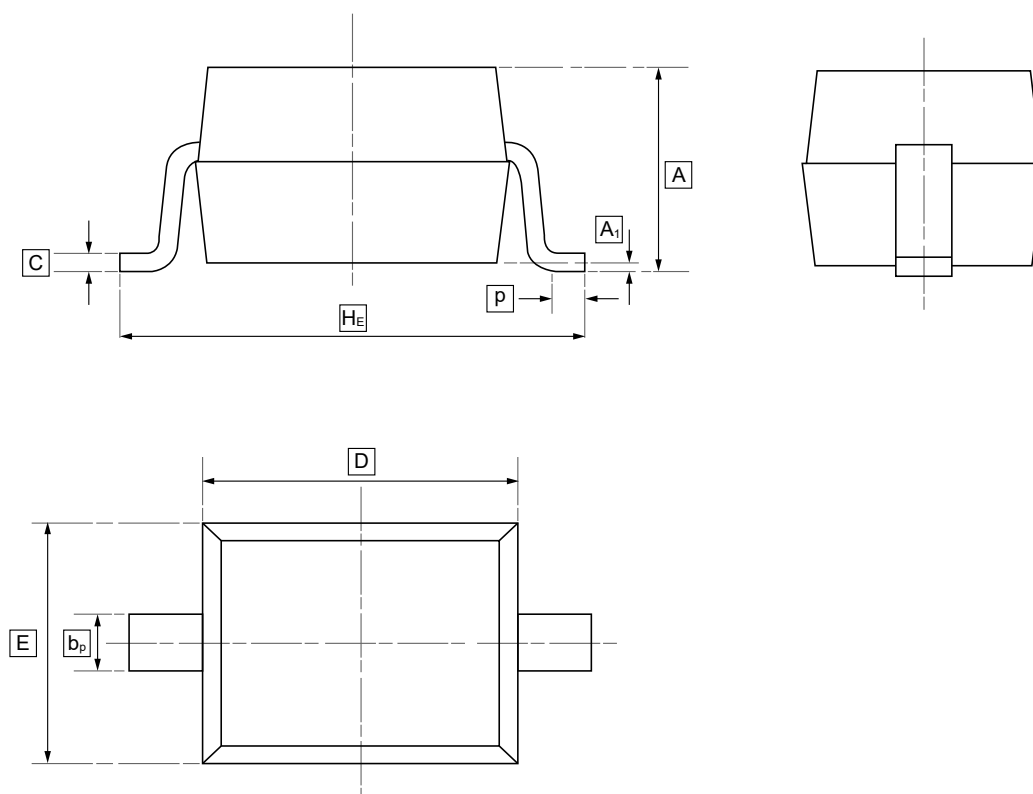
### PCB Design

For TVS diodes a low-ohmic and low-inductive path to chassis earth is absolutely mandatory in order to achieve good ESD protection. Novices in the area of ESD protection should take following suggestions to heart:

- Do not use stubs, but place the cathode of the TVS diode directly on the signal trace.
- Do not make false economies and save copper for the ground connection.
- Place via holes to ground as close as possible to the anode of the TVS diode.
- Use as many via holes as possible for the ground connection.
- Keep the length of via holes in mind! The longer the more inductance they will have.



## 11.SOD-323 Package Outline Dimensions

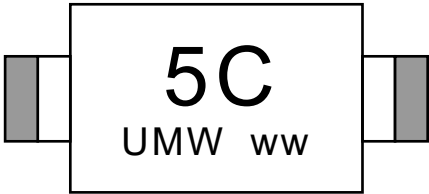


### DIMENSIONS (mm are the original dimensions)

| Symbol | A    | $b_p$ | C    | D    | E    | $H_E$ | $A_1$ | P    |
|--------|------|-------|------|------|------|-------|-------|------|
| Min    | 0.90 | 0.25  | 0.10 | 1.60 | 1.15 | 2.30  | 0.01  | 0.20 |
| Max    | 1.20 | 0.40  | 0.15 | 1.80 | 1.35 | 2.80  | 0.10  | 0.50 |



12.Ordering information



ww: Batch Code

| Order Code      | Package | Base QTY | Delivery Mode |
|-----------------|---------|----------|---------------|
| UMW PESDNC3D5VB | SOD-323 | 3000     | Tape and reel |



## **13.Disclaimer**

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