

Features

- Small Body Outline Dimensions
- 50 Watts peak pulse power ($t_p = 8/20\mu s$)
- Protects one I/O or power line
- Low clamping voltage
- Working voltage: 5V
- Low leakage current



IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 (ESD) $\pm 30kV$ (air), $\pm 30kV$ (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 5A (8/20 μs)

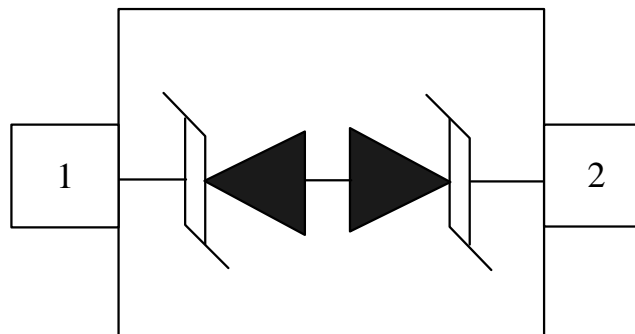
Mechanical Characteristics

- SOD-523 package
- Marking : Marking Code
- Packaging : Tape and Reel per EIA 481
- RoHS Compliant & HF

Applications

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

Schematic & PIN Configuration



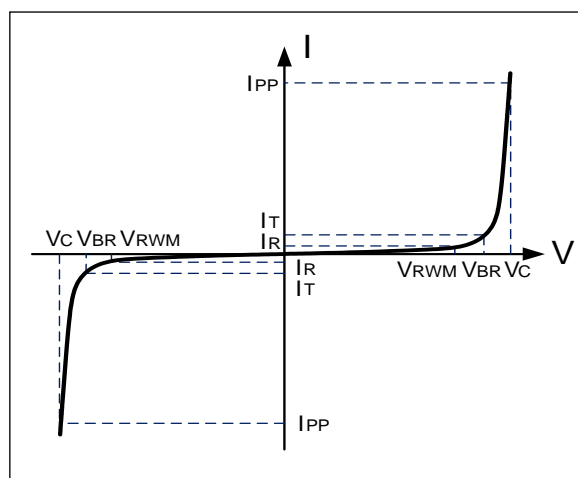
SOD-523 (Top View)

Absolute Maximum Rating

| Rating | Symbol | Value | Units |
|--|-----------|--------------|-------|
| Peak Pulse Power ($t_p = 8/20\mu s$) | P_{PP} | 50 | Watts |
| Peak Pulse Current ($t_p = 8/20\mu s$) | I_{PP} | 5 | A |
| Operating Temperature | T_J | -55 to + 125 | °C |
| Storage Temperature | T_{STG} | -55 to +150 | °C |

Electrical Parameters

| Symbol | Parameter |
|-----------|-------------------------------------|
| I_{PP} | Reverse Peak Pulse Current |
| V_C | Clamping Voltage @ I_{PP} |
| V_{RWM} | Reverse Stand-Off Voltage |
| I_R | Reverse Leakage Current @ V_{RWM} |
| V_{BR} | Breakdown Voltage @ I_T |
| I_T | Test Current |



Electrical Characteristics(T=25°C unless otherwise noted)

| WE05D5LV-BH | | | | | | |
|-----------------------------------|-----------|-------------------------------------|---------|---------|---------|----------|
| Parameter | Symbol | Conditions | Minimum | Typical | Maximum | Units |
| Reverse Stand-Off Voltage | V_{RWM} | | | | 5 | V |
| Reverse Breakdown Voltage | V_{BR} | $I_T=1mA$ | 5.6 | | | V |
| Reverse Leakage Current | I_R | $V_{RWM}=5V$ | | | 200 | nA |
| Clamping Voltage | V_C | $I_{PP}=5A, t_p=8/20\mu s$ | | 7.5 | 10 | V |
| ESD Clamping Voltage ¹ | V_C | $I_{PP} = 4A$ $t_p = 0.2/100ns$ | | 6.4 | | V |
| ESD Clamping Voltage ¹ | V_C | $I_{PP} = 16A$ $t_p = 0.2/100ns$ | | 9.6 | | V |
| Dynamic Resistance ^{1,2} | R_{DYN} | TLP=0.2/100ns | | 0.26 | | Ω |
| Junction Capacitance | C_j | $V_R=0V, f = 1MHz$ | | 8.5 | 9.5 | pF |

Note: 1、 TLP Setting : $t_p=100ns, t_r=0.2ns, I_{TLP}$ and V_{TLP} sample window: $t_1=70ns$ to $t_2=90ns$.

2、 Dynamic resistance calculated from $I_{PP}=4A$ to $I_{PP}=16A$ using “Best Fit”

Typical Characteristics

Figure 1: Peak Pulse Power Vs Pulse Time

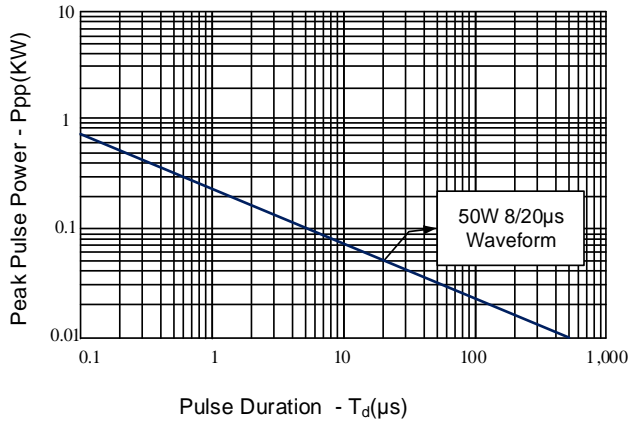


Figure 2: Power Derating Curve

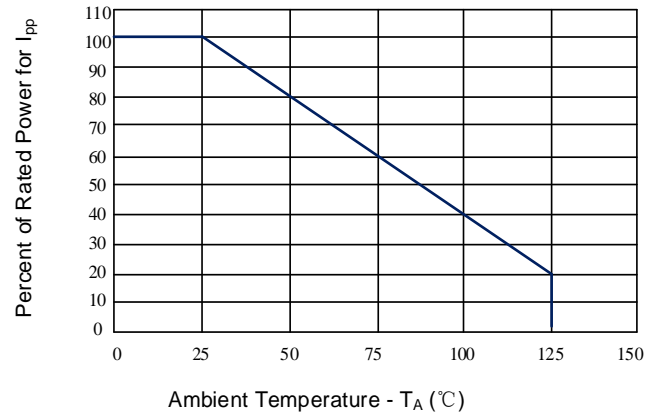


Figure 3: Clamping Voltage vs. Peak Pulse Current

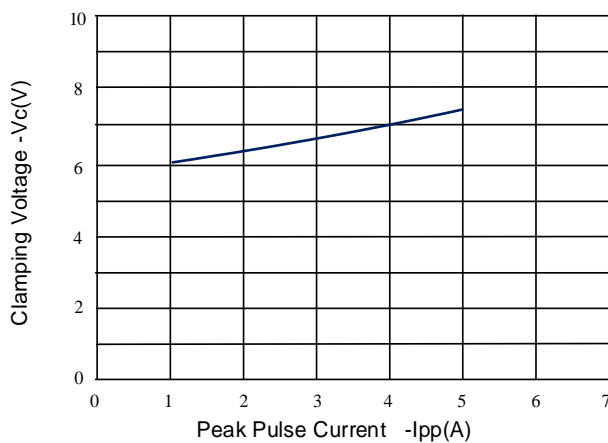


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

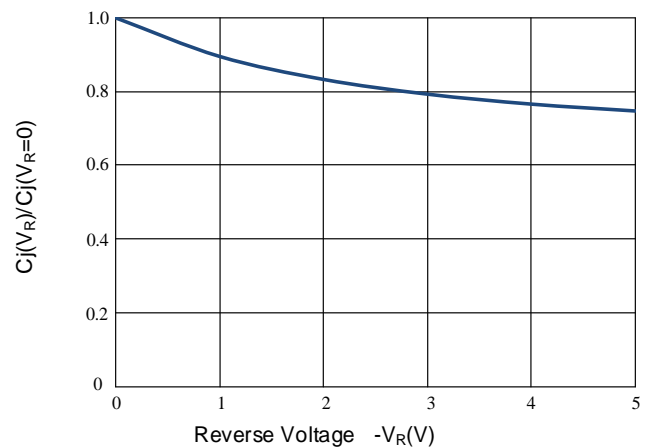


Figure 5: TLP Positive I-V Curve

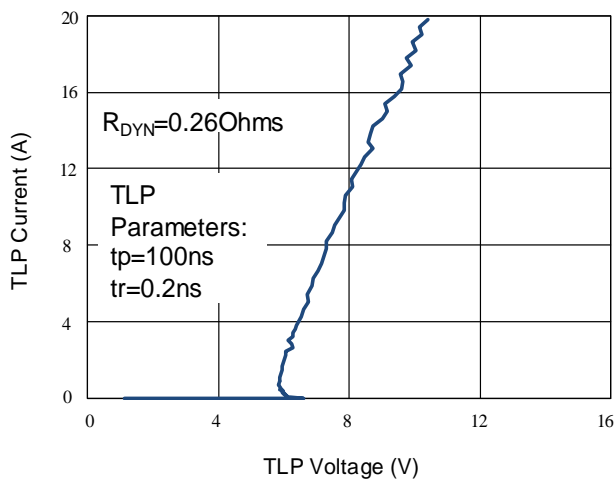
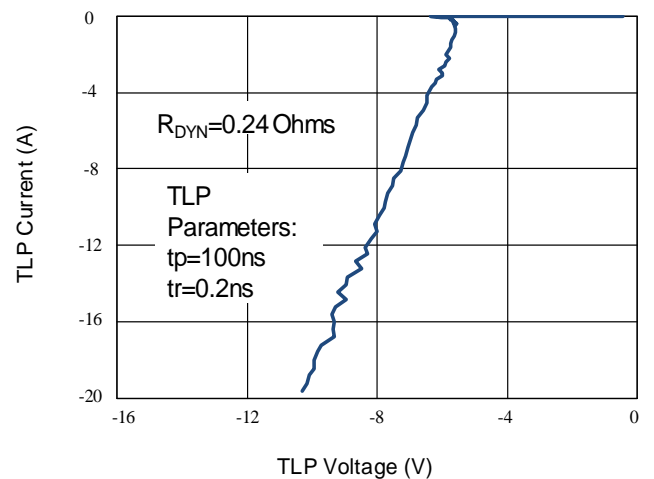
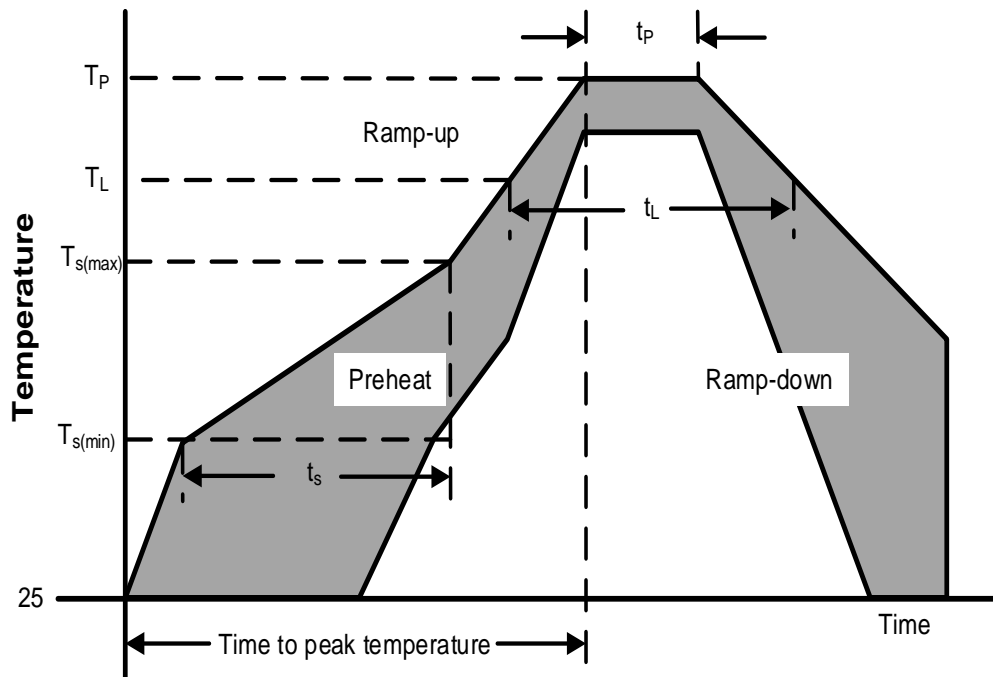


Figure 6: TLP Negative I-V Curve

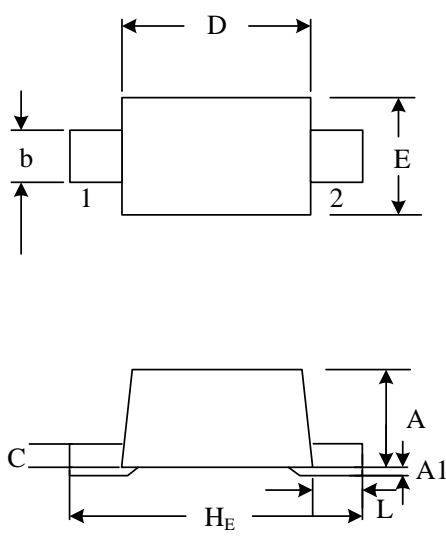
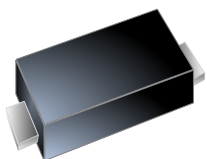
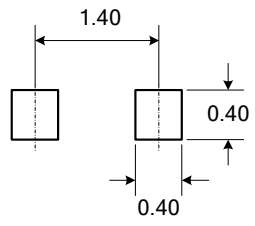


Soldering Parameters


| Reflow Condition | | Pb – Free assembly |
|--|----------------------------------|--------------------|
| Pre Heat | Temperature Min ($T_{s(min)}$) | 150°C |
| | Temperature Max ($T_{s(max)}$) | 200°C |
| | Time (min to max) (t_s) | 60 – 190 secs |
| Average ramp up rate (Liquidus Temp) (T_L) to peak | | 5°C/second max |
| $T_{s(max)}$ to T_L —Ramp-up Rate | | 5°C/second max |
| Reflow | Temperature (T_L) (Liquidus) | 217°C |
| | Temperature (t_L) | 60 – 150 seconds |
| Peak Temperature (T_P) | | 260+0/-5 °C |
| Time within actual peak Temperature (t_p) | | 20 – 40 seconds |
| Ramp-down Rate | | 5°C/second max |
| Time 25°C to peak Temperature (T_P) | | 8 minutes Max. |
| Do not exceed | | 280°C |



Outline Drawing –SOD-523

| <p>PACKAGE OUTLINE</p>  |  <p>SOD-523</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th rowspan="2">SYMBOL</th> <th colspan="2">MILLIMETERS</th> </tr> <tr> <th>MIN</th> <th>MAX</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>0.50</td> <td>0.70</td> </tr> <tr> <td>A1</td> <td>0.00</td> <td>0.07</td> </tr> <tr> <td>b</td> <td>0.25</td> <td>0.35</td> </tr> <tr> <td>C</td> <td>0.07</td> <td>0.20</td> </tr> <tr> <td>D</td> <td>1.10</td> <td>1.30</td> </tr> <tr> <td>E</td> <td>0.70</td> <td>0.90</td> </tr> <tr> <td>HE</td> <td>1.50</td> <td>1.70</td> </tr> <tr> <td>L</td> <td>0.15</td> <td>0.25</td> </tr> </tbody> </table> | SYMBOL | MILLIMETERS | | MIN | MAX | A | 0.50 | 0.70 | A1 | 0.00 | 0.07 | b | 0.25 | 0.35 | C | 0.07 | 0.20 | D | 1.10 | 1.30 | E | 0.70 | 0.90 | HE | 1.50 | 1.70 | L | 0.15 | 0.25 |
|---|--|--------|-------------|--|-----|-----|---|------|------|----|------|------|---|------|------|---|------|------|---|------|------|---|------|------|----|------|------|---|------|------|
| SYMBOL | MILLIMETERS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | MIN | MAX | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | 0.50 | 0.70 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1 | 0.00 | 0.07 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| b | 0.25 | 0.35 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C | 0.07 | 0.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D | 1.10 | 1.30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| HE | 1.50 | 1.70 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L | 0.15 | 0.25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  <p>DIMENSIONS: MILLIMETERS</p> | <p>Notes: Controlling Dimension: Millimeter.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Marking Codes

| | |
|--------------|---|
| Part Number | WE05D5LV-BH |
| Marking Code |  |

Package Information

Qty: 5k/Reel

CONTACT INFORMATION

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Specifications are subject to change without notice.
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.
Users should verify actual device performance in their specific applications.