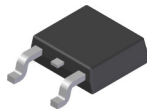


## Features

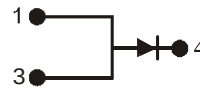
- Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **“Green” Molding Compound (No Br, Sb)**

## Mechanical Data

- Case: DPAK (TO252)
- 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 <sup>(3)</sup>
- Weight: 0.33 grams (approximate)



Top View



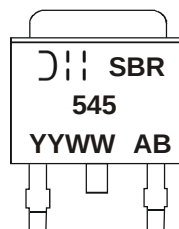
Polarity

## Ordering Information (Note 2)

| Part Number | Case         | Packaging                 |
|-------------|--------------|---------------------------|
| SBR545D1-13 | DPAK (TO252) | 2500/Tape & Reel, 13-inch |

Notes: 1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2). All applicable RoHS exemptions applied.  
2. For packaging details, go to our website at <http://www.diodes.com>.

## Marking Information



SBR545 = Product Type Marking Code  
AB = Foundry and Assembly Code  
YYWW = Date Code Marking  
YY = Last two digits of year (ex: 11 = 2011)  
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                                                                     | $V_{RRM}$ | 45    | V    |
| Working Peak Reverse Voltage                                                                        | $V_{RWM}$ |       |      |
| DC Blocking Voltage                                                                                 | $V_{RM}$  |       |      |
| Average Rectified Output Current @ $T_C = 140^\circ\text{C}$                                        | $I_O$     | 10    | A    |
| Non-Repetitive Peak Forward Surge Current 8.3ms<br>Single Half Sine-Wave Superimposed on Rated Load | $I_{FSM}$ | 90    | A    |

## Thermal Characteristics

| Characteristic                                       | Symbol          | Value       | Unit               |
|------------------------------------------------------|-----------------|-------------|--------------------|
| Maximum Thermal Resistance Junction to Case (Note 3) | $R_{\theta JC}$ | 3           | $^\circ\text{C/W}$ |
| Thermal Resistance Junction to Ambient (Note 3)      | $R_{\theta JA}$ | 24          |                    |
| 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) | $V_F$  | -   | -   | 0.49 | V             | $I_F = 5\text{A}, T_J = 25^\circ\text{C}$   |
|                                |        | -   | -   | 0.44 |               | $I_F = 5\text{A}, T_J = 125^\circ\text{C}$  |
| Leakage Current (Note 4)       | $I_R$  | -   | -   | 500  | $\mu\text{A}$ | $V_R = 45\text{V}, T_J = 25^\circ\text{C}$  |
|                                |        | -   | -   | 40   | mA            | $V_R = 45\text{V}, T_J = 125^\circ\text{C}$ |

Notes: 3. Device mounted 2inch\*2inch Polymide with 501.12mm<sup>2</sup> copper pad.  
 4. Short duration pulse test used to minimize self-heating effect.

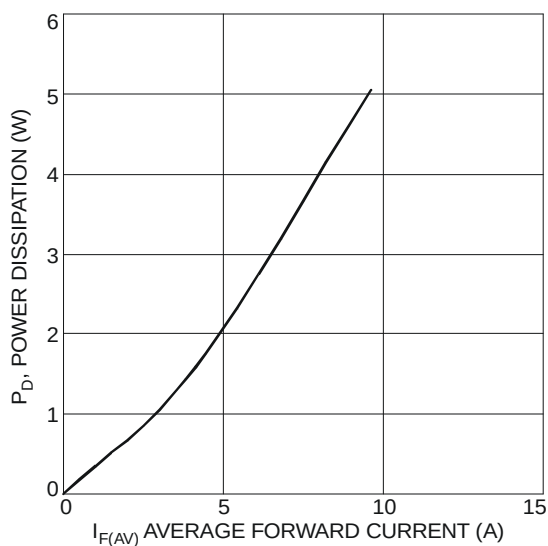


Fig. 1 Forward Power Dissipation

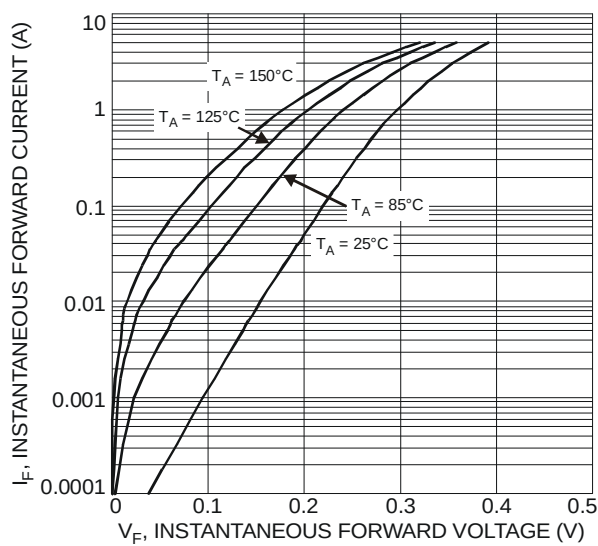
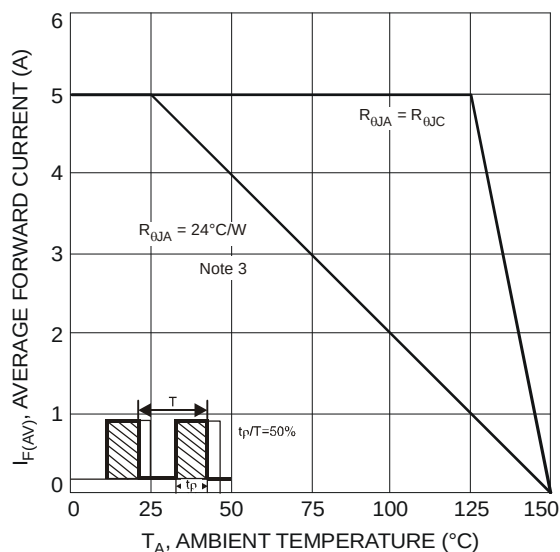
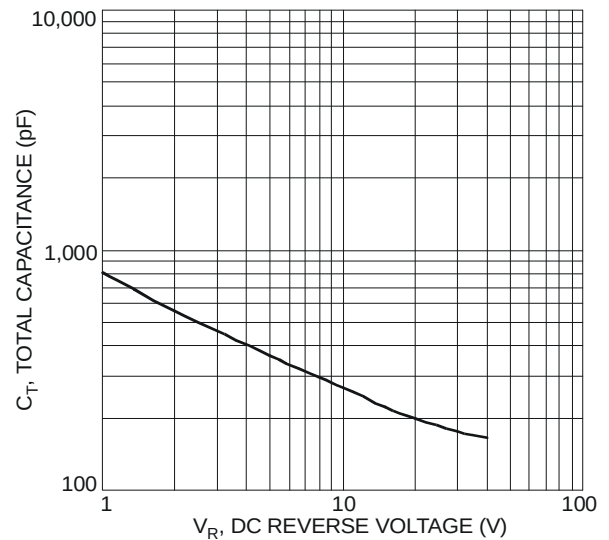
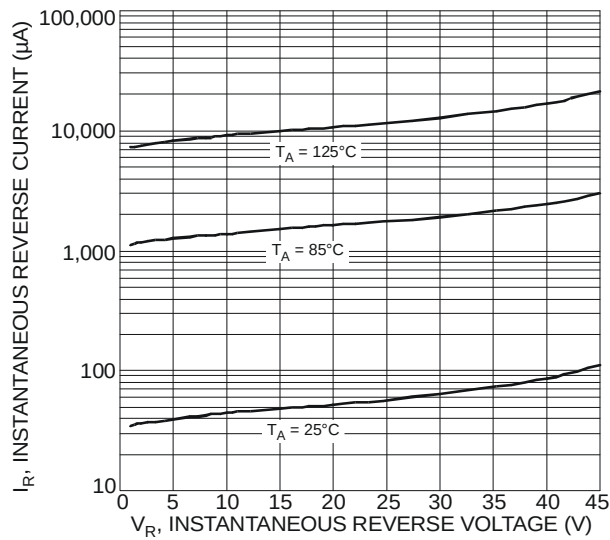
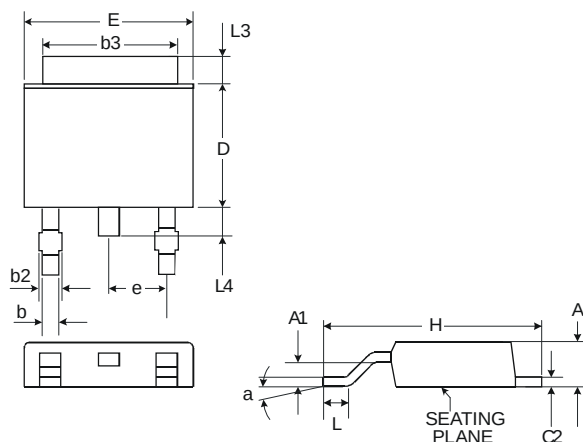


Fig. 2 Typical Forward Characteristics



## Package Outline Dimensions



| DPAK                 |            |      |       |
|----------------------|------------|------|-------|
| Dim                  | Min        | Typ  | Max   |
| A                    | 2.19       | 2.29 | 2.39  |
| A1                   | 0.97       | 1.07 | 1.17  |
| b                    | 0.64       | 0.76 | 0.88  |
| b2                   | 0.76       | 0.95 | 1.14  |
| b3                   | 5.21       | 5.33 | 5.50  |
| C2                   | 0.45       | 0.51 | 0.58  |
| D                    | 6.00       | 6.10 | 6.20  |
| E                    | 6.45       | 6.58 | 6.70  |
| e                    | 2.286 Typ. |      |       |
| H                    | 9.40       | 9.91 | 10.41 |
| L                    | 1.40       | 1.59 | 1.78  |
| L3                   | 0.88       | 1.08 | 1.27  |
| L4                   | 0.64       | 0.83 | 1.02  |
| a                    | 0°         | -    | 10°   |
| All Dimensions in mm |            |      |       |

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SBR545D1

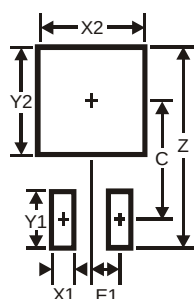
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## Suggested Pad Layout



| 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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