

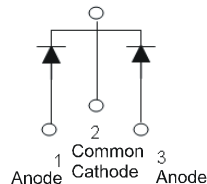
## Product Summary

| $V_{RRM}$ (V) | $I_o$ (A)                 | $V_F(MAX)$ (V)<br>@ +25°C | $I_R(MAX)$ (mA)<br>@ +25°C |
|---------------|---------------------------|---------------------------|----------------------------|
| 100           | 5 (Per Leg)<br>10 (Total) | 0.84                      | 0.2                        |

## Description and Applications

The SBR10100CTB provides very low  $V_F$  and excellent reverse leakage stability at high temperatures. It is ideal for use as a rectifier, freewheel diode or blocking diode in:

- DC-DC Converters
- AC-DC Adaptors



Package Pin Out Configuration

## Features and Benefits

- Patented Trench SBR<sup>®</sup> Technology Provides Superior Avalanche Capability Versus Schottky Diodes, Ensuring more Rugged and Reliable End Applications
- Reduced Ultra-Low Forward Voltage Drop ( $V_F$ ); Better Efficiency and Cooler Operation
- Reduced High Temperature Reverse Leakage; Increased Reliability Against Thermal Runaway Failure in High Temperature Operation
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

## Mechanical Data

- Case: TO263AB
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208<sup>③</sup>
- Polarity: See Below
- Weight: 1.6grams (Approximate)

TO263AB (Standard)



Top View

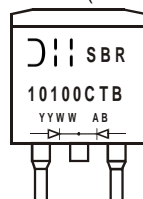
## Ordering Information (Note 4)

| Part Number    | Case               | Packaging         |
|----------------|--------------------|-------------------|
| SBR10100CTB    | TO263AB (Standard) | 50 Pieces/Tube    |
| SBR10100CTB-13 | TO263AB (Standard) | 800 / Tape & Reel |

- Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
  2. See [http://www.diodes.com/quality/lead\\_free/](http://www.diodes.com/quality/lead_free/) for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

## Marking Information

TO263AB (Standard)



- ⌋⌋ = Manufacturer's Marking
- SBR10100CTB = Product Type Marking Code
- AB = Foundry and Assembly Code
- YYWW = Date Code Marking
- YY = Last Two Digits of Year (ex: 19 = 2019)
- WW = Week (01 to 53)

### Maximum Ratings (Per Leg) (@T<sub>A</sub> = +25°C unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

| Characteristic  | Symbol           | Value | Unit |
|---|------------------|-------|------|
| Peak Repetitive Reverse Voltage   | V <sub>RRM</sub> | 100   | V    |
| Working Peak Reverse Voltage  | V <sub>RWM</sub> |       |      |
| DC Blocking Voltage   | V <sub>RM</sub>  |       |      |
| Average Rectified Output Current  | I <sub>O</sub>   | 10    | A    |
| Non-Repetitive Peak Forward Surge Current 8.3ms<br>Single Half Sine-Wave Superimposed on Rated Load | I <sub>FSM</sub> | 80    | A    |

### Thermal Characteristics (Per Leg)

| Characteristic                          | Symbol                            | Value       | Unit |
|---|-----------------------------------|-------------|------|
| Maximum Thermal Resistance (Note 5)     | R <sub>θJC</sub>                  | 6           | °C/W |
| Operating and Storage Temperature Range | T <sub>J</sub> , T <sub>STG</sub> | -65 to +175 | °C   |

### Electrical Characteristics (Per Leg) (@T<sub>A</sub> = +25°C unless otherwise specified.)

| Characteristic                 | Symbol         | Min | Typ  | Max  | Unit | Test Condition                                 |
|--------------------------------|----------------|-----|------|------|------|--|
| Forward Voltage Drop (Per Leg) | V <sub>F</sub> | -   | 0.77 | 0.84 | V    | I <sub>F</sub> = 5A, T <sub>J</sub> = +25°C    |
|                                |                |     | -    | 0.71 |      | I <sub>F</sub> = 5A, T <sub>J</sub> = +125°C   |
| Leakage Current (Note 6)       | I <sub>R</sub> | -   | -    | 0.2  | mA   | V <sub>R</sub> = 100V, T <sub>J</sub> = +25°C  |
|                                |                |     | 2    | 40   |      | V <sub>R</sub> = 100V, T <sub>J</sub> = +125°C |

Notes: 5. Device mounted on 2-inch sq. Al board, minimum recommended pad layout as shown on Diodes Incorporated's suggested pad layout document, which can be found on our website at <http://www.diodes.com/package-outlines.html>.  
6. Short duration pulse test used to minimize self-heating effect.

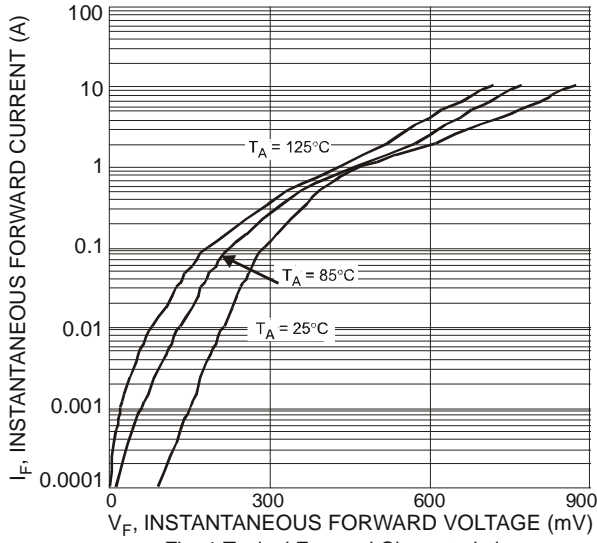


Fig. 1 Typical Forward Characteristics

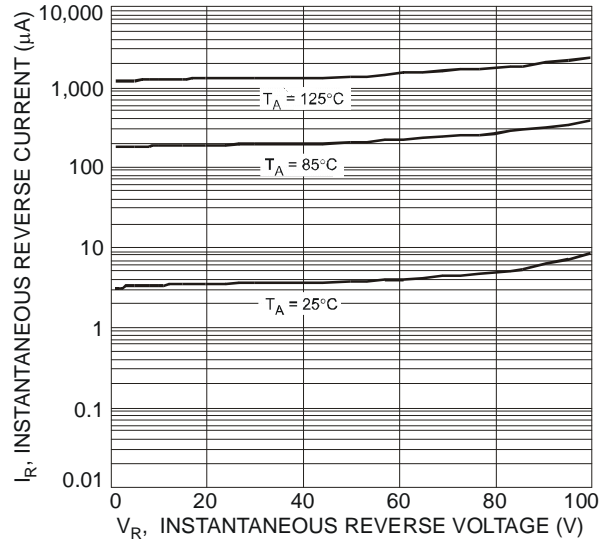


Fig. 2 Typical Reverse Characteristics

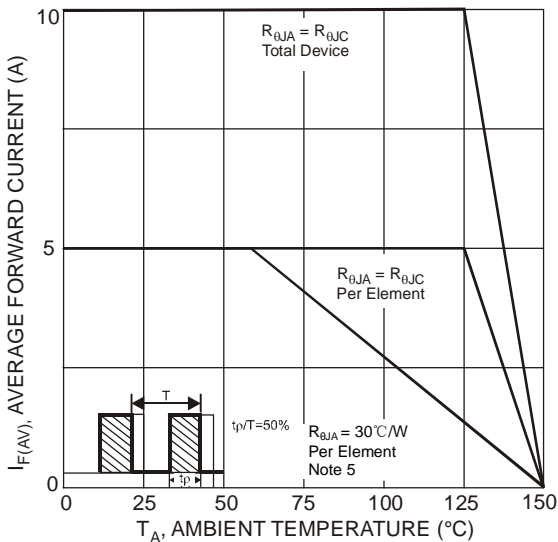
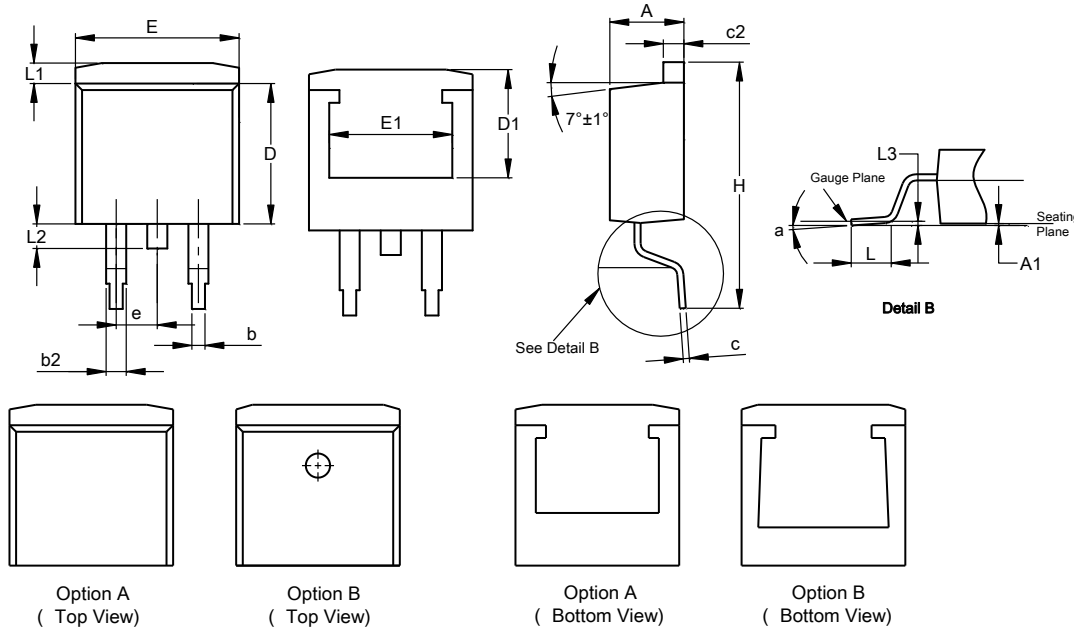


Fig. 3 Forward Current Derating Curve

**Package Outline Dimensions**

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**TO263AB (Standard)**



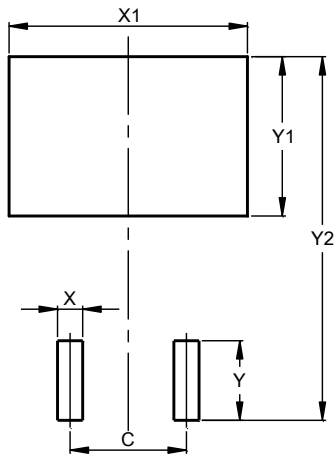
| TO263AB (Standard) |          |       |       |
|--------------------|----------|-------|-------|
| Dim                | Min      | Max   | Typ   |
| A                  | 4.07     | 4.82  | -     |
| A1                 | 0.00     | 0.25  | -     |
| b                  | 0.51     | 0.99  | -     |
| b2                 | 1.15     | 1.77  | -     |
| c                  | 0.356    | 0.73  | -     |
| c2                 | 1.143    | 1.65  | -     |
| D                  | 8.39     | 9.65  | -     |
| D1                 | 6.55     | 7.80  | -     |
| e                  | 2.54 TYP |       | -     |
| E                  | 9.66     | 10.66 | -     |
| E1                 | 6.23     | 8.23  | -     |
| H                  | 14.61    | 15.87 | -     |
| L                  | 1.78     | 2.79  | -     |
| L1                 | -        | 1.67  | -     |
| L2                 | -        | 1.77  | -     |
| L3                 | -        | -     | 0.254 |
| a                  | 0°       | 8°    | -     |

**All Dimensions in mm**

**Suggested Pad Layout**

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**TO263AB (Standard)**



| Dimensions | Value (in mm) |
|------------|---------------|
| C          | 5.08          |
| X          | 1.10          |
| X1         | 10.41         |
| Y          | 3.50          |
| Y1         | 7.01          |
| Y2         | 15.99         |

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