**3.0Amp Schottky Barrier Rectifiers**
**Reverse Voltage 150V and 200V Forward Current 3A**

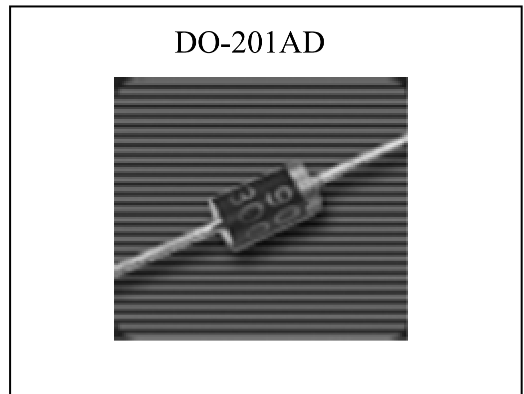
# SB3150 and SB3200

## Features

- Low forward voltage drop
- High current capability
- High reliability
- High surge current capability
- Epitaxial construction

## Outline

DO-201AD

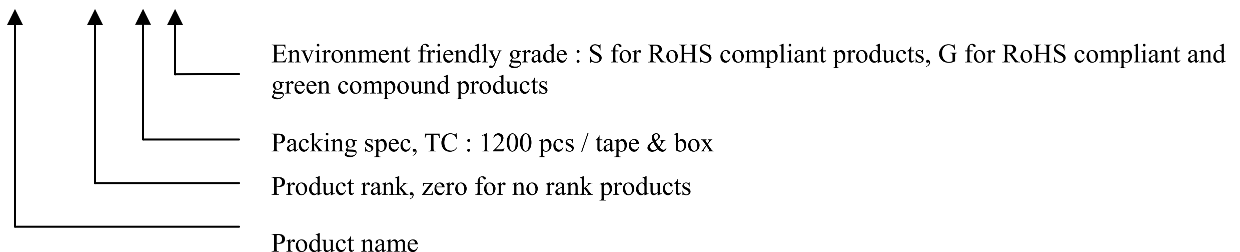


## Mechanical Data

- Case : JEDEC DO-201AD molded plastic body
- Epoxy : UL94V-0 rate flame retardant
- Terminals: Plated axial leads, solderable per MIL-STD-202, method 208 guaranteed
- Polarity: Color band denotes cathode end.
- Mounting Position : Any.
- Weight: 1.10 grams

## Ordering Information

| Device | Package | Shipping |
|---|---|---|
| SB3150- 0-TC-G | DO-201AD<br>(Pb-free lead plating and halogen-free package) | 1200 pcs / Tape & Box |
| SB3200- 0-TC-G | | |



## Maximum Ratings and Electrical Characteristics

(Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%)

<table>
<tr><th rowspan="2" colspan="2">Parameter</th><th rowspan="2">Symbol</th><th colspan="2">Type</th><th rowspan="2">Units</th></tr>
<tr><th>SB3150</th><th>SB3200</th></tr>
<tr><td colspan="2">Maximum repetitive peak reverse voltage</td><td>$V_{RRM}$</td><td>150</td><td>200</td><td>V</td></tr>
<tr><td colspan="2">Maximum RMS voltage</td><td>$V_{RMS}$</td><td>105</td><td>140</td><td>V</td></tr>
<tr><td colspan="2">Maximum DC blocking voltage</td><td>$V_{DC}$</td><td>150</td><td>200</td><td>V</td></tr>
<tr><td colspan="2">Maximum instantaneous forward voltage at 3A[1]</td><td>$V_F$</td><td colspan="2">0.89</td><td>V</td></tr>
<tr><td colspan="2">Maximum average forward rectified current</td><td>$I_{F(AV)}$</td><td colspan="2">3</td><td>A</td></tr>
<tr><td colspan="2">Peak forward surge current @8.3ms single half sine wave superimposed on rated load (JEDEC method)</td><td>$I_{FSM}$</td><td colspan="2">80</td><td>A</td></tr>
<tr><td rowspan="2">Maximum DC reverse current at rated DC blocking voltage[1]</td><td>$T_A$=25°C</td><td rowspan="2">$I_R$</td><td colspan="2">0.5</td><td rowspan="2">mA</td></tr>
<tr><td>$T_A$=100°C</td><td colspan="2">10</td></tr>
<tr><td colspan="2">Typical junction capacitance</td><td>$C_J$</td><td colspan="2">250</td><td>pF</td></tr>
<tr><td colspan="2">Typical thermal resistance</td><td>$R_{\theta JA}$</td><td colspan="2">20</td><td>℃/W</td></tr>
<tr><td colspan="2">Operating junction temperature range</td><td>$T_J$</td><td colspan="2">-55 ~ +150</td><td>℃</td></tr>
<tr><td colspan="2">Storage temperature range</td><td>$T_{STG}$</td><td colspan="2">-55 ~ +150</td><td>℃</td></tr>
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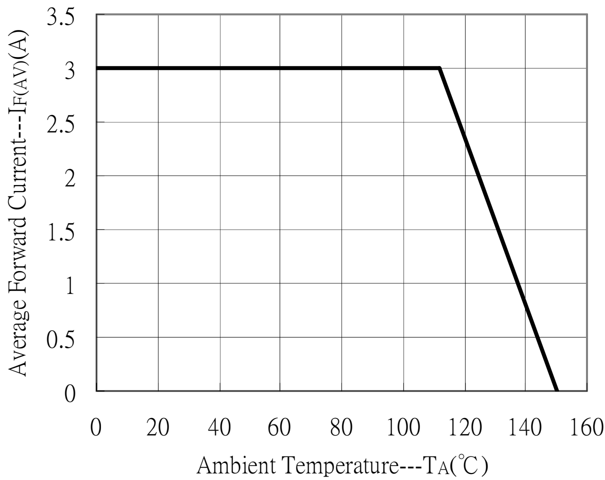
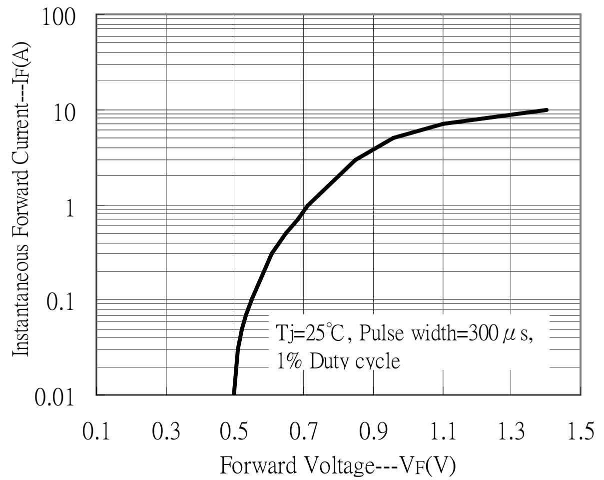
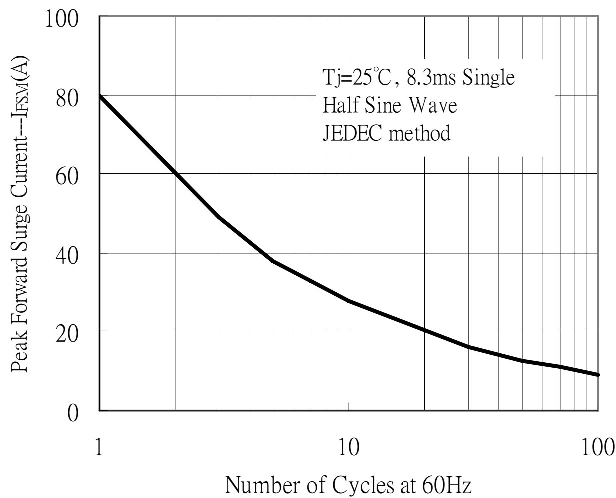
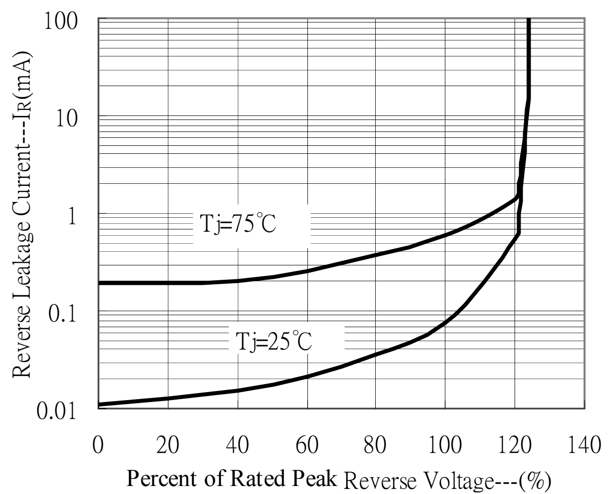
Note: 1.Pulse test: pulse width≤300μs, duty cycle≤2%

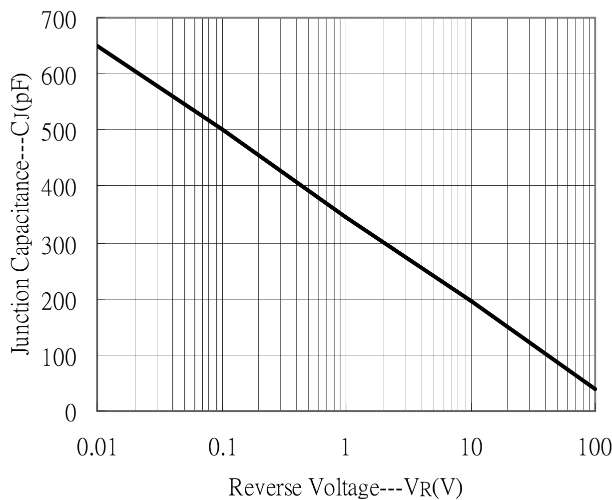
## Characteristic Curves



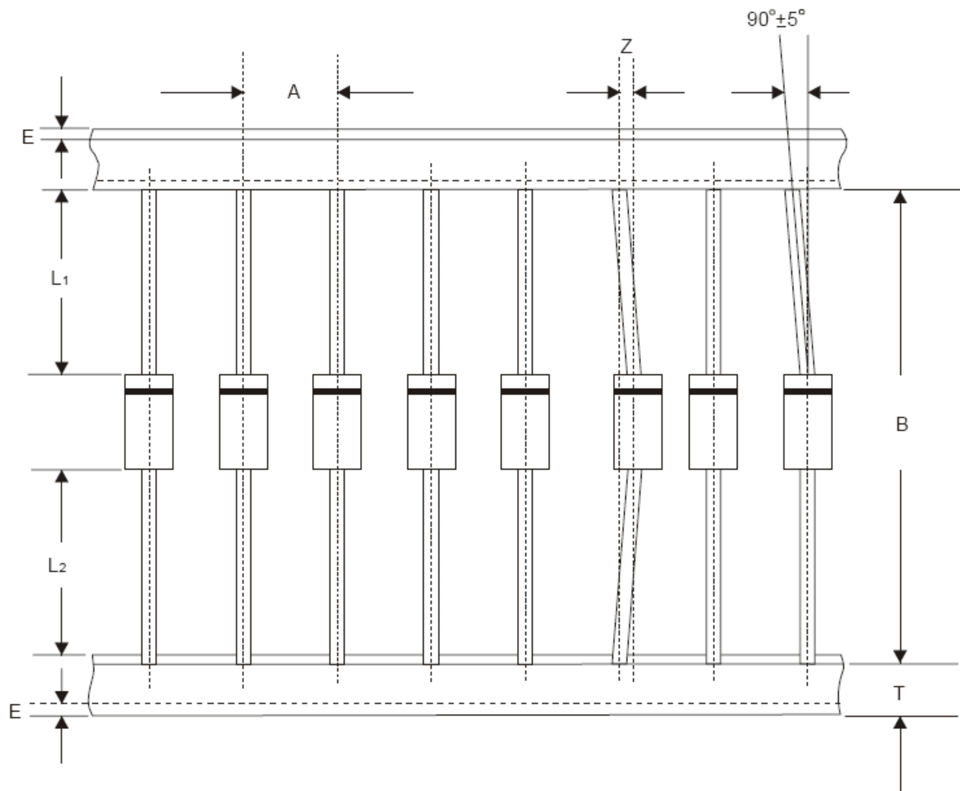



## Taping Dimension




| ITEM | SYMBOL | SPECIFICATIONS (mm) | SPECIFICATIONS (inch) |
|---|---|---|---|
| Component pitch | A | 10±0.5 | 0.197±0.020 |
| Inner tape pitch | B | $52.4^{+0.5}_{-0.5}$ | $2.063^{+0.059}_{-0}$ |
| Component alignment | Z | 1.2 max. | 0.048 max. |
| Tape width | T | 6.0±0.4 | 0.236±0.016 |
| Exposed adhesive | E | 0.8 max. | 0.032 max. |
| Body eccentricity | L1− L2 | 1.0 max. | 0.040 max. |

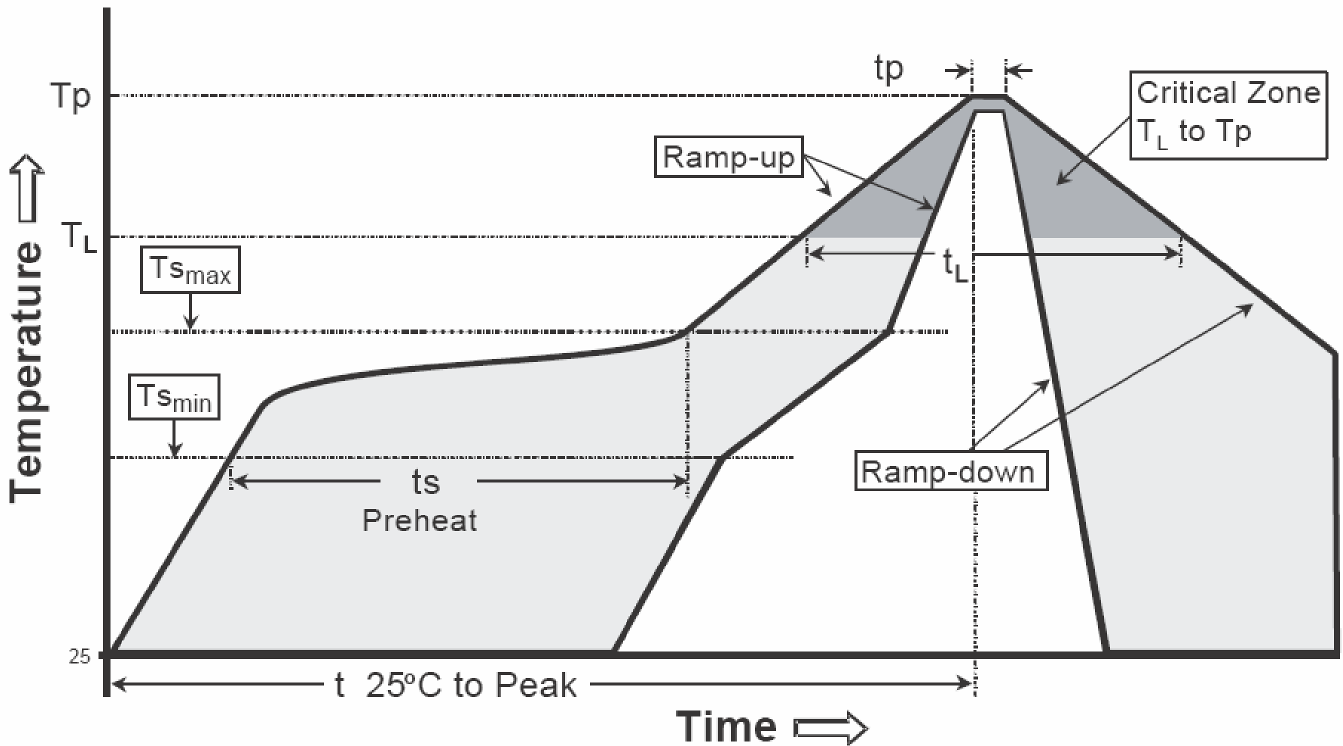
NOTES: 1. Each component lead shall be sandwiched between tapes for a minimum of 3.2mm (0.126").

2. The tolerance for cumulative pitch is 2.0mm/20 pitch.

## Recommended wave soldering condition

| Product | Peak Temperature | Soldering Time |
|---|---|---|
| Pb-free devices | 260 +0/-5 °C | 5 +1/-1 seconds |

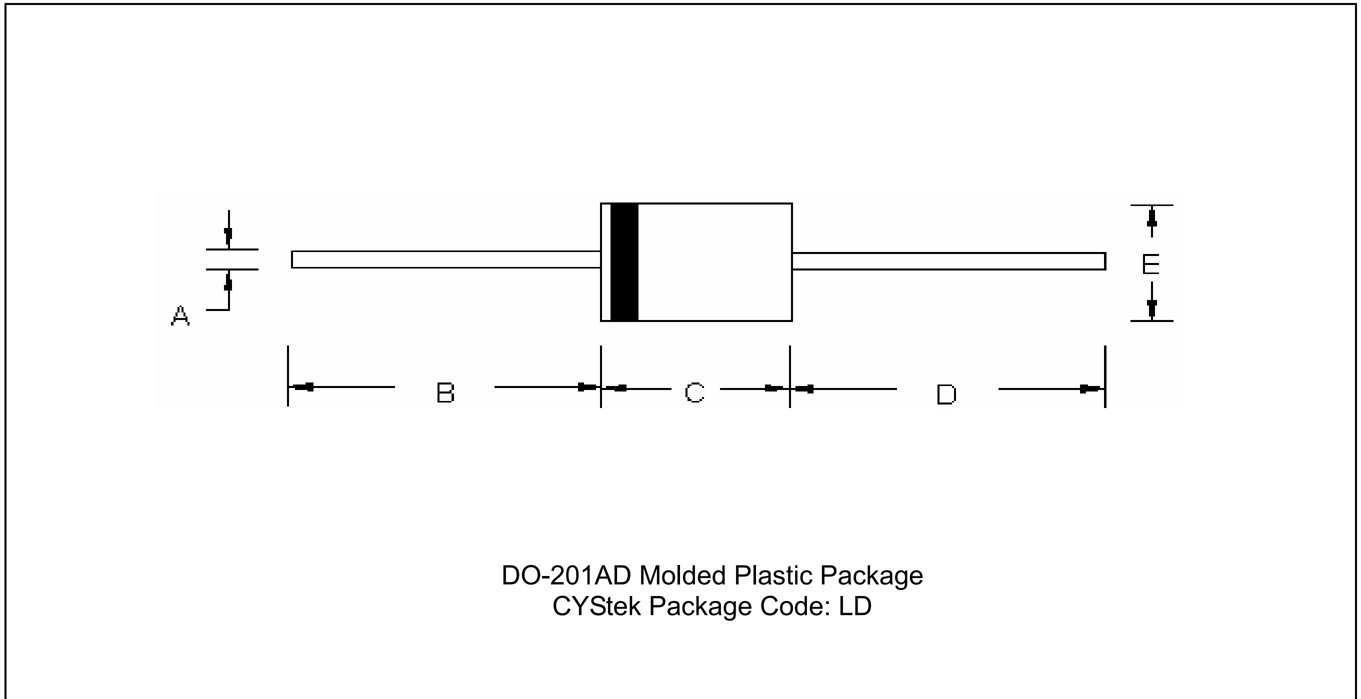
## Recommended temperature profile for IR reflow




| Profile feature | Sn-Pb eutectic Assembly | Pb-free Assembly |
|---|---|---|
| Average ramp-up rate (Tsmax to Tp) | 3°C/second max. | 3°C/second max. |
| Preheat<br>−Temperature Min(Ts min)<br>−Temperature Max(Ts max)<br>−Time(ts min to ts max) | 100°C<br>150°C<br>60-120 seconds | 150°C<br>200°C<br>60-180 seconds |
| Time maintained above:<br>−Temperature (TL)<br>− Time (tL) | 183°C<br>60-150 seconds | 217°C<br>60-150 seconds |
| Peak Temperature(TP) | 240 +0/-5 °C | 260 +0/-5 °C |
| Time within 5°C of actual peak temperature(tp) | 10-30 seconds | 20-40 seconds |
| Ramp down rate | 6°C/second max. | 6°C/second max. |
| Time 25 °C to peak temperature | 6 minutes max. | 8 minutes max. |

Note : All temperatures refer to topside of the package, measured on the package body surface.

## DO-201AD Dimension




DO-201AD Molded Plastic Package
CYStek Package Code: LD

| DIM | Inches | | Millimeters | | DIM | Inches | | Millimeters | |
|---|---|---|---|---|---|---|---|---|---|
| | Min. | Max. | Min. | Max. | | Min. | Max. | Min. | Max. |
| A | φ0.048 | φ0.052 | φ1.20 | φ1.30 | D | 1.000 | - | 25.40 | - |
| B | 1.000 | - | 25.40 | - | E | φ0.190 | φ0.210 | φ4.80 | φ5.30 |
| C | 0.285 | 0.375 | 7.20 | 9.50 | | | | | |

Notes : 1.Controlling dimension : millimeters.
2.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
3.If there is any question with packing specification or packing method, please contact your local CYStek sales office.

Material :

- Lead : Axial leads, solderable per MIL-STD-202, Method 208 guaranteed.
- Mold Compound : Epoxy resin family, flammability solid burning class: UL94V-0

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