

**20A 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 @  $T_A = 25^\circ\text{C}$  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 Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_{RM}$	45	V
RMS Reverse Voltage	$V_{R(RMS)}$	32	V
Average Rectified Output Current @ $T_C = 110^\circ\text{C}$	$I_O$	20	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	$I_{FSM}$	120	A
Peak Repetitive Reverse Surge Current (2 $\mu$ S-1Khz)	$I_{RRM}$	2	A
Maximum Thermal Resistance (per leg) Package = TO-220AB Package = ITO-220AB	$R_{\theta JC}$	2 4	$^\circ\text{C/W}$
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
Reverse Breakdown Voltage (Note 1)	$V_{(BR)R}$	45	-	-	V	$I_R = 0.5 \text{ mA}$
Forward Voltage Drop	$V_F$	-	- 0.43	0.54 0.49	V	$I_F = 10\text{A}, T_J = 25^\circ\text{C}$ $I_F = 10\text{A}, T_J = 125^\circ\text{C}$
Leakage Current (Note 1)	$I_R$	-	-	0.5 100	mA	$V_R = 45\text{V}, T_J = 25^\circ\text{C}$ $V_R = 45\text{V}, T_J = 125^\circ\text{C}$

**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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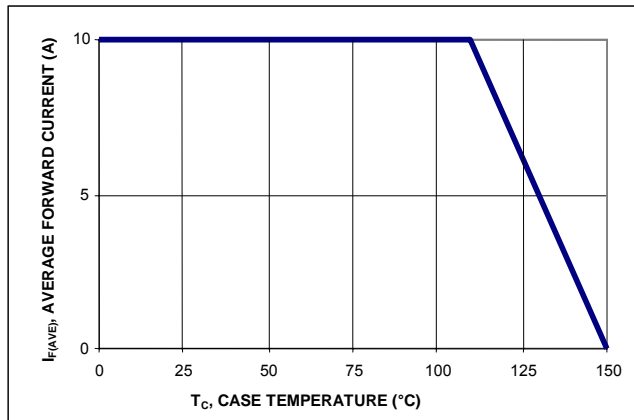


Figure 1: Current Derating Curve, Per Element

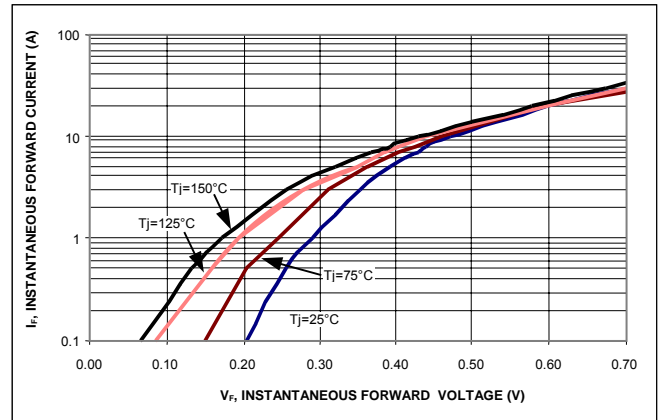


Figure 2: Typical Forward Characteristics, Per Element

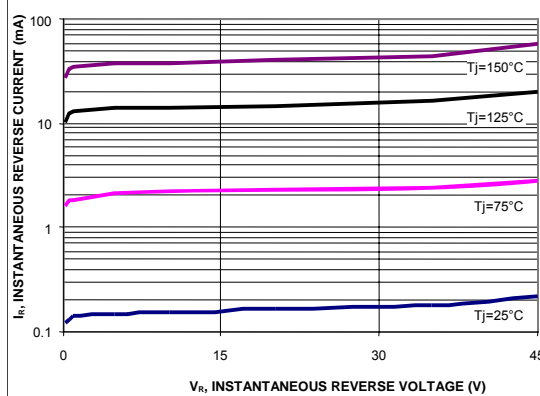
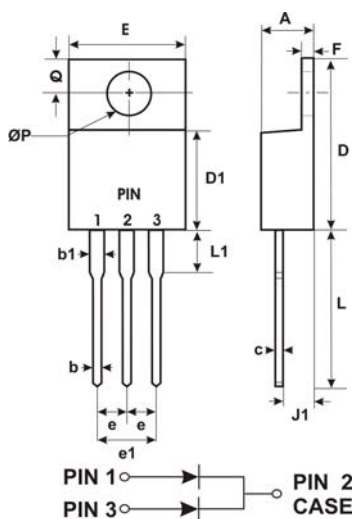


Figure 3: Typical Reverse Characteristics, Per Element

## Package Outline Drawings

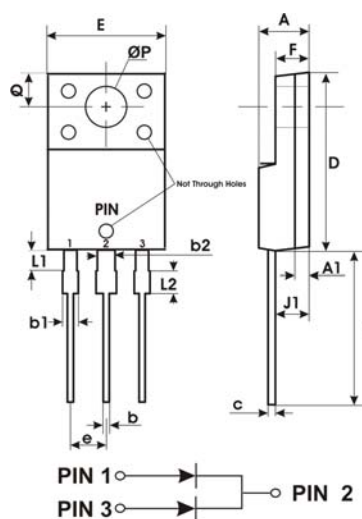
### TO-220AB



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



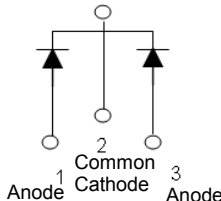
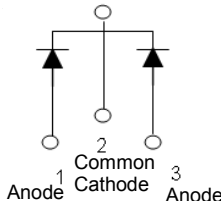
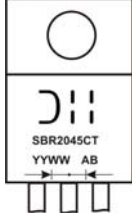
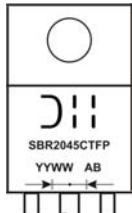
### ITO-220AB



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

**Marking, Polarity, Weight & Ordering Information**

	SBR2045CT	SBR2045CTFP
Case Style	 TO-220AB	 ITO-220AB
Polarity	Case 	
Marking		
Weight	2.1g	1.9g

Ordering Information	SBR2045CT 50 pieces/tube	SBR2045CTFP 50 pieces/tube
Date Code	YY = Last two digits of year, ex = 06 = 2006 WW = Week (01-52)	
Other Marking Information	A = Foundry Code B = Assembly Code	

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