



## Features

- Small Body Outline Dimensions:  
0.063" x 0.032" (1.6x0.8 mm)
- Low Body Height: 0.024" (0.6 mm) Nom
- 120 Watts peak pulse power ( $t_p = 8/20\mu s$ )
- Protects one I/O or power line
- Replacement for MLV(0603)
- Low clamping voltage
- Working voltage: 3.3V
- Low leakage current
- Solid-state silicon-avalanche technology



## IEC Compatibility (EN61000-4)

- IEC 61000-4-2 (ESD)  $\pm 15kV$  (air),  $\pm 8kV$  (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 7A (8/20 $\mu s$ )

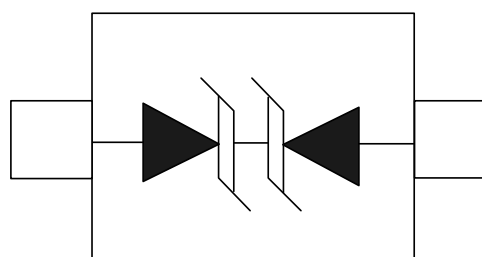
## Mechanical Characteristics

- JEDEC SOD-523 package
- Molding compound flammability rating:  
UL 94V-0
- Marking : Marking Code
- Packaging : Tape and Reel per EIA 481
- RoHS Compliant

## Applications

- Cellular Handsets & Accessories
- Personal Digital Assistants (PDAs)
- Notebooks & Handhelds
- Portable Instrumentation
- Digital Cameras
- MP3 players

## Schematic & PIN Configuration

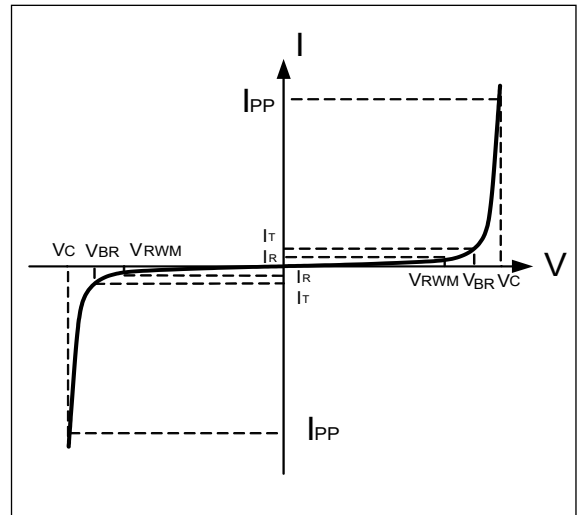


SOD-523 (Top View)

| Absolute Maximum Rating                        |           |              |             |
|--|-----------|--------------|-------------|
| Rating   | Symbol    | Value        | Units       |
| Peak Pulse Power ( $t_p=8/20\mu s$ )           | $P_{PP}$  | 120          | Watts       |
| Maximum Peak Pulse Current ( $t_p=8/20\mu s$ ) | $I_{PP}$  | 7            | A           |
| Operating Temperature                          | $T_J$     | -55 to + 125 | $^{\circ}C$ |
| Storage Temperature                            | $T_{STG}$ | -55 to +150  | $^{\circ}C$ |

### Electrical Parameters (T=25 $^{\circ}C$ )

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



### Electrical Characteristics

| DW03D5-B-E                |           |                               |         |         |         |         |
|---------------------------|-----------|-------------------------------|---------|---------|---------|---------|
| Parameter                 | Symbol    | Conditions                    | Minimum | Typical | Maximum | Units   |
| Reverse Stand-Off Voltage | $V_{RWM}$ |                               |         |         | 3.3     | V       |
| Reverse Breakdown Voltage | $V_{BR}$  | $I_T=1mA$                     | 3.7     |         |         | V       |
| Reverse Leakage Current   | $I_R$     | $V_{RWM}=3.3V, T=25^{\circ}C$ |         |         | 1       | $\mu A$ |
| Clamping Voltage          | $V_C$     | $I_{PP}=1A, t_p=8/20\mu s$    |         |         | 6.8     | V       |
| Clamping Voltage          | $V_C$     | $I_{PP}=7A, t_p=8/20\mu s$    |         | 14      | 16.8    | V       |
| Junction Capacitance      | $C_j$     | $V_R = 0V, f = 1MHz$          |         | 15      |         | pF      |

## Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

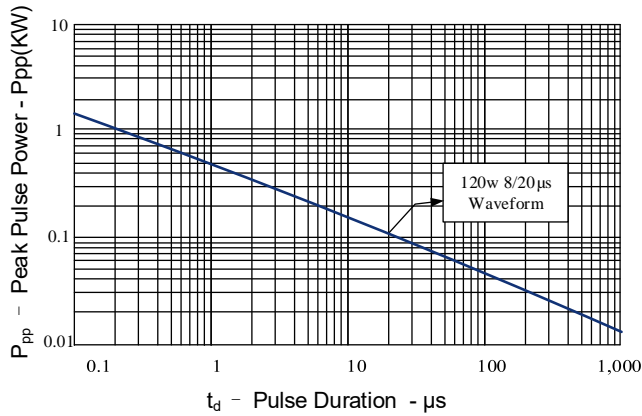


Figure 2: Power Derating Curve

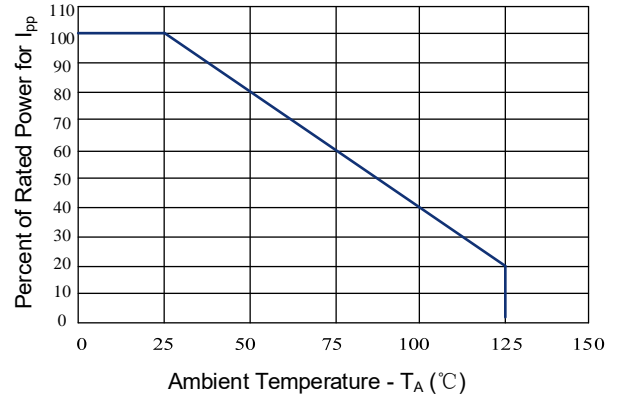


Figure 3: Clamping Voltage vs. Peak Pulse Current

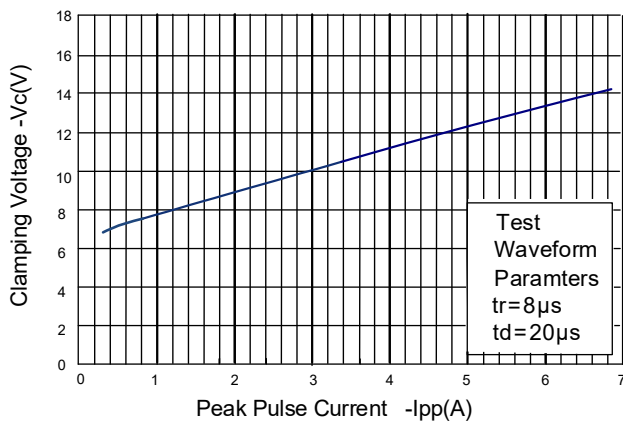


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

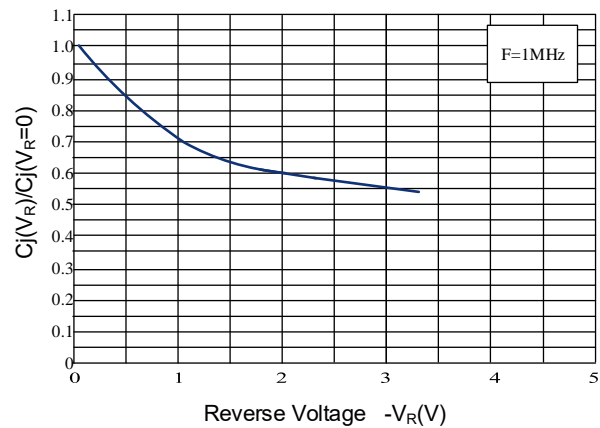


Figure 5: Pulse Waveform

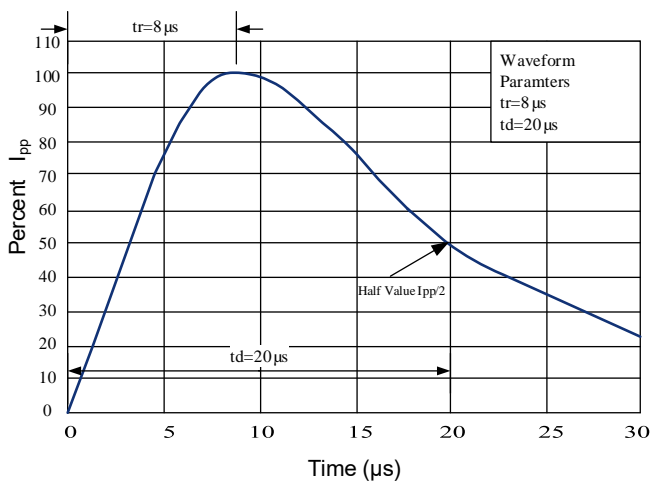
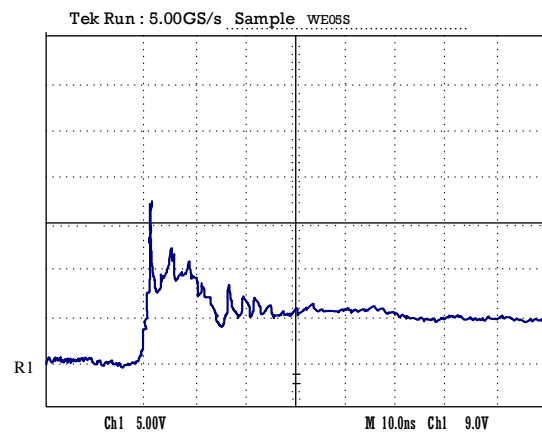
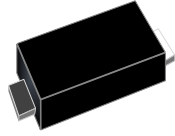
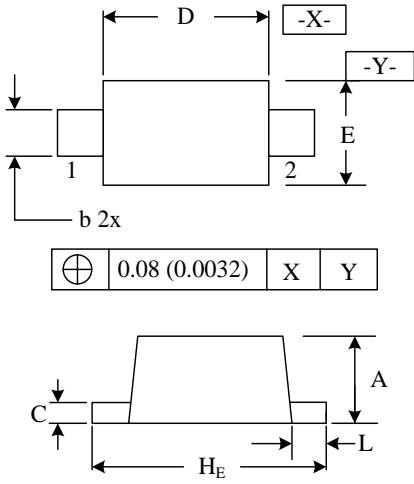
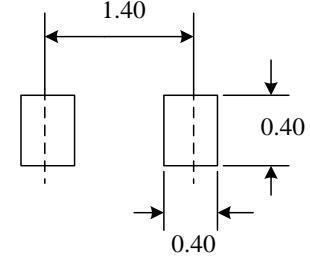


Figure 6: ESD Clamping( 8kV Contact per IEC 61000-4-2)



## Outline Drawing – SOD-523

| PACKAGE OUTLINE   |            | <br><b>SOD-523</b>                   |        |        |  |
|---|------------|---|--------|--------|--|
|  <p>⊕ 0.08 (0.0032) X Y</p>      |            | <b>DIMENSIONS</b>   |        |        |  |
| SYMBOL  | MILLIMETER |   | INCHES |        |  |
|   | MIN        | MAX   | MIN    | MAX    |  |
| A   | 0.50       | 0.70  | 0.020  | 0.028  |  |
| b   | 0.25       | 0.35  | 0.010  | 0.014  |  |
| C   | 0.07       | 0.20  | 0.0028 | 0.0079 |  |
| D   | 1.10       | 1.30  | 0.043  | 0.051  |  |
| E   | 0.70       | 0.90  | 0.028  | 0.035  |  |
| HE  | 1.50       | 1.70  | 0.059  | 0.067  |  |
| L   | 0.15       | 0.25  | 0.006  | 0.010  |  |
|  <p>DIMENSIONS: MILLIMETERS</p> |            | <b>Notes</b><br>1. Controlling Dimensions in Millimeters.<br>2. Dimensions are exclusive of mold flash and metal burrs. |        |        |  |

## Marking Codes

|              |            |
|--------------|------------|
| Part Number  | DW03D5-B-E |
| Marking Code | 3DB        |

## Package Information

Qty: 5k/Reel