

40A SBR®
Super Barrier Rectifier

Features**Mechanical Data**

- Ultra Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 150°C Operating Junction Temperature
- Molded Plastic TO-220AB package
- **Lead Free Finish, RoHS Compliant (Note 2)**
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Matte Tin Finish annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 (e3)
- Marking: See Page 3
- Ordering Information: See Page 3

Maximum Ratings @ $T_A = 25^\circ\text{C}$ 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}	100	V
Working Peak Reverse Voltage	V_{RWM}		
DC Blocking Voltage	V_{RM}		
RMS Reverse Voltage	$V_{R(\text{RMS})}$	71	V
Average Rectified Output Current @ $T_C = 150^\circ\text{C}$	I_0	40	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	235	A
Maximum Thermal Resistance (per leg)	$R_{\theta JC}$	5	$^\circ\text{C/W}$
Thermal Resistance Junction to Case (Note 3)	$R_{\theta JA}$	15	
Thermal Resistance, Junction to Ambient (Note 3)			
Operating and Storage Temperature Range	T_j, T_{STG}	-65 to +150	$^\circ\text{C}$

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 1)	$V_{(BR)R}$	100	-	-	V	$I_R = 1 \text{ mA}$
Forward Voltage Drop (per leg)	V_F	-	0.67 0.60	0.72 0.64	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 1)	I_R	-	-	0.5 40	mA	$V_R = 100\text{V}, T_j = 25^\circ\text{C}$ $V_R = 100\text{V}, T_j = 125^\circ\text{C}$

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*.
3. Using heatsink (by Black Aluminum, 45mm x 20mm x 12mm)

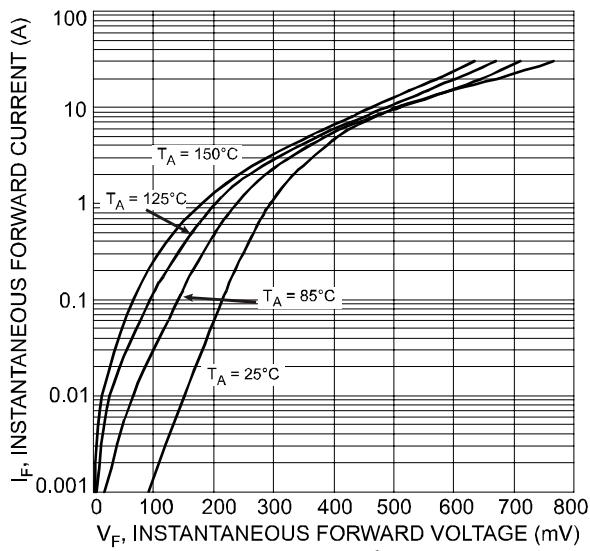


Fig. 1 Typical Forward Characteristics

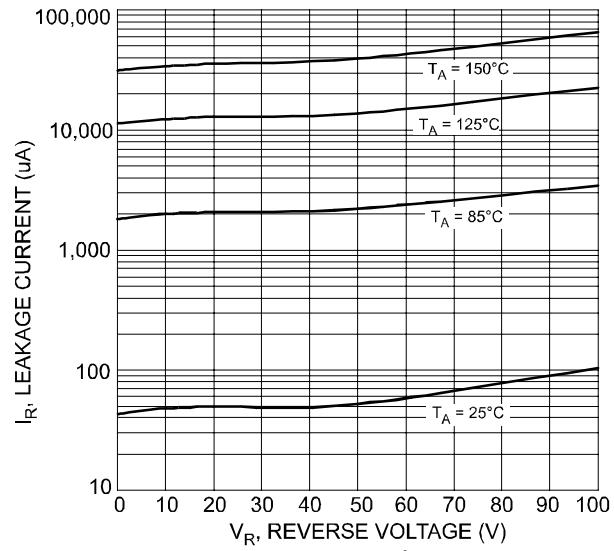


Fig. 2 Typical Reverse Characteristics

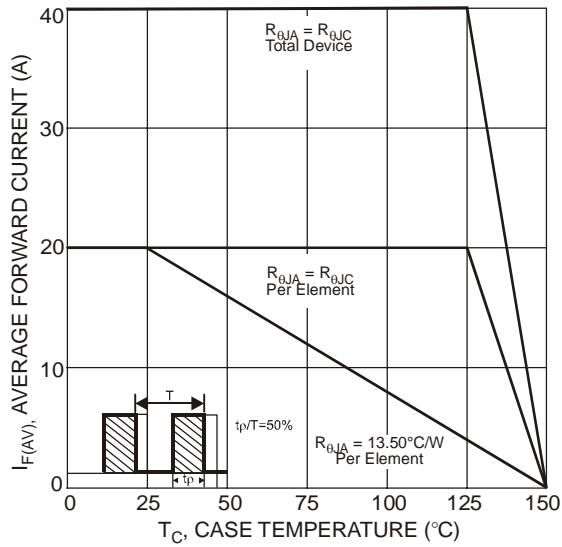
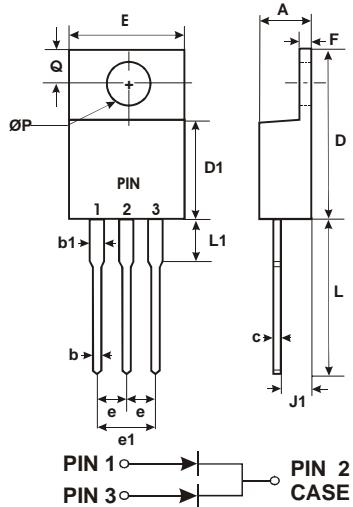


Fig. 3 Forward Current Derating Curve

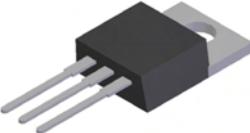
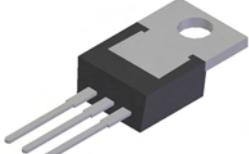
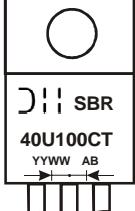
Package Outline Drawing



TO-220AB		
DIM.	MIN.	MAX.
A	4.47	4.67
b	0.71	0.91
b1	1.17	1.37
c	0.31	0.53
D	14.65	15.35
D1	8.50	8.90
E	10.01	10.31
e	2.54 typ	
e1	4.98	5.18
F	1.17	1.37
J1	2.52	2.82
L	13.40	13.80
L1	3.56	3.96
ØP	3.735	3.935
Q	2.59	2.89

All Dimensions in Millimeters

Marking, Polarity, Weight & Ordering Information

	Case Style - Top	Case Style - Bottom	Marking	Weight
SBR40U100CT				2.1g

Ordering Information	Date Code	Other Marking Information
SBR40U100CT 50 pieces/tube	YY = Last two digits of year, ex = 07 = 2007 WW = Week (01-52)	A = Foundry Code B = Assembly Code

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