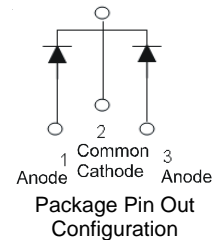


Features

- Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Also Available in Green Molding Compound**
 - **Halogen and Antimony Free. "Green" Device (Note 3)**

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
- 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

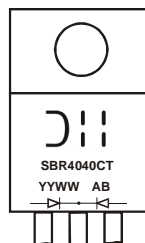
ITO-220AB
Bottom View

Ordering Information (Notes 4 and 5)

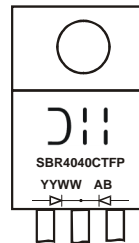
Part Number	Case	Packaging
SBR4040CT	TO-220AB	50 pieces/tube
SBR4040CT-G	TO-220AB	50 pieces/tube
SBR4040CTFP	ITO-220AB	50 pieces/tube
SBR4040CTFP-G	ITO-220AB	50 pieces/tube
SBR4040CTFP-JT	ITO-220AB((Alternate))	50 pieces/tube

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
 2. See <http://www.diodes.com> 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 Green Molding Compound version part numbers, add "-G" suffix to part number above. Examples: SBR4040CT-G.
 5. For packaging details, go to our website at <http://www.diodes.com>.

Marking Information



SBR4040CT = Product Type Marking Code
AB = Foundry and Assembly Code
YYWW = Date Code Marking
YY = Last two digits of year (ex: 06 = 2006)
WW = Week (01 - 53)



SBR4040CTFP = Product Type Marking Code
AB = Foundry and Assembly Code
YYWW = Date Code Marking
YY = Last two digits of year (ex: 06 = 2006)
WW = Week (01 - 53)

Maximum Ratings (Per Leg) @ $T_A = 25^\circ\text{C}$ 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}	40	V
Working Peak Reverse Voltage	V_{RWM}		
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}	280	A
Peak Repetitive Reverse Surge Current (2 μ S - 1KHz)	I_{RRM}	2	A
Isolation Voltage (ITO-220AB Only) From terminal to heatsink $t = 3$ sec.	V_{AC}	2000	V

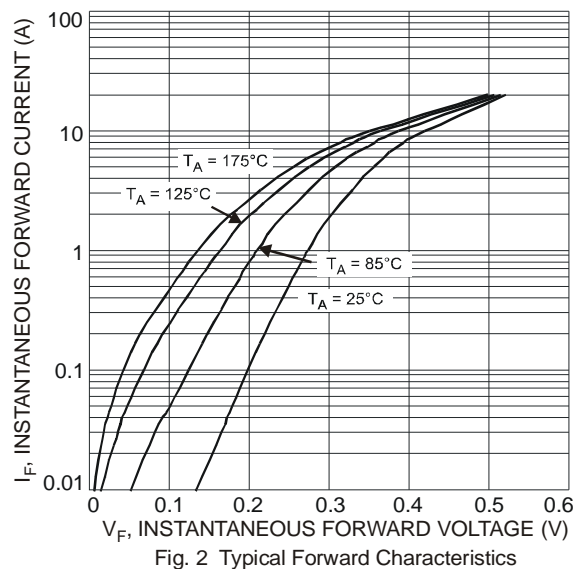
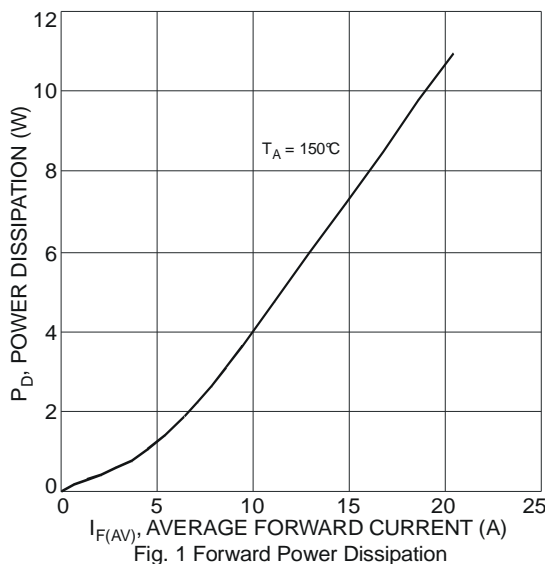
Thermal Characteristics (Per Leg)

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Package = TO-220AB Package = ITO-220AB	$R_{\theta JC}$	2 4	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	$^\circ\text{C}$

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	-	- 0.44	0.53 0.48	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 6)	I_R	-	-	0.5 100	mA	$V_R = 40\text{V}, T_J = 25^\circ\text{C}$ $V_R = 40\text{V}, T_J = 125^\circ\text{C}$

Notes: 6. Short duration pulse test used to minimize self-heating effect.
7. Using heatsink (by Black Aluminum 37mm * 50mm * 15mm)



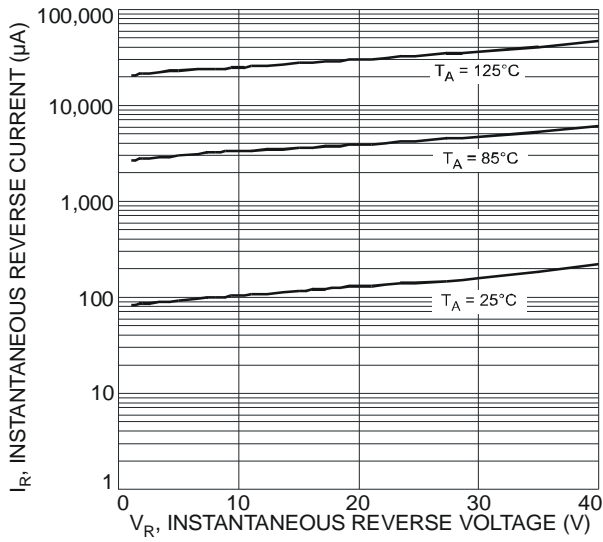


Fig. 3 Typical Reverse Characteristics

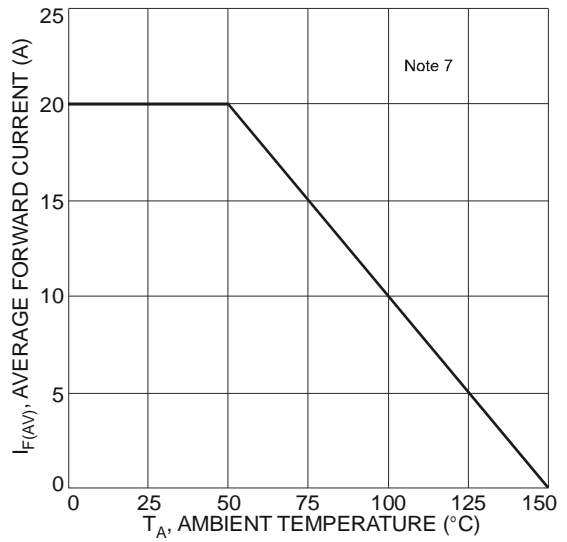


Fig. 4 Forward Current Derating Curve

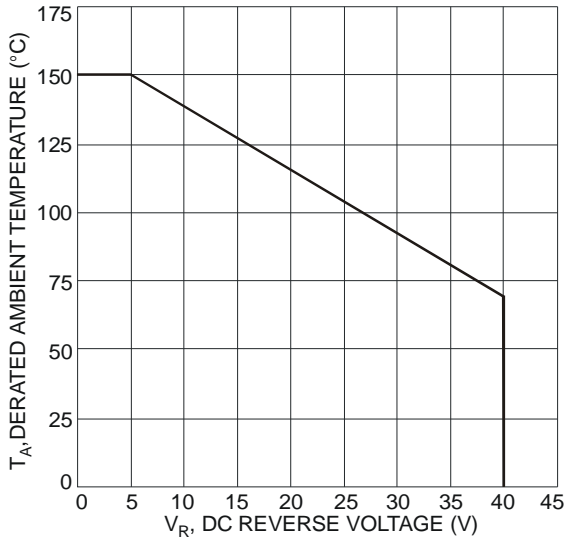
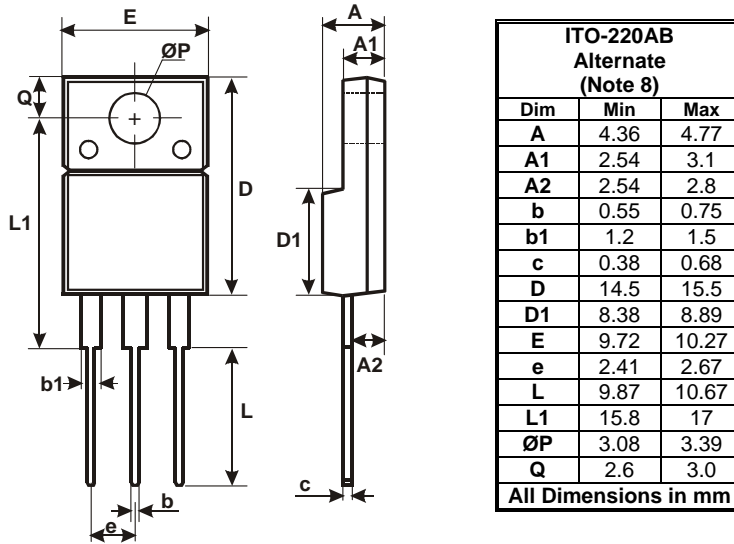
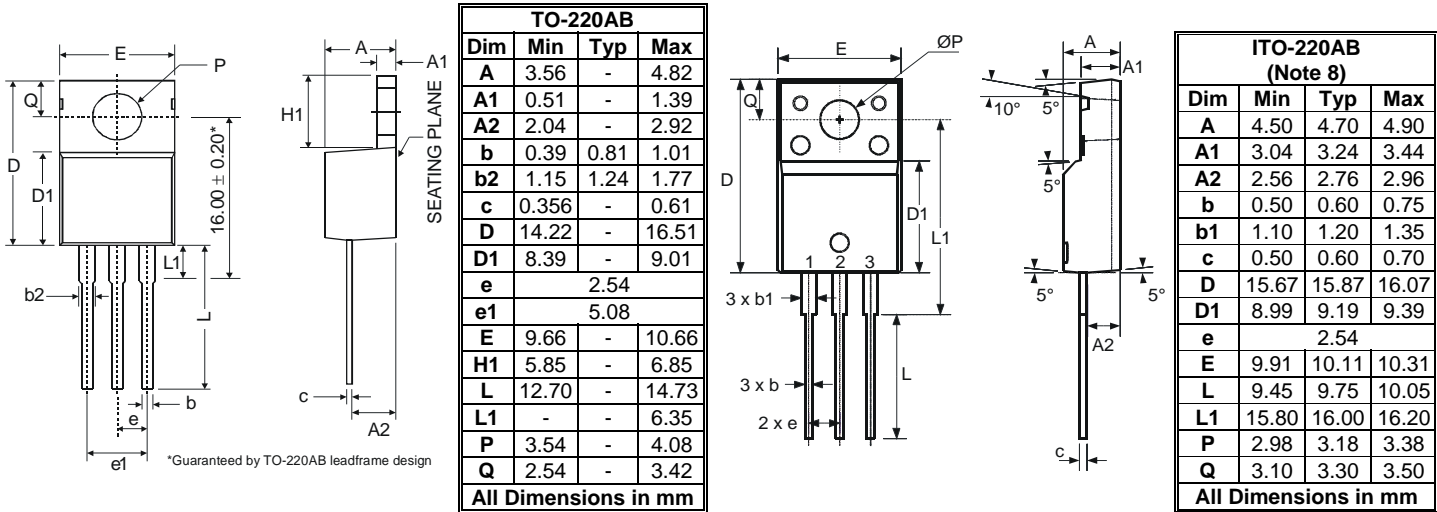


Fig. 5 Operating Temperature Derating

Package Outline Dimensions



Notes: 8. 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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1. are intended to implant into the body, or
2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.

B. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or to affect its safety or effectiveness.

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