

Features

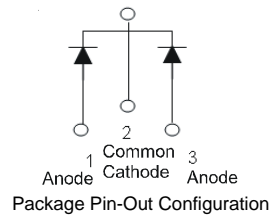
- Designed as Bypass Diodes for Solar Panels
- Selectively Rated for 200°C Maximum Junction Temperature for High Thermal Reliability.
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 175°C Operating Junction Temperature
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **Also Available in Green Molding Compound (Note 2)**

Mechanical Data

- Case: 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
- Weight: 1.6 grams (approximate)



Top View

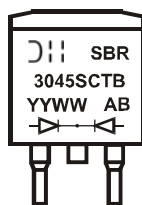


Ordering Information (Notes 2 & 3)

| Part Number | Case | Packaging |
|------------------|--------------------|-----------------|
| SBR3045SCTB | D ² Pak | 50 pieces/tube |
| SBR3045SCTB-G | D ² Pak | 50 pieces/tube |
| SBR3045SCTB-13 | D ² Pak | 800/Tape & Reel |
| SBR3045SCTB-13-G | 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: SBR3045SCTB-G.
 3. For packaging details, go to our website at <http://www.diodes.com>.

Marking Information



SBR3045SCTB = Product Type Marking Code
 AB = Foundry and Assembly Code
 YYWW = Date Code Marking
 YY = Last two digits of year (ex: 08 = 2008)
 WW = Week (01 - 53)

Maximum Ratings (Per Leg) @ $T_A = 25^\circ\text{C}$ 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} | 45 | V |
| Working Peak Reverse Voltage | V_{RWM} | | |
| DC Blocking Voltage | V_{RM} | | |
| Average Rectified Output Current | I_o | 15 | A |
| (Per Leg) (Total) | | 30 | |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I_{FSM} | 220 | A |

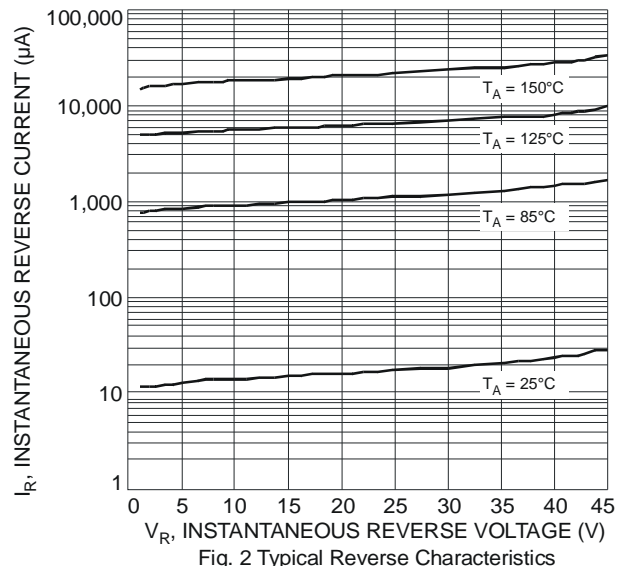
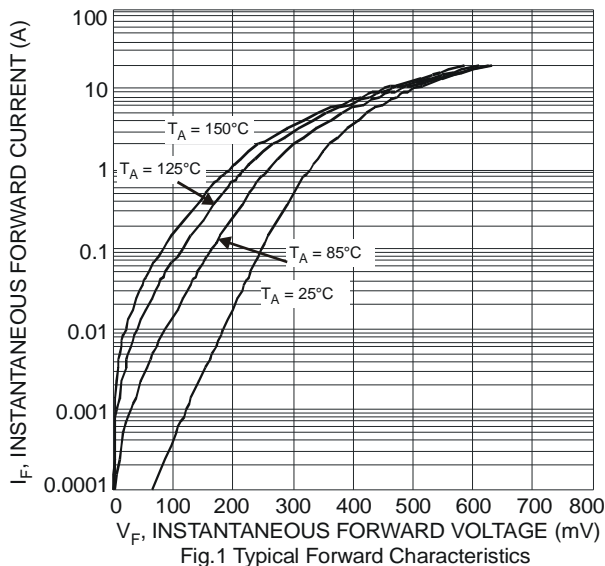
Thermal Characteristics (Per Leg)

| Characteristic | Symbol | Value | Unit |
|---|-----------------|-------------------------|--------------------|
| Typical Thermal Resistance Junction to Case | $R_{\theta JC}$ | 2 | $^\circ\text{C/W}$ |
| Operating Temperature Range | T_J | $V_R \leq 80\% V_{RRM}$ | -65 to +175 |
| | | $V_R \leq 50\% V_{RRM}$ | ≤ 180 |
| | | DC Forward Mode | ≤ 200 |
| Storage Temperature Range | T_{STG} | -65 to +175 | $^\circ\text{C}$ |

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

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|--------------------------|--------|-----|------|------|------|---|
| Forward Voltage Drop | V_F | - | - | 0.65 | V | $I_F = 15\text{A}, T_J = 25^\circ\text{C}$ |
| | | - | - | 0.58 | | $I_F = 15\text{A}, T_J = 125^\circ\text{C}$ |
| Leakage Current (Note 4) | I_R | - | 0.03 | 0.2 | mA | $V_R = 45\text{V}, T_J = 25^\circ\text{C}$ |
| | | - | 10 | 40 | | $V_R = 45\text{V}, T_J = 125^\circ\text{C}$ |

Notes: 4. Short duration pulse test used to minimize self-heating effect.



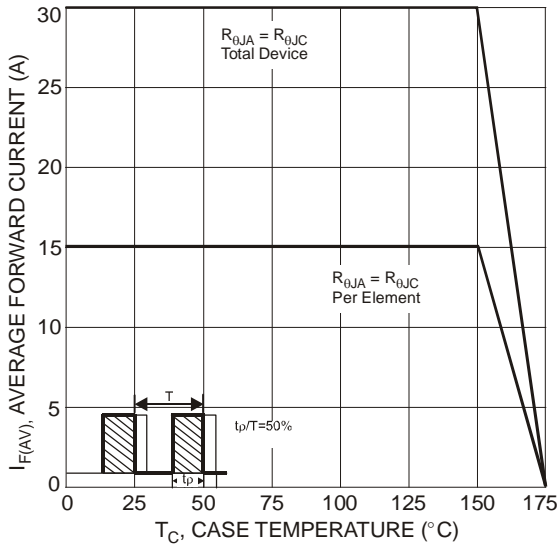
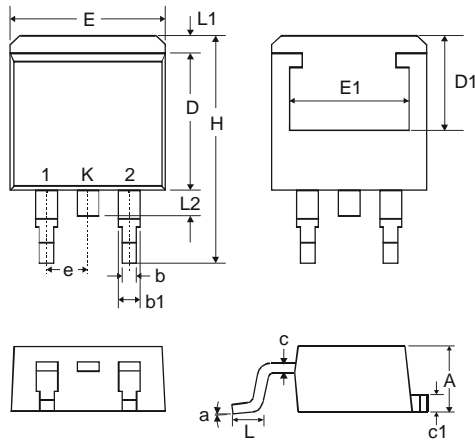


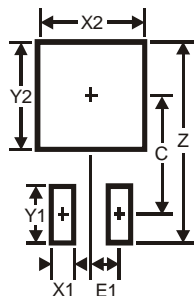
Fig. 3 Forward Current Derating Curve

Package Outline Dimensions



| 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 | 11.4 |
| C | 9.5 |
| E1 | 2.5 |

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