# UMW BSD5A051U

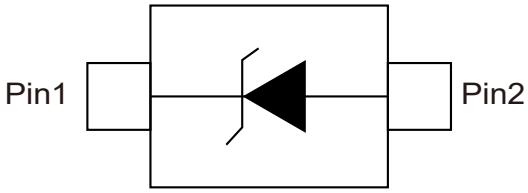
## 1.Features

- 45Watts peak pulse power ($t_p$=8/20μs)
- Tiny SOD -523 package
- Solid-state silicon-avalanche technology
- Low clamping voltage
- Low leakage current
- Low capacitance (Cj=0.7pF typ.)
- Protection one data/power line

## 2.Applications

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants(PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation

## 3.Pinning information




**SOD-523**

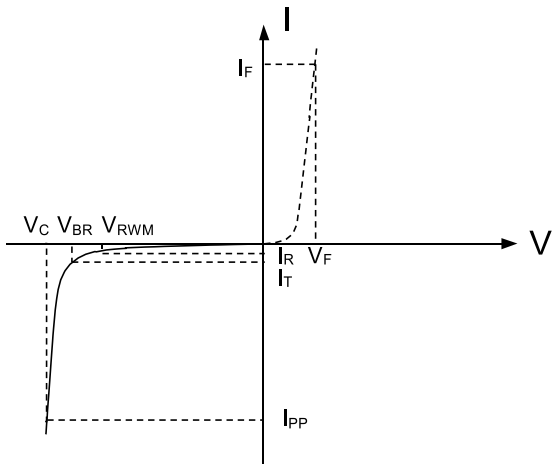
## 4.Absolute Maximum Ratings $T_A$= 25°C

| Parameter | Symbol | Value | Units |
|---|---|---|---|
| Peak Pulse Power ( $t_p$=8/20μs) | $P_{PP}$ | 45 | Watts |
| Peak Pulse Current ( $t_p$=8/20μs )(note1) | $I_{PP}$ | 3.5 | A |
| ESD per IEC 61000-4-2(Air) | $V_{ESD}$ | 15 | kV |
| ESD per IEC 61000-4-2(Contact) | | 10 | 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 |

## 5.Electrical Characteristic ($T_A$=25°C unless otherwise noted)

| Parameter | Symbol | Conditions | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|
| Reverse Stand-OffVoltage | $V_{RWM}$ | | | | 5 | V |
| Reverse BreakdownVoltage | $V_{BR}$ | $I_T$=1mA | 6 | 7.5 | | V |
| Reverse LeakageCurrent | $I_R$ | $V_{RWM}$=5V, T=25°C | | 0.1 | 0.5 | uA |
| Peak Pulse Current | $I_{PP}$ | $t_p$=8/20μs | | | 3.5 | A |
| Clamping Voltage | $V_C$ | $I_{PP}$=3.5A, $t_p$=8/20μs | | | 13 | V |
| Junction Capacitance | $C_J$ | $V_R$=0V, f=1MHz | | 0.6 | 0.9 | pF |

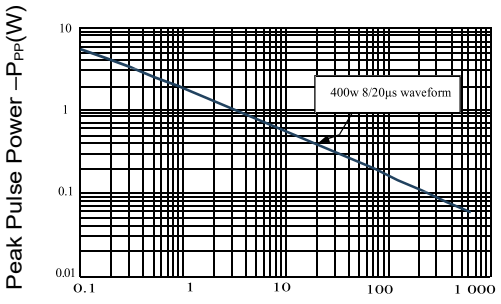
## 6.Electrical Parameters ($T_A$=25°C unless otherwise noted )




| 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 |

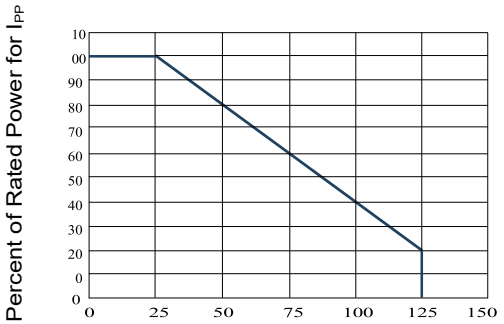
Notes:8/20μs pulse waveform.

## 7.Typical characteristic



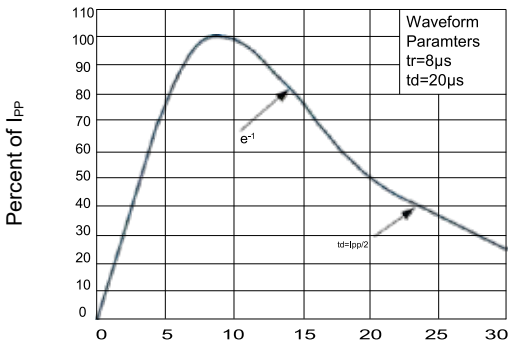

$t_d$ - Pulse Duration - μs

Figure 1: Peak Pulse Power vs. Pulse Time



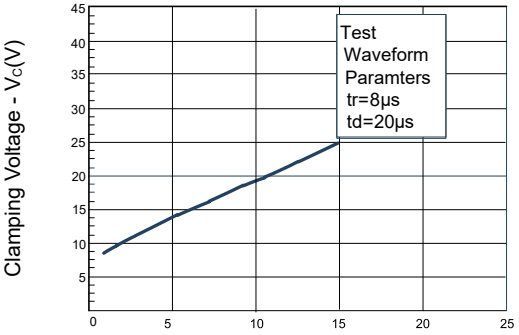

Ambient Temperature - $T_A$(°C)

Figure 2: Power Derating Curve




Time (μs)

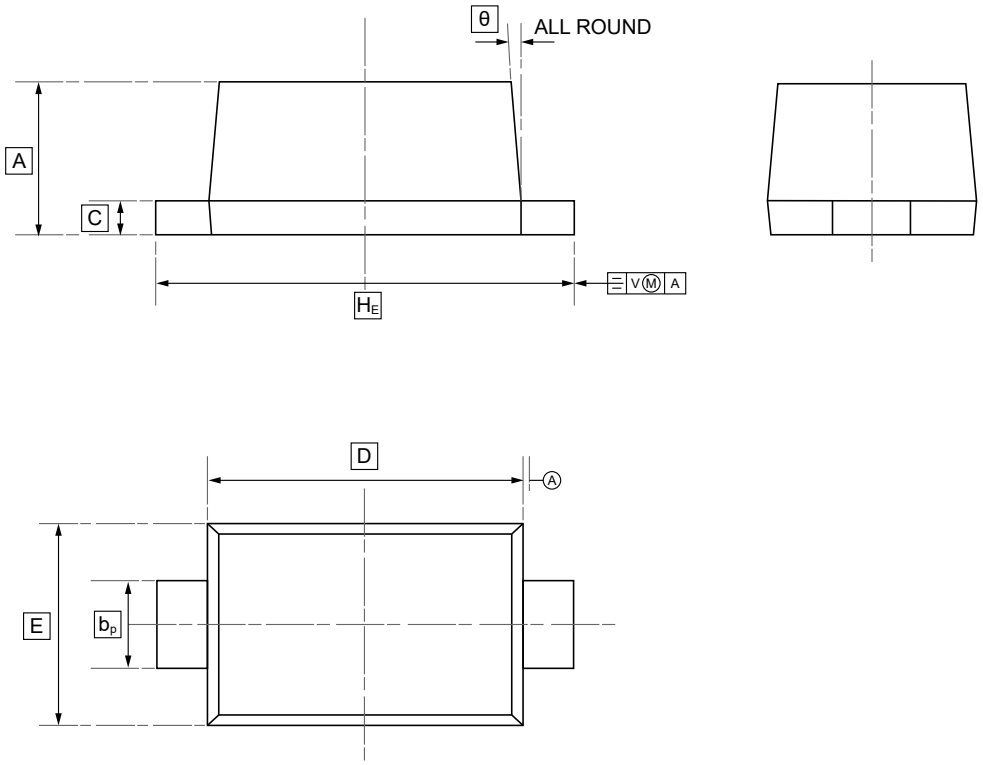
Figure 3: Pulse Waveform




Peak Pulse Current - $I_{PP}$ (A)

Figure 4: Clamping Voltage vs.Ipp

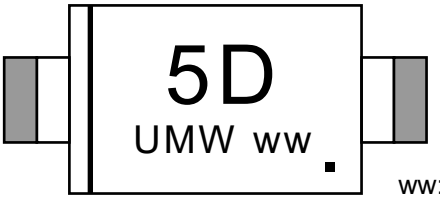
## 8.SOD-523 Package Outline Dimensions




**DIMENSIONS (mm are the original dimensions)**

| Symbol | A | $b_p$ | C | D | E | $H_E$ | θ |
|---|---|---|---|---|---|---|---|
| **Min** | 0.58 | 0.3 | 0.100 | 1.15 | 0.75 | 1.5 | 5° |
| **Max** | 0.68 | 0.4 | 0.135 | 1.25 | 0.85 | 1.7 | |

## 9.Ordering information




ww: Batch Code

| Order Code | Package | Base QTY | Delivery Mode |
|---|---|---|---|
| UMW BSD5A051U | SOD-523 | 3000 | Tape and reel |

## 10.Disclaimer

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