



# 40A SBR<sup>®</sup> SUPER BARRIER RECTIFIER

### **Features**

- Ultra Low Forward Voltage Drop
- Low Leakage Current
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 175°C Operating Junction Temperature
- Lead Free Finish, RoHS Compliant (Note 1)
- Also Available in Green Molding Compound (Note 2)

### **Mechanical Data**

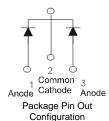
- Case: TO-220AB
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish annealed over Copper lead frame.
  Solderable per MIL-STD-202, Method 208 63
- Polarity: As Marked on Body
- Weight: 1.85 grams (approximate)



TO-220AB Top View



TO-220AB Bottom View



## Ordering Information (Notes 2 & 3)

Part Number	Case	Packaging
SBR40U300CT	TO-200AB	50 pieces/tube
SBR40U300CT-G	TO-200AB	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: SBR40U300CT-G.
- 3. For packaging details, go to our website at http://www.diodes.com.

## **Marking Information**



SBR40U300CT = 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 - 53)



## 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 Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>RM</sub>	300	V
Average Rectified Output Current Per Device (Per Leç (Total)	l <sub>O</sub>	20 40	А
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	235	A

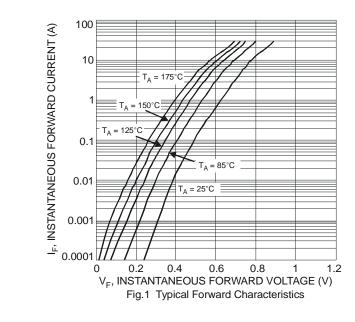
## Thermal Characteristics (Per Leg)

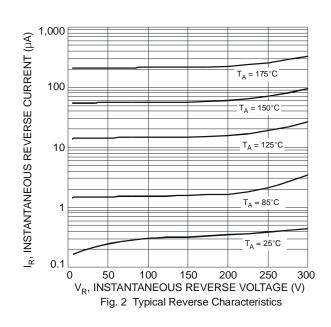
Characteristic	Symbol	Value	Unit
Typical Thermal Resistance	$R_{ hetaJA}$	52	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +175	°C

## Electrical Characteristics (Per Leg) @TA = 25°C unless otherwise specified

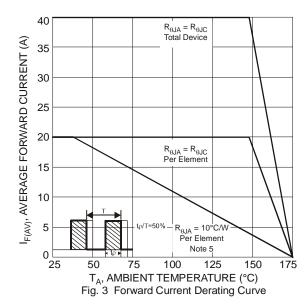
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Forward Voltage Drop	VF	-	0.84 0.73	0.89 0.78	V	I <sub>F</sub> = 20A, T <sub>J</sub> = 25°C I <sub>F</sub> = 20A, T <sub>J</sub> = 125°C
Leakage Current (Note 1)	I <sub>R</sub>	-	-	100 10	μA mA	$V_R = 300V, T_J = 25^{\circ}C$ $V_R = 300V, T_J = 125^{\circ}C$
Reverse Recovery Time		-	32	50	ns	I <sub>F</sub> = 0.5A, I <sub>R</sub> = 1A, I <sub>RR</sub> = 0.25A
	t <sub>rr</sub>	-	26	35		$I_F = 1A$ , $V_R = 30V$ di/dt = 100A/ $\mu$ s, $T_J = 25^{\circ}$ C

Notes: 4. Short duration pulse test used to minimize self-heating effect.



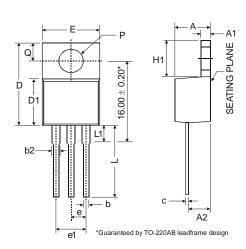






Notes: 5. Black Aluminium Heatsink; length 37mm, width 15mm, height 50mm.

## **Package Outline Dimensions**



TO-220AB				
Dim	Min	Тур	Max	
Α	3.56	1	4.82	
<b>A</b> 1	0.51	1	1.39	
A2	2.04	1	2.92	
b	0.39	0.81	1.01	
b2	1.15	1.24	1.77	
С	0.356	1	0.61	
D	14.22		16.51	
D1	8.39	1	9.01	
е	2.54			
e1	5.08			
Е	9.66		10.66	
H1	5.85	1	6.85	
L	12.70		14.73	
L1	-		6.35	
Р	3.54	-	4.08	
Q	2.54	-	3.42	
All Dimensions in mm				



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