

Features

- Ultra Low Forward Voltage Drop
- Low Leakage Current
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology (SBR®)
- Soft, Fast Switching Capability
- +175°C Operating Junction Temperature
- TO220AB
 - **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- Available in "Green" Package: TO220AB
 - **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
 - **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

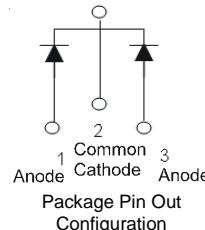
- Case: TO220AB
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish Annealed over Copper Lead Frame. Solderable per MIL-STD-202, Method 208 (E3)
- Polarity: As Marked on Body
- Weight: 1.85 grams (Approximate)



TO220AB
Top View



TO220AB
Bottom View



Ordering Information (Note 4)

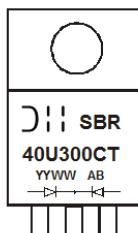
Part Number	Case	Packaging
SBR40U300CT	TO220AB	50 Pieces/Tube
SBR40U300CT-G	TO220AB	50 Pieces/Tube



Notes:

1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



○ = Manufacturer's Marking
 SBR40U300CT = Product Type Marking Code
 AB = Foundry and Assembly Code
 YYWW = Date Code Marking
 YY = Last Two Digits of Year (ex: 18 = 2018)
 WW = Week (01 to 53)

Maximum Ratings (Per Leg) (@ $T_A = +25^\circ\text{C}$, 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	V_{RRM}		
Working Peak Reverse Voltage	V_{RWM}	300	V
DC Blocking Voltage	V_{RM}		
Average Rectified Output Current Per Device (Per Leg) (Total)	I_O	20 40	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	235	A

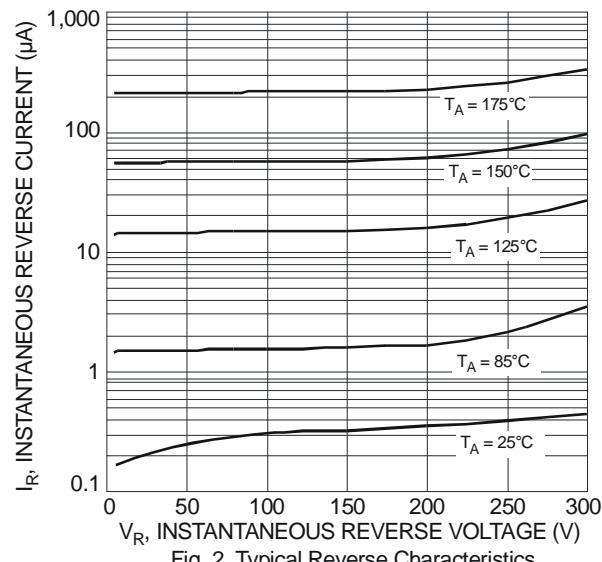
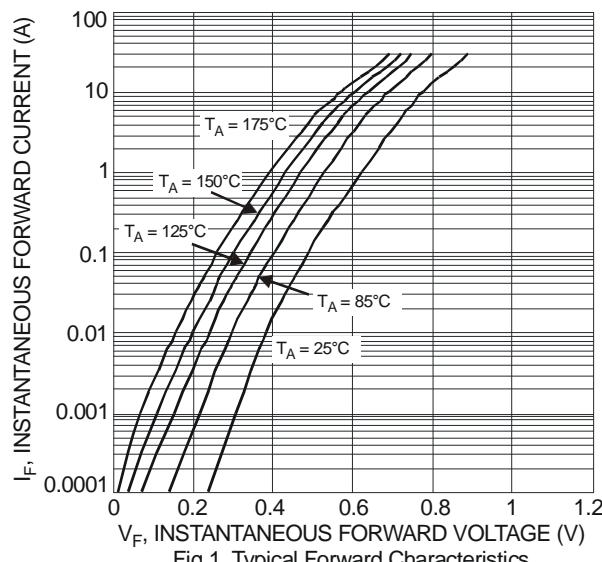
Thermal Characteristics (Per Leg)

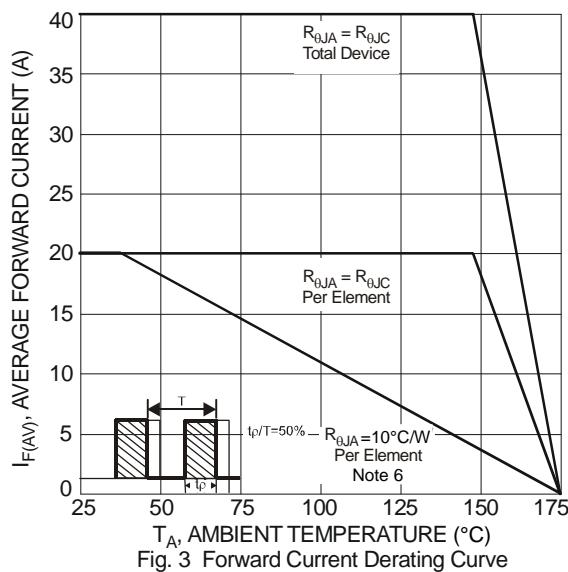
Characteristic	Symbol	Value	Unit
Typical Thermal Resistance	$R_{\theta JA}$	52	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +175	$^\circ\text{C}$

Electrical Characteristics (Per Leg) (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V_F	—	0.84 0.73	0.89 0.78	V	$I_F = 20\text{A}, T_J = +25^\circ\text{C}$ $I_F = 20\text{A}, T_J = +125^\circ\text{C}$
Leakage Current (Note 5)	I_R	—	—	100 10	μA mA	$V_R = 300\text{V}, T_J = +25^\circ\text{C}$ $V_R = 300\text{V}, T_J = +125^\circ\text{C}$
Reverse Recovery Time	t_{RR}	—	32	50	ns	$I_F = 0.5\text{A}, I_R = 1\text{A}, I_{RR} = 0.25\text{A}$
		—	26	35		$I_F = 1\text{A}, V_R = 30\text{V}$ $di/dt = 100\text{A}/\mu\text{s}, T_J = +25^\circ\text{C}$

Note: 5. Short duration pulse test used to minimize self-heating effect.



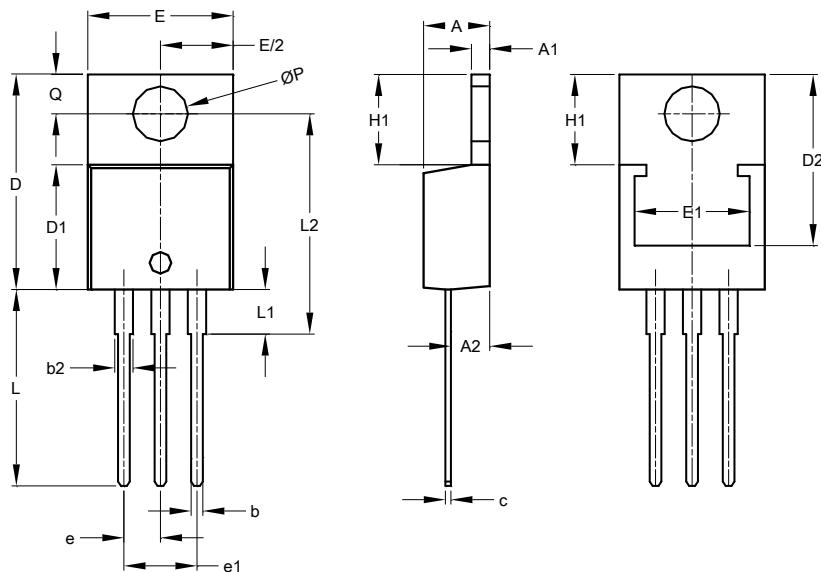


Note: 6. Black Aluminium Heatsink; length 37mm, width 15mm, height 50mm.

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

TO220AB



TO220AB			
Dim	Min	Max	Typ
A	3.56	4.82	-
A1	0.51	1.39	-
A2	2.04	2.92	-
b	0.39	1.01	0.81
b2	1.15	1.77	1.24
c	0.356	0.61	-
D	14.22	16.51	-
D1	8.39	9.01	-
D2	11.45	12.87	-
e	-	-	2.54
e1	-	-	5.08
E	9.66	10.66	-
E1	6.86	8.89	-
H1	5.85	6.85	-
L	12.70	14.73	-
L1	-	4.42	-
L2	15.80	17.51	16.00
P	3.54	4.08	-
Q	2.54	3.42	-

All Dimensions in mm

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