


Features

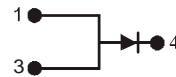
- Ultra-Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **“Green” Molding Compound (No Br, Sb)**

Mechanical Data

- Case: TO252 (DPAK)
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 
- Weight: 0.4 grams (approximate)



Top View



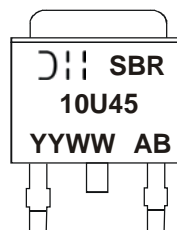
Package Pin Out
Configuration

Ordering Information (Note 2)

| Part Number | Case | Packaging |
|---------------|--------------|------------------|
| SBR10U45D1-13 | TO252 (DPAK) | 2500 pieces/reel |

Notes: 1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see *EU Directive 2002/95/EC Annex Notes*.
2. For packaging details, go to our website at <http://www.diodes.com>.

Marking Information



SBR10U45 = Product Type Marking Code
AB = Foundry and Assembly Code
YYWW = Date Code Marking
YY = Last two digits of year, (ex: 07 = 2007)
WW = Week (01 - 53)

Maximum Ratings @T_A = 25°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} | | |
| RMS Reverse Voltage | V _{R(RMS)} | 31 | V |
| Average Rectified Output Current @T _C = 110°C | I _O | 10 | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 125 | A |

Thermal Characteristics @T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Typical Thermal Resistance | | | |
| Thermal Resistance Junction to Case | R _{θJC} | 2.0 | °C/W |
| Thermal Resistance Junction to Ambient (Note 3) | R _{θJA} | 34 | |
| Operating and Storage Temperature Range | T _J , T _{STG} | -65 to +150 | °C |

Electrical Characteristics @T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|--------------------------|----------------|-----|-----|--------------|------|---|
| Forward Voltage Drop | V _F | - | - | 0.57 0.54 | V | I _F = 10A, T _J = 25°C I _F = 10A, T _J = 125°C |
| Leakage Current (Note 4) | I _R | - | - | 0.5 | mA | V _R = 45V, T _J = 25°C |

Notes: 3. Polyimide PCB 2 oz. Copper, minimum recommended pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com>.
 4. Short duration pulse test used to minimize self-heating effect.

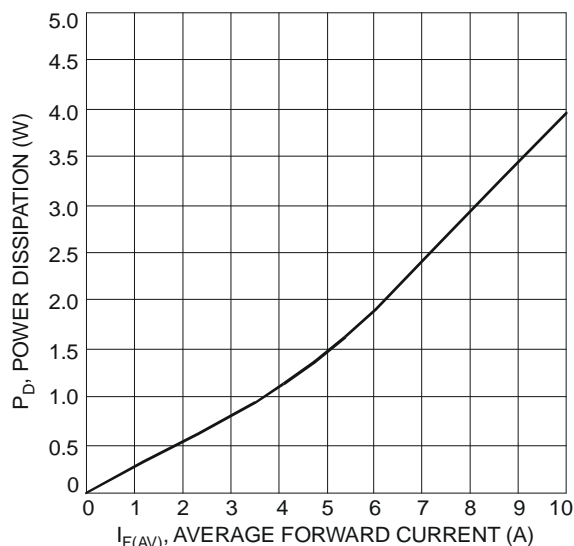


Fig. 1 Forward Power Dissipation

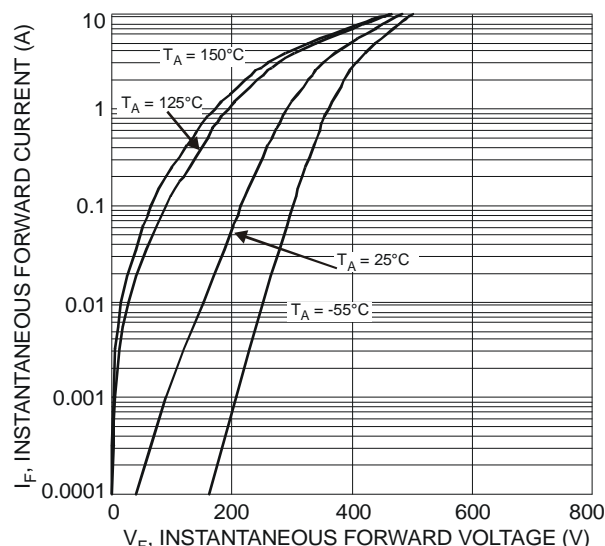


Fig. 2 Typical Forward Characteristics

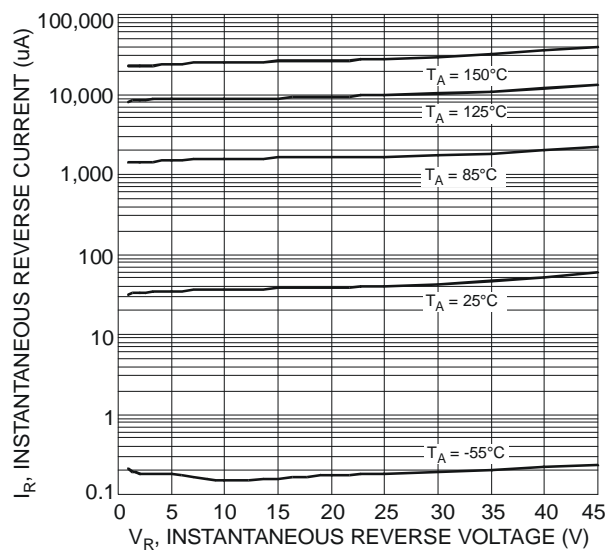


Fig. 3 Typical Reverse Characteristics

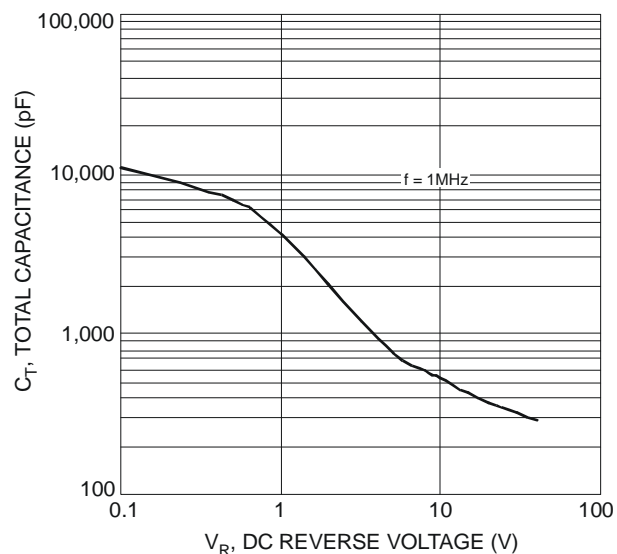


Fig. 4 Total Capacitance vs. Reverse Voltage

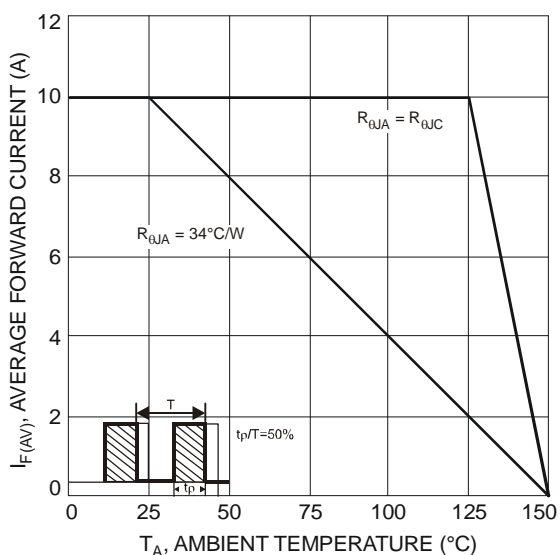


Fig. 5 Forward Current Derating Curve

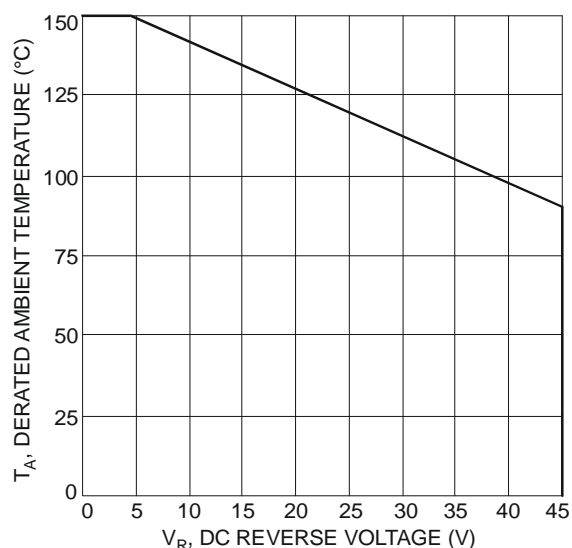
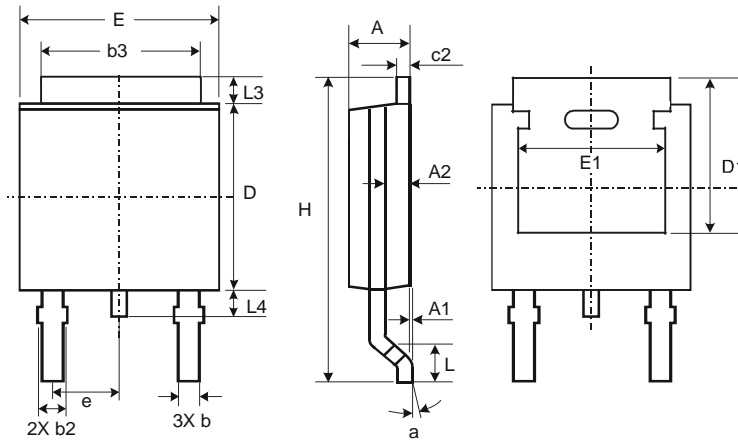


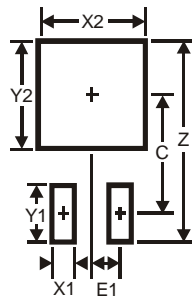
Fig. 6 Operating Temperature Derating

Package Outline Dimensions



| TO252 | | | |
|----------------------|------|-------|-------|
| Dim | Min | Max | Typ |
| A | 2.19 | 2.39 | 2.29 |
| A1 | 0.00 | 0.13 | 0.08 |
| A2 | 0.97 | 1.17 | 1.07 |
| b | 0.64 | 0.88 | 0.783 |
| b2 | 0.76 | 1.14 | 0.95 |
| b3 | 5.21 | 5.46 | 5.33 |
| c2 | 0.45 | 0.58 | 0.531 |
| D | 6.00 | 6.20 | 6.10 |
| D1 | 5.21 | — | — |
| e | — | — | 2.286 |
| E | 6.45 | 6.70 | 6.58 |
| E1 | 4.32 | — | — |
| H | 9.40 | 10.41 | 9.91 |
| L | 1.40 | 1.78 | 1.59 |
| L3 | 0.88 | 1.27 | 1.08 |
| L4 | 0.64 | 1.02 | 0.83 |
| a | 0° | 10° | — |
| All Dimensions in mm | | | |

Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| Z | 11.6 |
| X1 | 1.5 |
| X2 | 7.0 |
| Y1 | 2.5 |
| Y2 | 7.0 |
| C | 6.9 |
| E1 | 2.3 |

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