

Features

- 310 Watts Peak Pulse Power per Line ($t_p = 8/20\mu s$)
- Protects one I/O or power line
- Low Clamping Voltage
- Working Voltage: 5 V
- Bidirectional Configuration
- AEC-Q101 Qualified



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) 17A (8/20 μs)

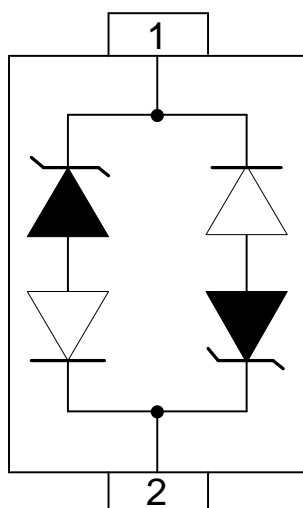
Mechanical Characteristics

- JEDEC SOD-323 package
- Marking : Marking Code
- Packaging : Tape and Reel per EIA 481
- RoHS Compliant

Applications

- Ethernet - 10/100/1000 Base T
- Cellular Phones
- Handheld - Wireless Systems
- Personal Digital Assistant (PDA)
- USB Interface

Schematic & PIN Configuration

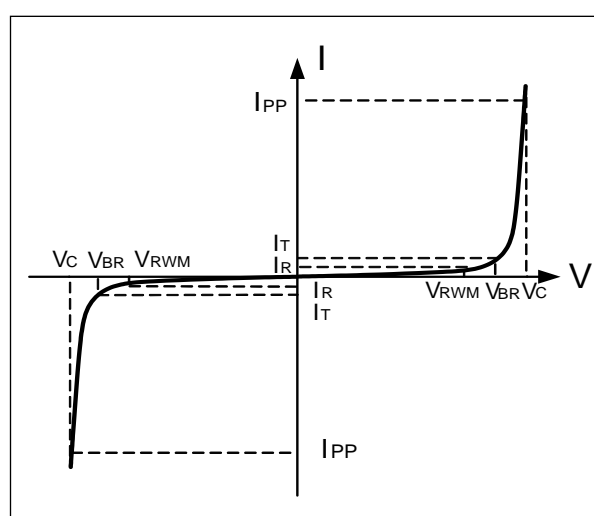


BIDIRECTIONAL

| Absolute Maximum Rating | | | |
|--|-----------|-------------|-------------|
| Rating | Symbol | Value | Units |
| Peak Pulse Power ($t_p = 8/20\mu s$) | P_{PP} | 310 | Watts |
| Peak Pulse Current ($t_p = 8/20\mu s$) | I_{PP} | 17 | A |
| Operating Temperature | T_J | -55 to +125 | $^{\circ}C$ |
| Storage Temperature | T_{STG} | -55 to +150 | $^{\circ}C$ |

Electrical Parameters (T=25°C)

| 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

| WS05DLC-B-AT | | | | | | |
|-----------------------------------|-----------|-------------------------------------|---------|---------|---------|----------|
| Parameter | Symbol | Conditions | Minimum | Typical | Maximum | Units |
| Reverse Stand-Off Voltage | V_{RWM} | | | | 5 | V |
| Reverse Breakdown Voltage | V_{BR} | $I_T = 1mA$ | 6 | | 9 | V |
| Reverse Leakage Current | I_R | $V_{RWM} = 5V, T = 25^{\circ}C$ | | | 500 | nA |
| Clamping Voltage | V_C | $I_{PP} = 17A, t_p = 8/20\mu s$ | | 15.5 | 18.3 | V |
| Dynamic Resistance ^{1,2} | R_{DYN} | TLP=0.2/100ns | | 0.3 | | Ω |
| ESD Clamping Voltage ¹ | V_C | $I_{PP} = 4A$ $t_p = 0.2/100ns$ | | 9.5 | | V |
| ESD Clamping Voltage ¹ | V_C | $I_{PP} = 16A$ $t_p = 0.2/100ns$ | | 13.2 | | V |
| Junction Capacitance | C_j | $V_R = 0V, f = 1MHz$ | | 1.0 | 1.35 | 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

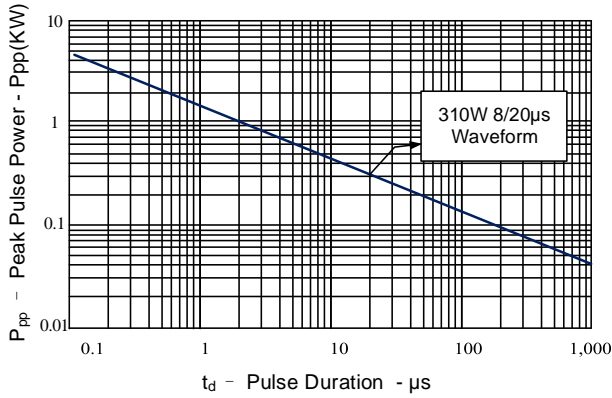


Figure 2: Power Derating Curve

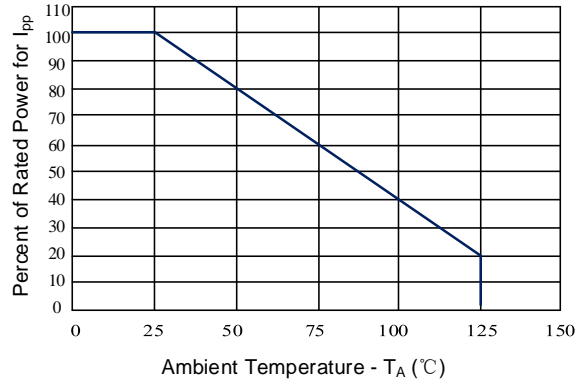


Figure 3: Clamping Voltage vs. Peak Pulse Current

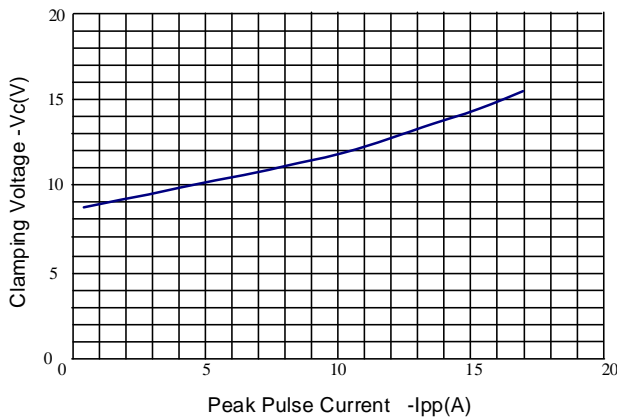


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

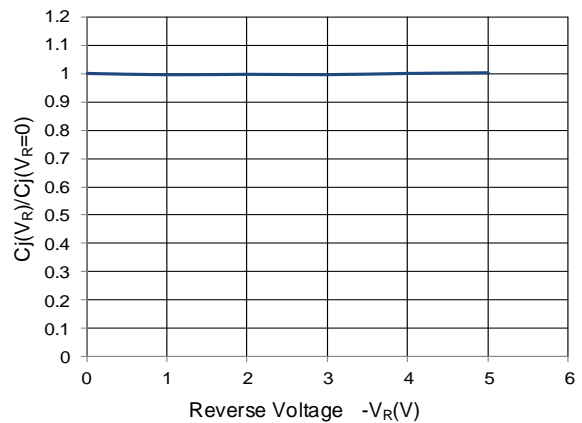


Figure 5: TLP Positive I-V Curve

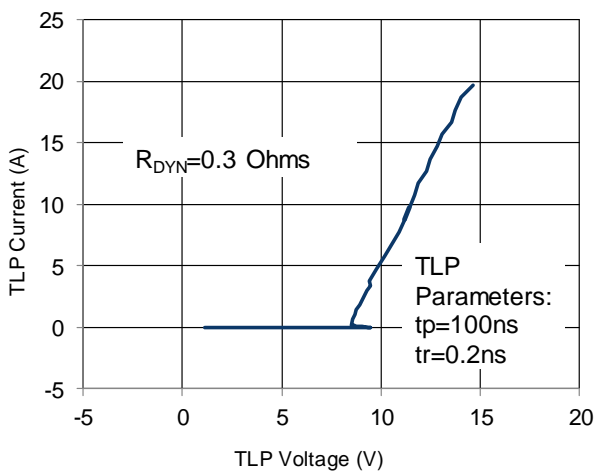
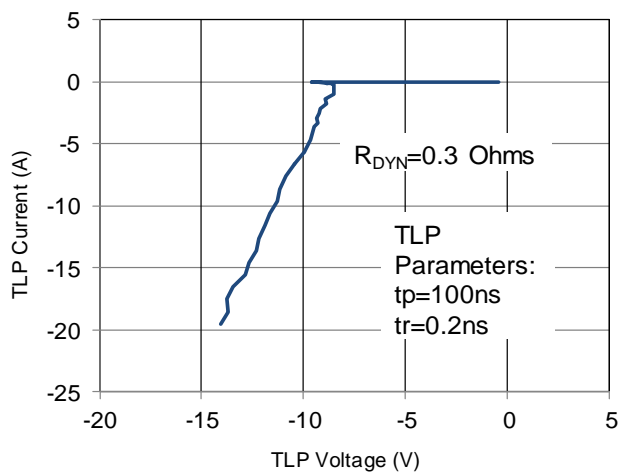
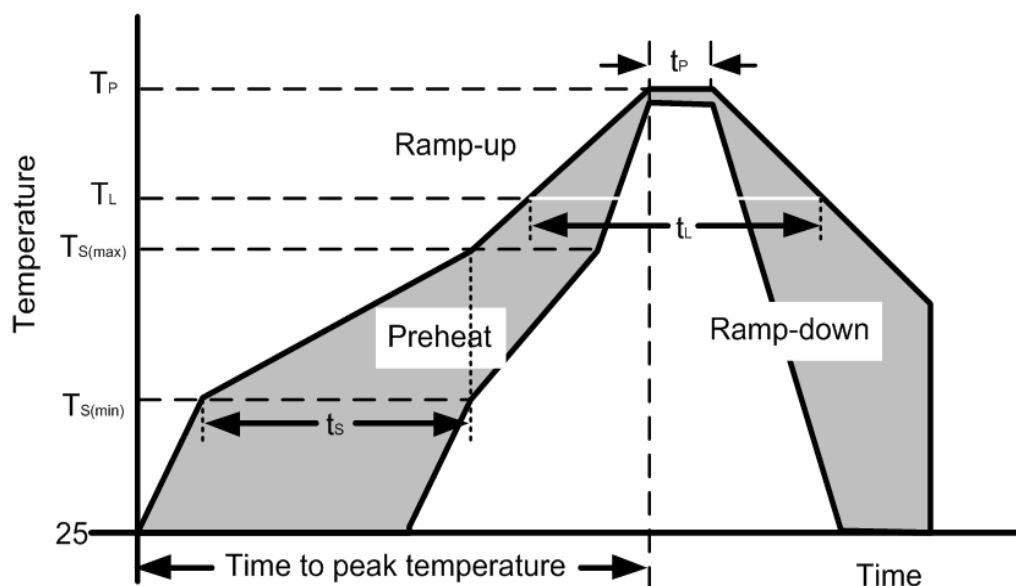


Figure 6: TLP Negative I-V Curve



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-323

PACKAGE OUTLINE

The drawing shows a top view with dimensions A (lead width), B (lead thickness), C (package width), and E (package height). It also shows a side view with dimensions D (lead height), F (lead thickness), L (lead length), and L1 (lead width). A third view shows dimension H (package height).

SOD-323

| DIMENSIONS | | | | |
|------------|-------------|------|----------|-------|
| SYMBOL | MILLIMETERS | | INCHES | |
| | MIN | MAX | MIN | MAX |
| A | 1.52 | 1.80 | 0.060 | 0.071 |
| B | 0.25 | 0.40 | 0.010 | 0.016 |
| C | 2.46 | 2.71 | 0.097 | 0.107 |
| D | 0.80 | 1.16 | 0.031 | 0.046 |
| E | 1.11 | 1.40 | 0.044 | 0.055 |
| F | 0.08 | 0.20 | 0.003 | 0.008 |
| L | 0.475 REF | | 0.019REF | |
| L1 | 0.25 | 0.40 | 0.010 | 0.016 |
| H | 0.00 | 0.10 | 0.000 | 0.004 |

MOUNTING PAD

The drawing shows a square mounting pad with a width of 0.118" (3.00mm) and a height of 0.031" (0.80mm). There are also smaller dimensions of 0.031" (0.80mm) for the lead attachment points.

Notes:
Controlling Dimension: Millimeter.

Marking Codes

| | |
|--------------|--------------|
| Part Number | WS05DLC-B-AT |
| Marking Code | |

Package Information

Qty: 3k/Reel

CONTACT INFORMATION

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For additional information, please contact your local Sales Representative.

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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.

单击下面可查看定价，库存，交付和生命周期等信息

[>>WAY-ON\(维安\)](#)