

**Features**

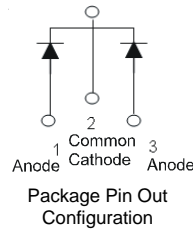
- Ultra Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 150°C Operating Junction Temperature
- **Lead Free Finish, RoHS Compliant (Note 2)**
- **Also Available in Green Molding Compound (Note 4)**

**Mechanical Data**

- Case: TO-220AB
- 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
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 1.85 grams (approximate)

TO-220AB  
Top View

TO-220AB  
Bottom View



**Maximum Ratings (Per Leg)** @T<sub>A</sub> = 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 <sub>RRM</sub>	45	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
Average Rectified Output Current	I <sub>O</sub>	20	A
(Per Leg) (Total)		40	
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	280	A

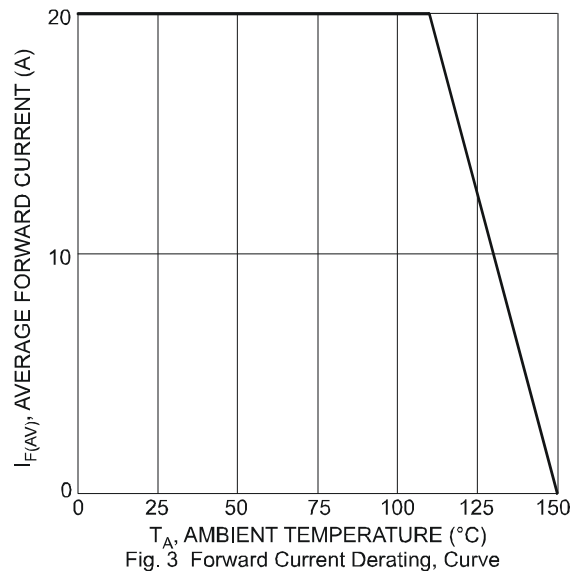
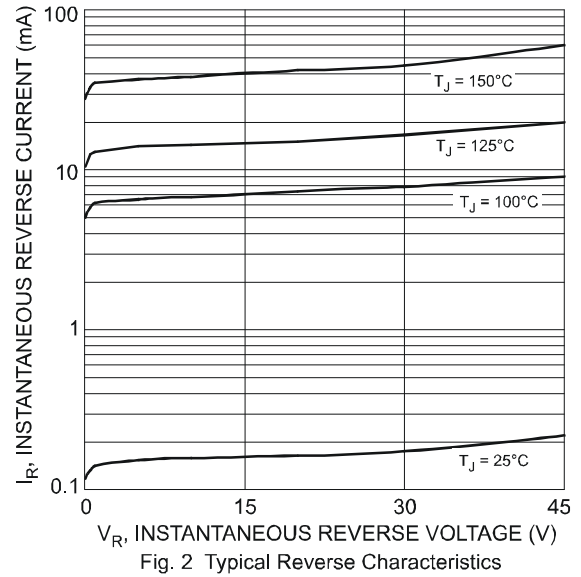
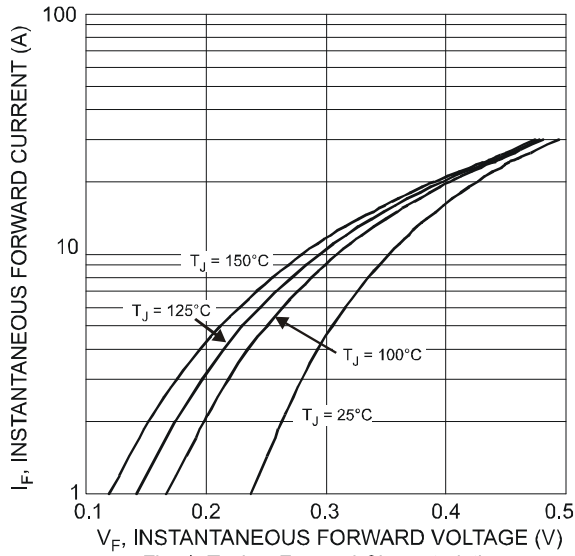
**Thermal Characteristics (Per Leg)**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case	R <sub>θJC</sub>	2	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

**Electrical Characteristics (Per Leg)** @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V <sub>F</sub>	-	0.47	0.52	V	I <sub>F</sub> = 20A, T <sub>J</sub> = 25°C I <sub>F</sub> = 20A, T <sub>J</sub> = 125°C
Leakage Current (Note 1)	I <sub>R</sub>	-	0.2	0.6	mA	V <sub>R</sub> = 45V, T <sub>J</sub> = 25°C V <sub>R</sub> = 45V, T <sub>J</sub> = 125°C

Notes: 1. Short duration pulse test used to minimize self-heating effect.  
2. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied. Please visit our website at [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html).

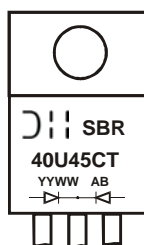


**Ordering Information** (Notes 3 & 4)

Part Number	Case	Packaging
SBR40U45CT	TO-220AB	50 pieces/tube
SBR40U45CT-G	TO-220AB	50 pieces/tube

- Notes: 3. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.  
 4. For Green Molding Compound version part numbers, add "-G" suffix to part number above. Examples: SBR40U45CT-G.

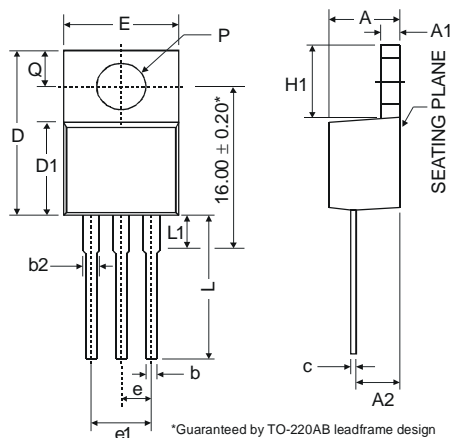
**Marking Information**



SBR40U45CT = Product Type Marking Code  
 AB = Foundry and Assembly Code  
 YYWW = Date Code Marking  
 YY = Last two digits of year (ex: 07 = 2007)  
 WW = Week (01-52)

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## Package Outline Dimensions



TO-220AB			
Dim	Min	Typ	Max
A	3.56	-	4.82
A1	0.51	-	1.39
A2	2.04	-	2.92
b	0.39	0.81	1.01
b2	1.15	1.24	1.77
c	0.356	-	0.61
D	14.22	-	16.51
D1	8.39	-	9.01
e	2.54		
e1	5.08		
E	9.66	-	10.66
H1	5.85	-	6.85
L	12.70	-	14.73
L1	-	-	6.35
P	3.54	-	4.08
Q	2.54	-	3.42
<b>All Dimensions in mm</b>			

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