

## 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)**
- **Also Available in Green Molding Compound (Note 2)**

## Mechanical Data

- Case: TO-220AB, ITO-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 <sup>(3)</sup>
- Weight: TO-220AB – 1.85 grams (approximate)  
ITO-220AB – 1.65 grams (approximate)



TO-220AB  
Top View



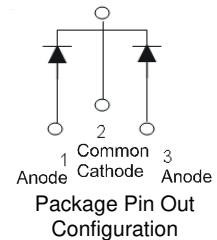
TO-220AB  
Bottom View



ITO-220AB  
Top View



ITO-220AB  
Bottom View



## Ordering Information (Notes 2 & 3)

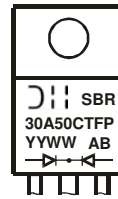
Part Number	Case	Packaging
SBR30A50CT	TO-220AB	50 pieces/tube
SBR30A50CT-G	TO-220AB	50 pieces/tube
SBR30A50CTFP	ITO-220AB	50 pieces/tube
SBR30A50CTFP-G	ITO-220AB	50 pieces/tube
SBR30A50CTFP-JT	ITO-220AB (Alternate)	50 pieces/tube

- Notes: 1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes  
 2. For Green Molding Compound version part numbers, add "-G" suffix to part number above. Examples: SBR30A50CT-G.  
 3. For packaging details, go to our website at <http://www.diodes.com>.

## Marking Information



SBR30A50CT = Product Type Marking Code  
 Ⓛ = Manufacturers' Code Marking  
 AB = Foundry and Assembly Code  
 YYWW = Date Code Marking  
 YY = Last two digits of year (ex: 06 = 2006)  
 WW = Week (01 - 53)



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### 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>	50	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
Average Rectified Output Current Per Device (Per Leg) (Total)	I <sub>O</sub>	15 30	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	260	A
Isolation Voltage (ITO-220AB Only) From terminal to heatsink t = 3 sec.	V <sub>AC</sub>	2000	V

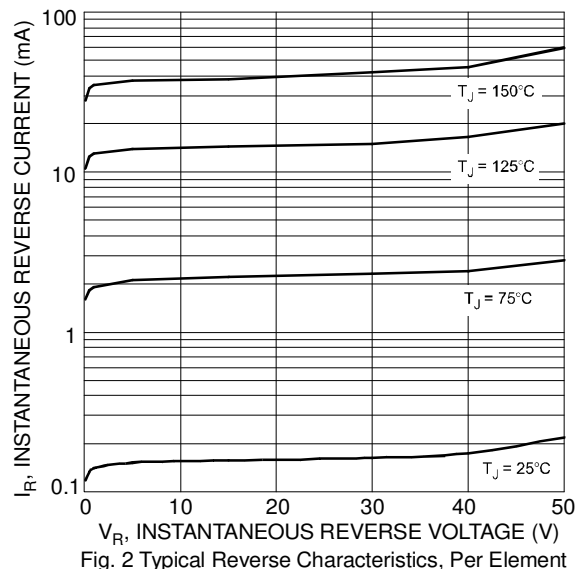
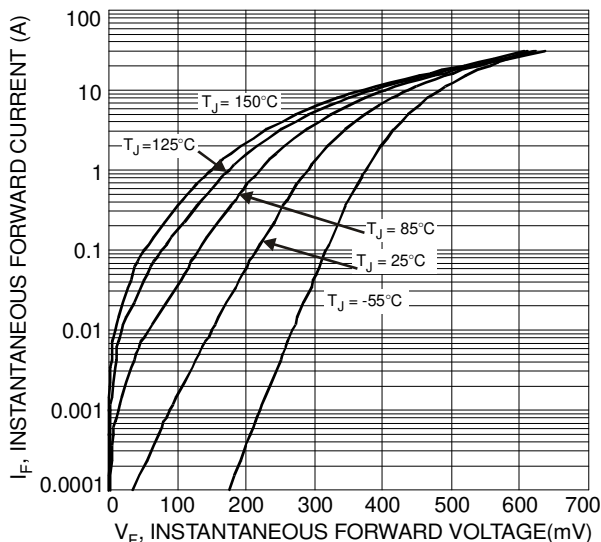
### Thermal Characteristics (Per Leg)

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance			
Thermal Resistance Junction to Ambient (Note 4)	R <sub>θJA</sub>	9.5	°C/W
Thermal Resistance Junction to Case	R <sub>θJC</sub>	2	
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>	-	-	0.55 0.50	V	I <sub>F</sub> = 15A, T <sub>J</sub> = 25°C I <sub>F</sub> = 15A, T <sub>J</sub> = 125°C
Leakage Current (Note 5)	I <sub>R</sub>	-	-	0.5 100	mA	V <sub>R</sub> = 50V, T <sub>J</sub> = 25°C V <sub>R</sub> = 50V, T <sub>J</sub> = 125°C

Notes: 4. Test with additional heatsink, (Black Aluminum, 50mm\*37mm\*15mm)  
5. Short duration pulse test used to minimize self-heating effect.



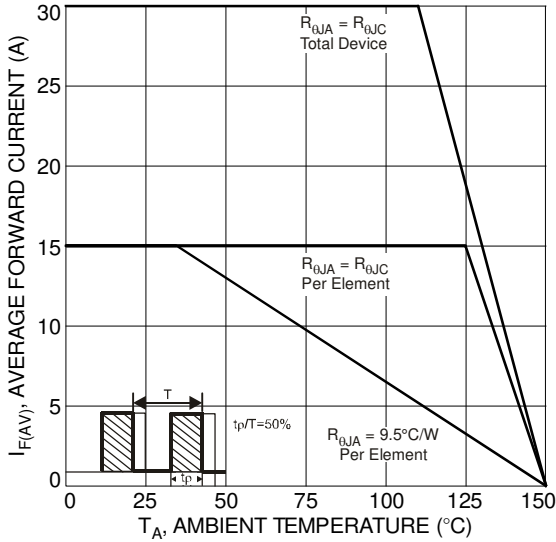


Fig. 3 Forward Current Derating Curve, Per Element

**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

**All Dimensions in mm**

\*Guaranteed by TO-220AB leadframe design

ITO-220AB (Note 6)			
Dim	Min	Typ	Max
A	4.50	4.70	4.90
A1	3.04	3.24	3.44
A2	2.56	2.76	2.96
b	0.50	0.60	0.75
b1	1.10	1.20	1.35
c	0.50	0.60	0.70
D	15.67	15.87	16.07
D1	8.99	9.19	9.39
e	2.54		
E	9.91	10.11	10.31
L	9.45	9.75	10.05
L1	15.80	16.00	16.20
P	2.98	3.18	3.38
Q	3.10	3.30	3.50

**All Dimensions in mm**

ITO-220AB ALTERNATE (Note 6)		
DIM.	MIN.	MAX.
A	4.30	4.70
A1	1.3	
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
L2	1.90	2.10
ØP	3.50 typ	
Q	2.70 typ	

**All Dimensions in mm**

Notes: 6. For product manufactured with Date Code 0733 (week 33, 2007) and newer, please refer to ITO-220AB dimensions. For product manufactured prior to Date Code 0733, please refer to ITO-220AB ALTERNATE dimensions.

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