**SBR30A45CT**
**SBR30A45CTFP**

NEW PRODUCT

# 30A SBR®
# Super Barrier Rectifier

## Features

- Low Forward Voltage Drop
- Excellent High Temperature Stability
- Super Barrier Design
- Soft, Fast Switching Capability
- Molded Plastic TO-220AB, and ITO-220AB packages
- **Lead Free Finish, RoHS Compliant (Note 2)**

## Mechanical Data

- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Matte Tin Finish annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 (e3)
- Marking: See Page 3
- Ordering Information: See Page 3

## Maximum Ratings @ $T_A$ = 25ºC 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<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | $V_{RRM}$<br>$V_{RWM}$<br>$V_{RM}$ | 45 | V |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 32 | V |
| Average Rectified Output Current @ $T_C$ = 110ºC | $I_O$ | 30 | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms<br>Single Half Sine-Wave Superimposed on Rated Load | $I_{FSM}$ | 250 | A |
| Peak Repetitive Reverse Surge Current (2uS-1Khz) | $I_{RRM}$ | 3 | A |
| Maximum Thermal Resistance (per leg)<br>Package = TO-220AB<br>Package = ITO-220AB | $R_{\Theta JC}$ | <br>2<br>4 | °C/W |
| Operating and Storage Temperature Range | $T_J$, $T_{STG}$ | -65 to +150 | ºC |

## Electrical Characteristics @ $T_A$ = 25ºC unless otherwise specified

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|---|---|---|---|---|---|---|
| Reverse Breakdown Voltage (Note 1) | $V_{(BR)R}$ | 45 | - | - | V | $I_R$ = 0.5 mA |
| Forward Voltage Drop | $V_F$ | - | -<br>0.42<br>- | 0.50<br>0.45<br>0.60 | V | $I_F$ = 15A, $T_J$ = 25ºC<br>$I_F$ = 15A,$T_J$ = 125ºC<br>$I_F$ = 30A, $T_J$ = 25ºC |
| Leakage Current (Note 1) | $I_R$ | - | - | 0.5<br>100 | mA | $V_R$ = 45V, $T_J$ = 25 ºC<br>$V_R$ = 45V, $T_J$ = 125 ºC |

Notes:
1. Short duration pulse test used to minimize self-heating effect.
2. RoHS revision 13.2.2003. High temperature solder exemption applied, see *EU Directive Annex Note 7.*

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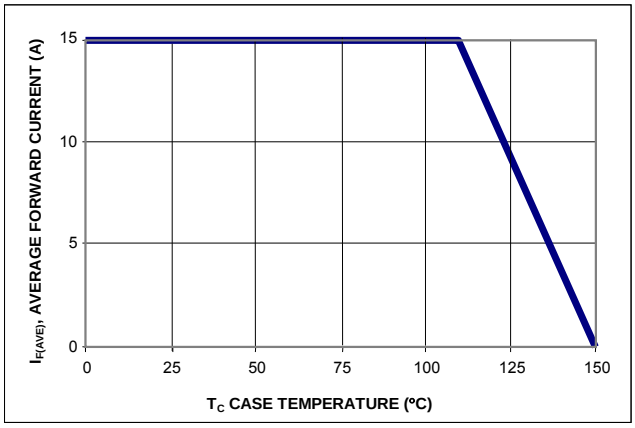



Figure 1: Current Derating Curve, Per Element

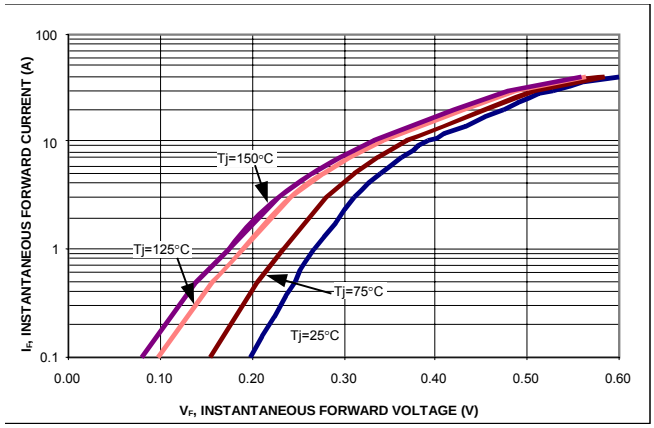



Figure 2: Typical Forward Characteristics, Per Element

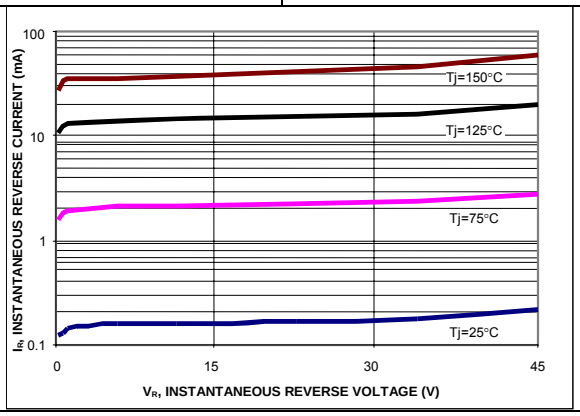
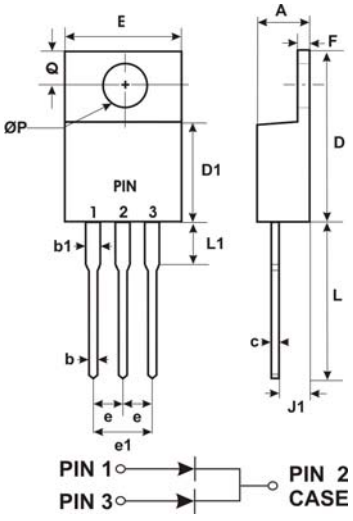



Figure 3: Typical Reverse Characteristics, Per Element

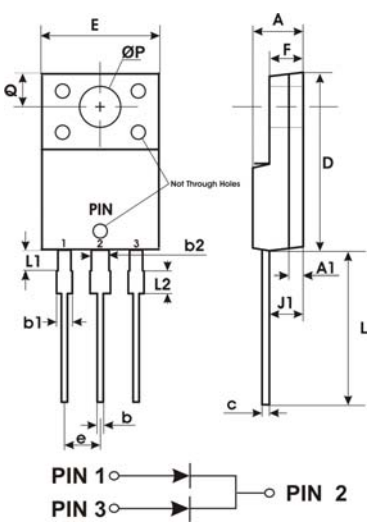
## Package Outline Drawings

### TO-220AB




| TO-220AB | | |
|---|---|---|
| DIM. | MIN. | MAX. |
| A | 4.47 | 4.67 |
| b | 0.71 | 0.91 |
| b1 | 1.17 | 1.37 |
| c | 0.31 | 0.53 |
| D | 14.65 | 15.35 |
| D1 | 8.50 | 8.90 |
| E | 10.01 | 10.31 |
| e | 2.54 typ | |
| e1 | 4.98 | 5.18 |
| F | 1.17 | 1.37 |
| J1 | 2.52 | 2.82 |
| L | 13.40 | 13.80 |
| L1 | 3.56 | 3.96 |
| ØP | 3.735 | 3.935 |
| Q | 2.59 | 2.89 |
| All Dimensions in Millimeters | | |

### ITO-220AB

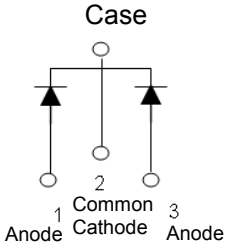
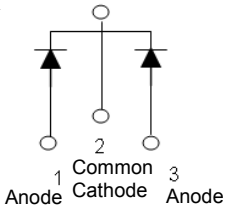
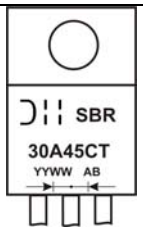



| ITO-220AB | | |
|---|---|---|
| DIM. | MIN. | MAX. |
| A | 4.30 | 4.70 |
| b | 0.50 | 0.75 |
| b1 | 1.10 | 1.35 |
| b2 | 1.50 | 1.75 |
| c | 0.50 | 0.75 |
| D | 14.80 | 15.20 |
| E | 9.96 | 10.36 |
| e | 2.54 typ | |
| F | 2.80 | 3.20 |
| J1 | 2.50 | 2.90 |
| L | 12.80 | 13.60 |
| L1 | 1.70 | 1.90 |
| ØP | 3.50 typ | |
| Q | 2.70 typ | |
| All Dimensions in Millimeters | | |


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## Marking, Polarity, Weight & Ordering Information

| | SBR30A45CT | SBR30A45CTFP |
|---|---|---|
| Case Style |  TO-220AB |  ITO-220AB |
| Polarity |   |   |
| Marking |   |   |
| Weight | 2.1g | 1.9g |

| | | |
|---|---|---|
| Ordering Information | SBR30A45CT<br>50 pieces/tube | SBR30A45CTFP<br>50 pieces/tube |
| Date Code | YY = Last two digits of year, ex = 06 = 2006<br>WW = Week (01-52) | |
| Other Marking Information | A = Foundry Code<br>B = Assembly Code | |

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