

Features

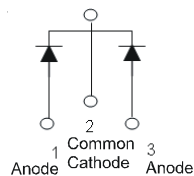
- Ultra Low Forward Voltage Drop
- Low Leakage Current
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 175°C Operating Junction Temperature
- **Lead Free Finish, RoHS Compliant (Note 2)**



Top View

Mechanical Data

- Case: TO-220AB
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Matte Tin Finish annealed over Copper lead frame. Solderable per MIL-STD-202, Method 208 **(E3)**
- Polarity: As Marked on Body
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 2.1 grams (approximate)



Package Pin Out Configuration

Maximum Ratings @T_A = 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 _{RRM}	300	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _{RM}		
RMS Reverse Voltage	V _{R(RMS)}	212	V
Average Rectified Output Current @ T _C = 140°C	I _O	40	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	235	A

Thermal Characteristics

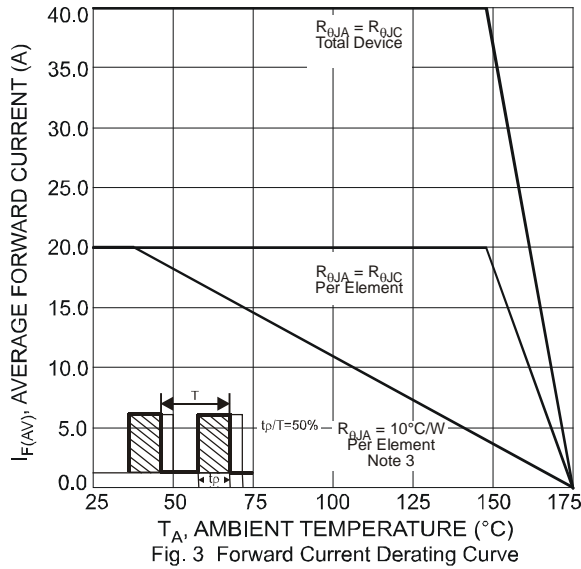
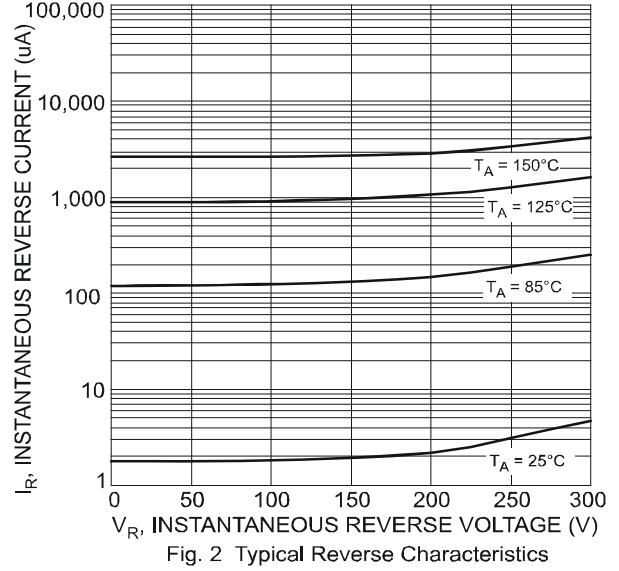
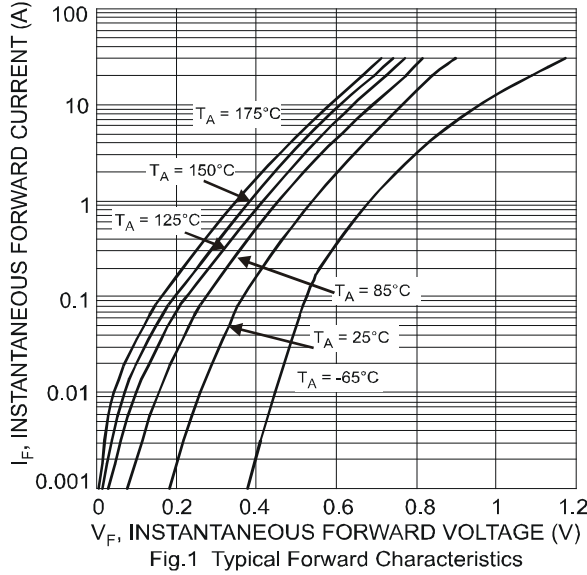
Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance (per leg)	R _{θJA}	52	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +175	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 1)	V _{(BR)R}	300	-	-	V	I _R = 0.04mA
Forward Voltage Drop (per leg)	V _F	-	0.84 0.73	0.89 0.78	V	I _F = 20A, T _J = 25°C I _F = 20A, T _J = 125°C
Leakage Current (Note 1)	I _R	-	5 2	100 10	μA mA	V _R = 300V, T _J = 25°C V _R = 300V, T _J = 125°C
Reverse Recovery Time	t _{rr}	-	32	50	ns	I _F = 0.5A, I _R = 1A, I _{RR} = 0.25A
		-	26	35		I _F = 1A, V _R = 30V di/dt = 100A/μs, T _J = 25°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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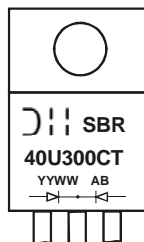
Notes: 3. Black Aluminium Heatsink; length 37mm, width 15mm, height 50mm

Ordering Information (Note 3)

Part Number	Case	Packaging
SBR40U300CT	TO-200AB	50 pieces/tube

Notes: 3. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

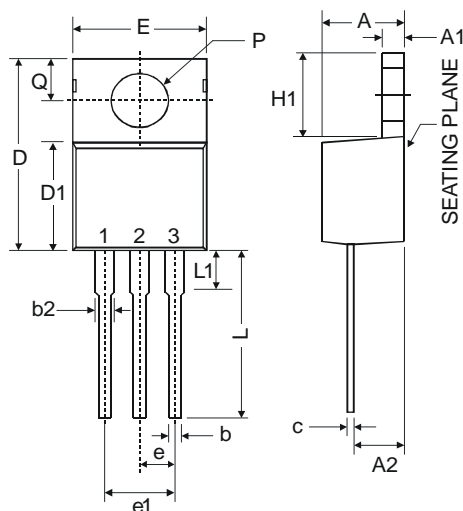
Marking Information



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 (01-52)

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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
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			

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