

5.0Amp Schottky Barrier Rectifiers

Reverse Voltage 20V to 60V Forward Current 5A

SB520 thru SB560

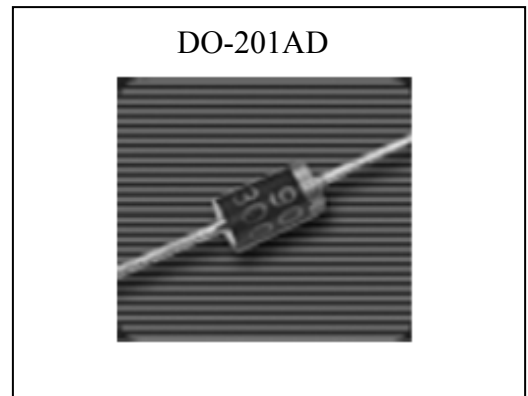
Features

- Guard ring for over voltage protection.
- Plastic package has UL flammability classification 94V-0
- Low power loss, high efficiency
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications

Mechanical Data

- Case : JEDEC DO-201AD molded plastic body
- Epoxy : UL94V-0 rate flame retardant
- Terminals: Plated axial leads, solderable per MIL-STD-750 method 2026. High temperature soldering guaranteed: 250°C/10seconds, 0.375"(9.5mm) lead length, 5lbs(2.3kg) tension
- Polarity: Color band denotes cathode end.
- Mounting Position : Any.
- Weight: 0.041 oz., 1.15 gram

Outline



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%)

| Parameter | Symbol | Type | | | | | Units |
|---|-----------------------|------------|-------|-------|------------|-------|-------|
| | | SB520 | SB530 | SB540 | SB550 | SB560 | |
| Maximum repetitive peak reverse voltage | V _{RRM} | 20 | 30 | 40 | 50 | 60 | V |
| Maximum RMS voltage | V _{RMS} | 14 | 21 | 28 | 35 | 42 | V |
| Maximum DC blocking voltage | V _{DC} | 20 | 30 | 40 | 50 | 60 | V |
| Maximum instantaneous forward voltage at 5A ¹ | V _F | 0.55 | | | 0.67 | | V |
| Maximum average forward rectified current @ 0.375"(9.5mm) lead length (see Fig 1) | I _{F(AV)} | 5 | | | | | A |
| Peak forward surge current @8.3ms single half sine wave superimposed on rated load (JEDEC method) at rated TL | I _{FSM} | 150 | | | | | A |
| Maximum DC reverse current at rated DC blocking voltage ¹ | T _A =25°C | 0.5 | | | | | mA |
| | T _A =100°C | 50 | | 25 | | | |
| Typical thermal resistance ² | R _{θJA} | 25 | | | | | °C/W |
| | R _{θJL} | 8 | | | | | |
| Operating junction temperature range | T _J | -55 ~ +125 | | | -55 ~ +150 | | °C |
| Storage temperature range | T _{STG} | -55 ~ +150 | | | | | °C |

Note: 1.Pulse test: pulse width≤300μs, duty cycle≤1%

2.Thermal resistance, junction to lead, vertical PCB mounted, 0.375"(9.5mm) lead length

Characteristic Curves

Fig. 1 - Forward Current Derating Curve

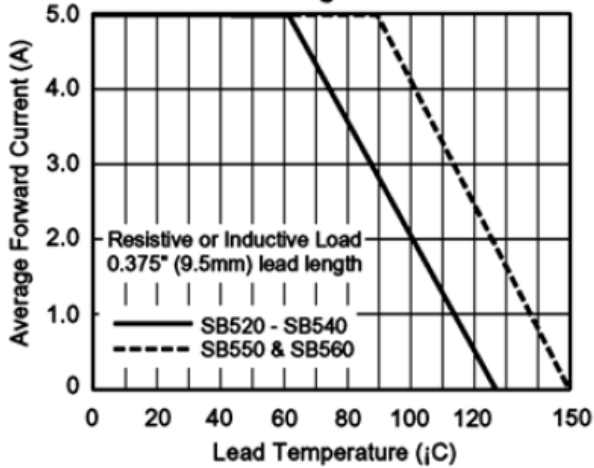


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

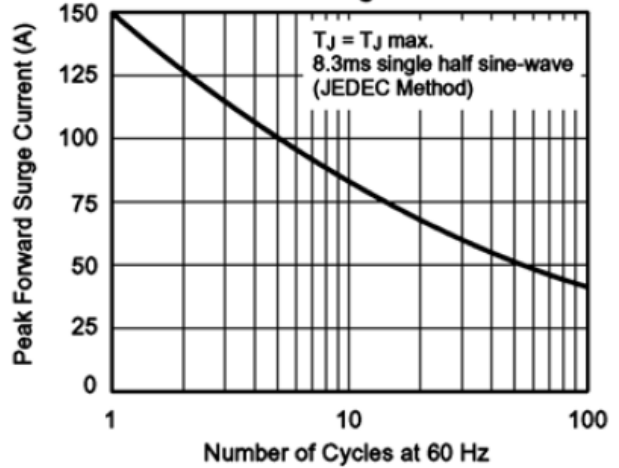


Fig. 3 - Typical Instantaneous Forward Characteristics

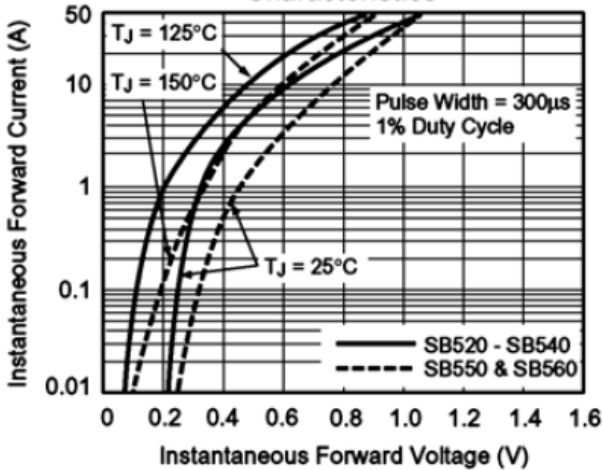


Fig. 4 - Typical Reverse Characteristics

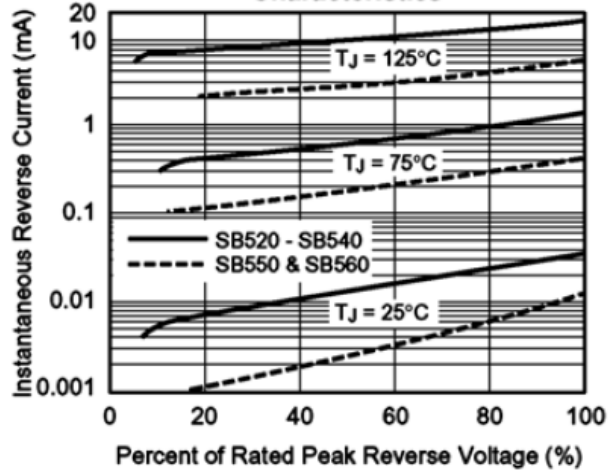


Fig. 5 - Typical Junction Capacitance

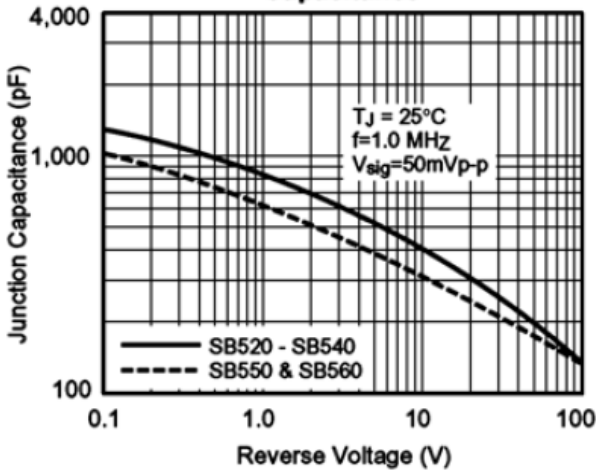
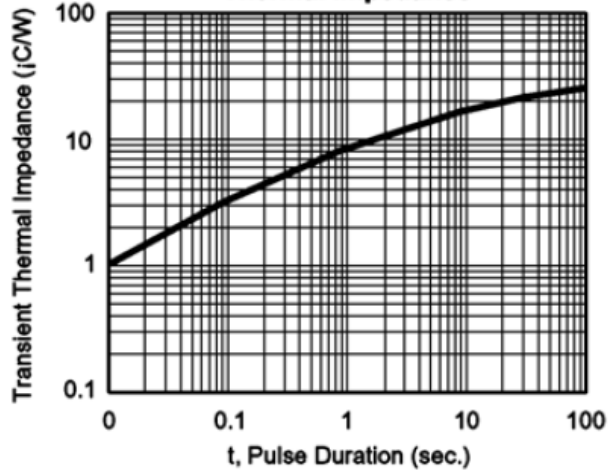
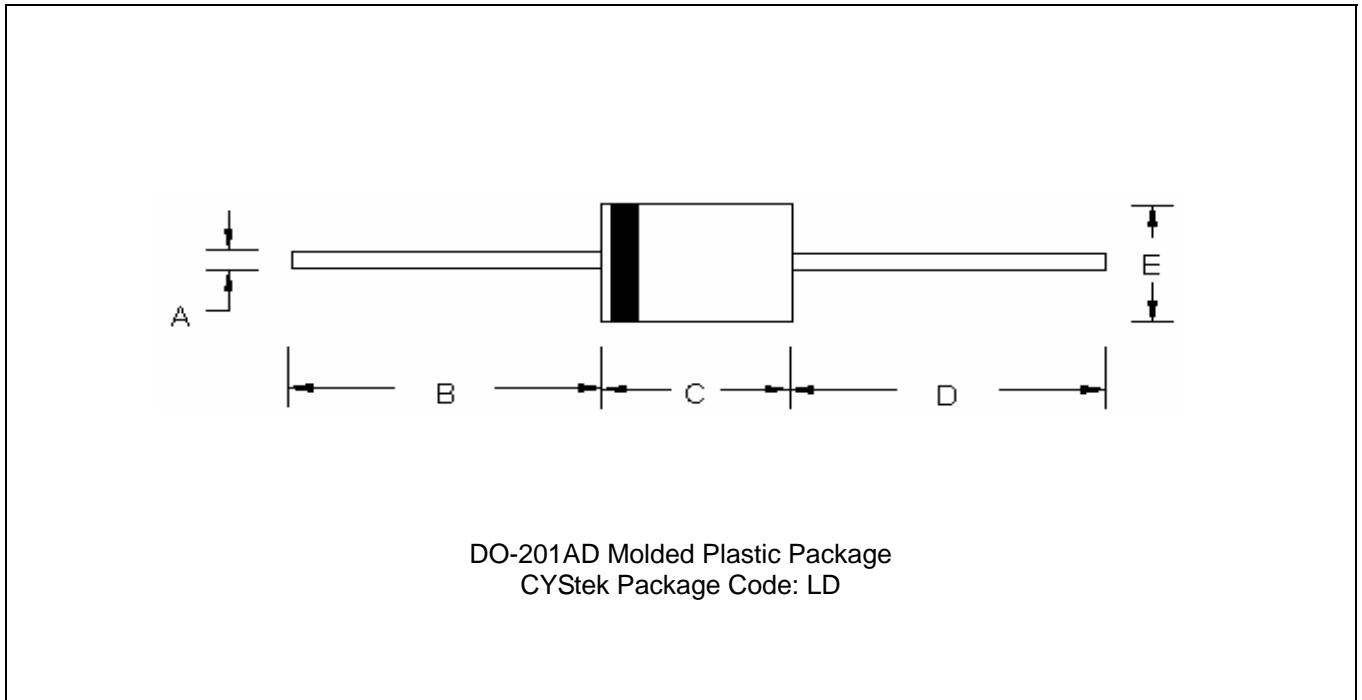


Fig. 6 - Typical Transient Thermal Impedance



DO-201AD Dimension



| 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-750, Method 2026 guaranteed.
- Mold Compound : Epoxy resin family, flammability solid burning class: UL94V-0

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