SBR40U60CT
SBR40U60CTB

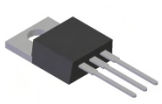
40A SBR®
SUPER BARRIER RECTIFIER

Features

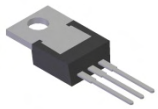
- Ultra Low Forward Voltage Drop
- Low Leakage Current
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 150ºC Operating Junction Temperature
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Also Available in Green Molding Compound**
  - **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

- Case: TO-200AB, D^2Pak
- 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 e3
- Weight: TO-220AB - 1.85 grams (approximate)
- D^2Pak – 1.6 grams (approximate)

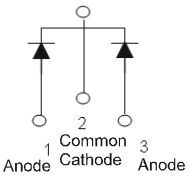


TO-220AB
Top View



TO-220AB
Bottom View

D^2Pak
Top View



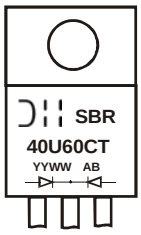
Package Pin Out
Configuration

Ordering Information (Notes 4 & 5)

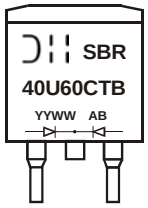
	Part Number	Case	Packaging
Pb	SBR40U60CT	TO-220AB	50 pieces/tube
Pb Green	SBR40U60CT-G	TO-220AB	50 pieces/tube
Pb	SBR40U 60CTB	D^2Pak	50 pieces/tube
Pb Green	SBR40U 60CTB-13	D^2Pak	800/Tape & Reel

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: SBR40U60CT-G.
5. For packaging details, go to our website at http://www.diodes.com.

Marking Information



SBR40U60CT = 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)



SBR40U60CTB = Product Type Marking Code
AB = Foundry and Assembly Code
YYWW = Date Code Marking
YY = Last two digits of year (ex: 12 = 2012)
WW = Week (01 - 53)

Maximum Ratings (Per Leg) @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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_{RM}	60	V
Average Rectified Output Current (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

Thermal Characteristics (Per Leg)

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Case	$R_{\theta JC}$	2	ºC/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	ºC

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop (per leg)	V_F	-	0.55 0.54	0.60 0.57	V	I_F = 20A, T_J = 25ºC I_F = 20A, T_J = 125ºC
Leakage Current (Note 6)	I_R	-	0.07 15	0.5 100	mA	V_R = 60V, T_J = 25ºC V_R = 60V, T_J = 125ºC

Notes: 6. Short duration pulse test used to minimize self-heating effect.

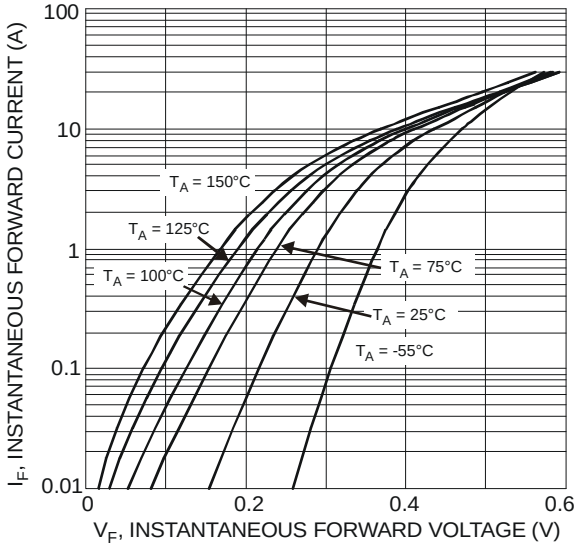


Fig.1 Typical Forward Characteristics

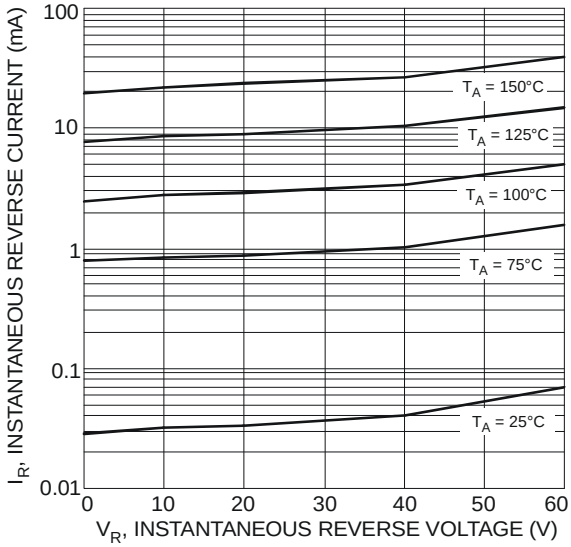


Fig. 2 Typical Reverse Characteristics

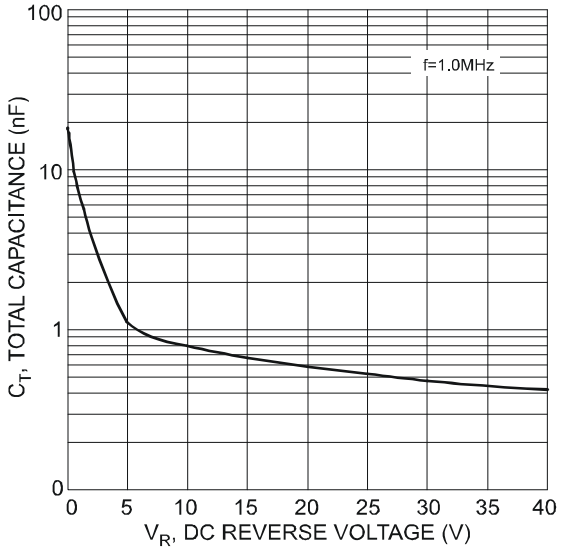


Fig. 3 Total Capacitance vs. Reverse Voltage

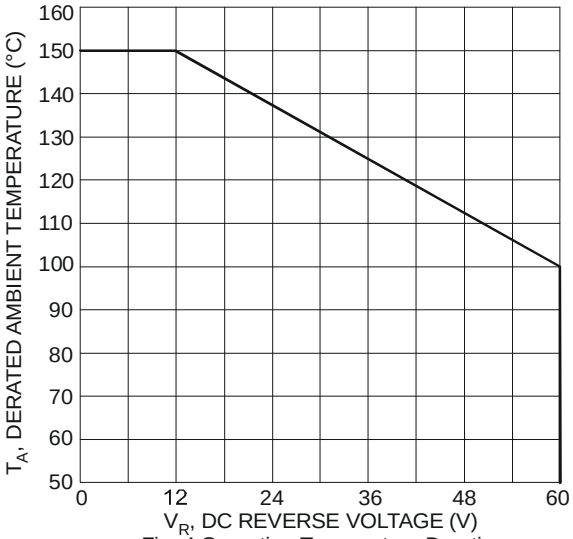
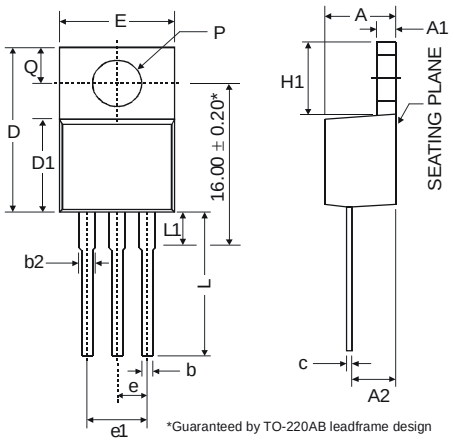
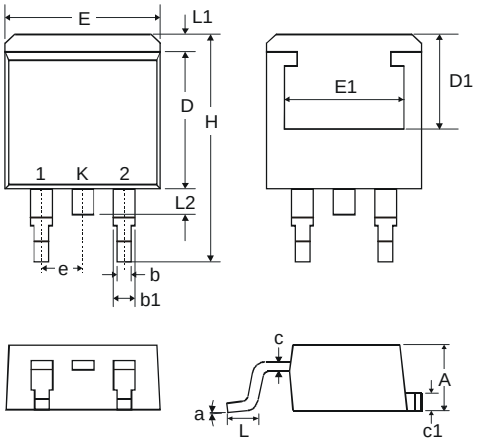


Fig. 4 Operating Temperature Derating

Package Outline Dimensions

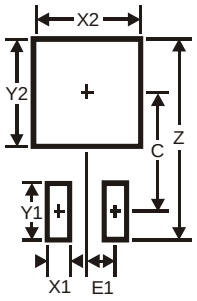


TO-220AB			
Dim	**Min**	**Typ**	**Max**
A	3.56	-	4.82
A1	0.51	-	1.39
A2	2.04	-	2.92
b	0.39	0.81	1.01
b2	1.15	1.24	1.77
c	0.356	-	0.61
D	14.22	-	16.51
D1	8.39	-	9.01
e	2.54		
e1	5.08		
E	9.66	-	10.66
H1	5.85	-	6.85
L	12.70	-	14.73
L1	-	-	6.35
P	3.54	-	4.08
Q	2.54	-	3.42
All Dimensions in mm			



D^2PAK		
Dim	**Min**	**Max**
A	4.07	4.82
b	0.51	0.99
b1	1.15	1.77
c	0.356	0.58
c1	1.143	1.65
D	8.39	9.65
D1	6.55	—
E	9.66	10.66
E1	6.23	—
e	2.54 Typ	
H	14.61	15.87
L	1.78	2.79
L1	—	1.67
L2	—	1.77
a	0°	8°
All Dimensions in mm		

Suggested Pad Layout



Dimensions	Value (in mm)
Z	16.9
X1	1.1
X2	10.8
Y1	3.5
Y2	11.4
C	9.5
E1	2.5