

Features

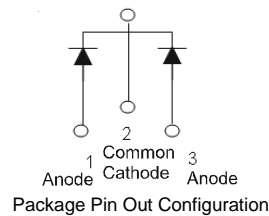
- Low Forward Voltage Drop
- Low Leakage Current
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 175°C Operating Junction Temperature
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **Also Available in Green Molding Compound (Note 2)**

Mechanical Data

- Case: TO263 (D²Pak)
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 ^{Ⓔ3}
- Weight: 1.6 grams (approximate)



Top View

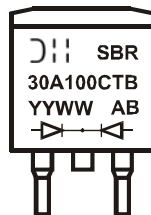


Ordering Information (Notes 2 & 3)

| Part Number | Case | Packaging |
|-------------------|----------------------------|-----------------|
| SBR30A100CTB | TO263 (D ² Pak) | 50 Pieces/Tube |
| SBR30A100CTB-13 | TO263 (D ² Pak) | 800/Tape & Reel |
| SBR30A100CTB-G | TO263 (D ² Pak) | 50 Pieces/Tube |
| SBR30A100CTB-13-G | TO263 (D ² Pak) | 800/Tape & Reel |

- Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes
 2. For Green Molding Compound version part numbers, add "-G" suffix to part number above. Examples: SBR30A100CTB-G.
 3. For packaging details, go to our website at <http://www.diodes.com>.

Marking Information



SBR30A100CTB = Product Type Marking Code
 AB = Foundry and Assembly Code
 YYWW = Date Code Marking
 YY = Last two digits of year (ex: 09 = 2009)
 WW = Week (01 - 53)

Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

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

| Characteristic | Symbol | Value | Unit |
|--|-----------|-------|------|
| Peak Repetitive Reverse Voltage | V_{RRM} | 100 | V |
| Working Peak Reverse Voltage | V_{RWM} | | |
| DC Blocking Voltage | V_{RM} | | |
| Average Rectified Output Current @ $T_C = 150^\circ\text{C}$ | I_O | 15 | A |
| Per Leg | | 30 | |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I_{FSM} | 180 | A |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|--|-----------------|-------------|--------------------|
| Maximum Thermal Resistance (per leg) | $R_{\theta JC}$ | 3 | $^\circ\text{C/W}$ |
| Thermal Resistance Junction to Case (Note 4) | | | |
| Operating and Storage Temperature Range | T_J, T_{STG} | -65 to +150 | $^\circ\text{C}$ |

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|--------------------------------|--------|-----|------|------|---------------|---|
| Forward Voltage Drop (per leg) | V_F | - | 0.78 | 0.85 | V | $I_F = 15\text{A}, T_J = 25^\circ\text{C}$ $I_F = 15\text{A}, T_J = 125^\circ\text{C}$ |
| Leakage Current (Note 5) | I_R | - | - | 100 | μA | $V_R = 100\text{V}, T_J = 25^\circ\text{C}$ |
| | | | | 10 | mA | $V_R = 100\text{V}, T_J = 125^\circ\text{C}$ |

Notes: 4. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com>.
5. Short duration pulse test used to minimize self-heating effect.

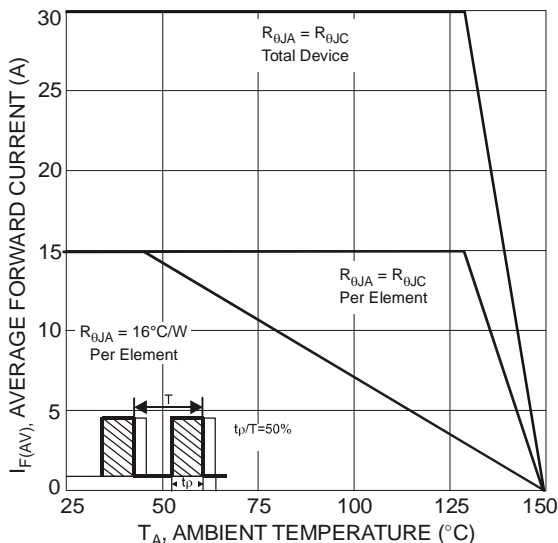


Fig. 1 Forward Current Derating Curve

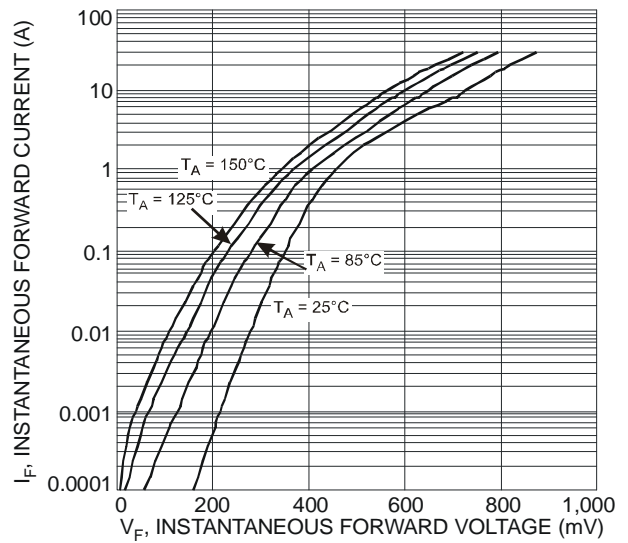
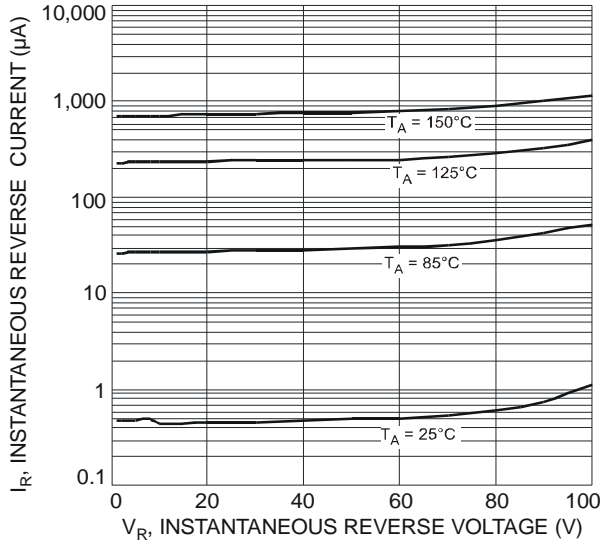
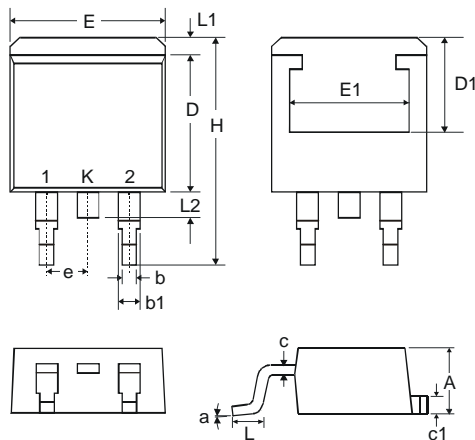


Fig. 2 Typical Forward Characteristics

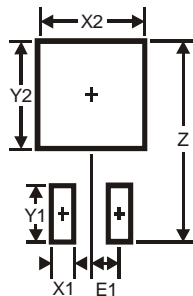


Package Outline Dimensions



| TO263 (D ² Pak) | | |
|----------------------------|----------|-------|
| Dim | Min | Max |
| A | 4.07 | 4.82 |
| b | 0.51 | 0.99 |
| b1 | 1.15 | 1.77 |
| c | 0.356 | 0.58 |
| c1 | 1.143 | 1.65 |
| D | 8.39 | 9.65 |
| D1 | 6.55 | — |
| E | 9.66 | 10.66 |
| E1 | 6.23 | — |
| e | 2.54 Typ | |
| H | 14.61 | 15.87 |
| L | 1.78 | 2.79 |
| L1 | — | 1.67 |
| L2 | — | 1.77 |
| a | 0° | 8° |
| All Dimensions in mm | | |

Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| Z | 16.9 |
| X1 | 1.1 |
| X2 | 10.8 |
| Y1 | 3.5 |
| Y2 | 7.01 |
| E1 | 2.5 |

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