


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
- 175°C Operating Junction Temperature
- Molded Plastic TO-220AB package
- **Lead Free Finish, RoHS Compliant (Note 2)**

Mechanical Data

- 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 lead frame. Solderable per MIL-STD-202, Method 208 
- Polarity: As Marked on Body
- Ordering Information: See Page 3
- Marking Information: See Page 3

Maximum Ratings @ T_A = 25°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 Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _{RM}	300	V
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
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 = 0.04 mA
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}	-	-	50	nS	I _F = 0.5A, I _{RR} = 0.25A, I _R = 1A

- 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*.

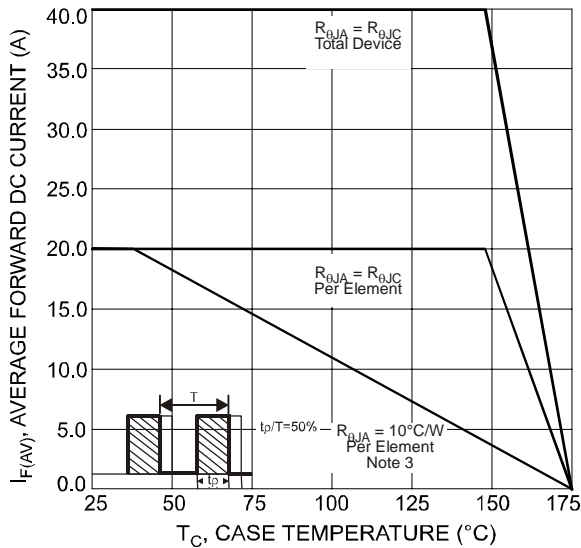
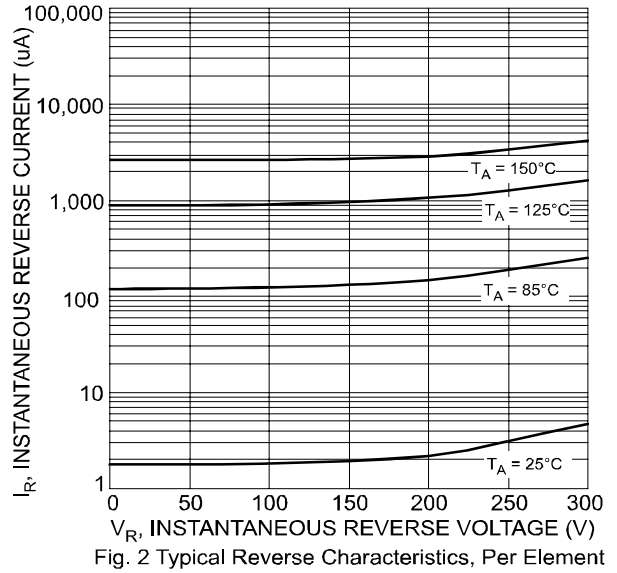
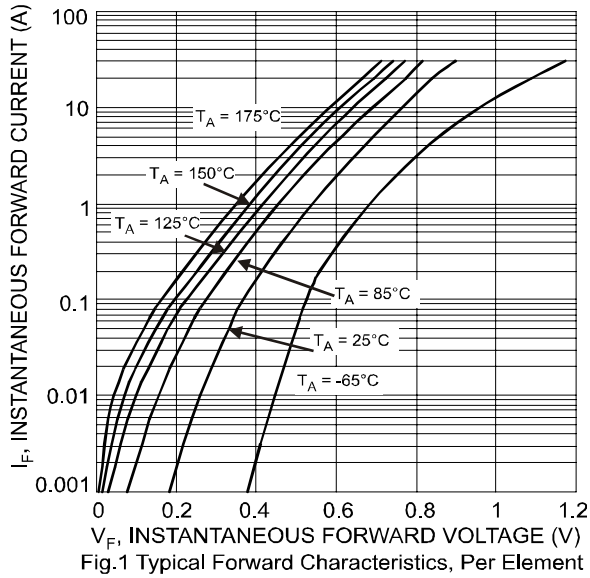
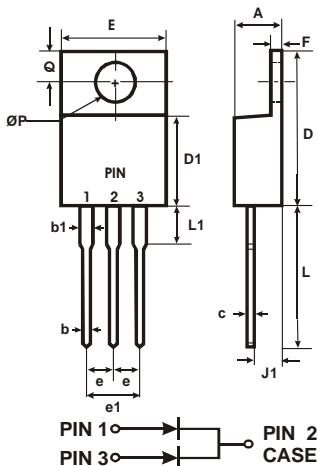


Fig. 3 DC Forward Current Derating Curve

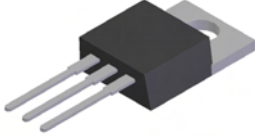
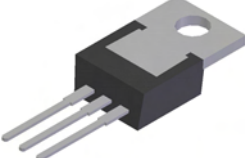
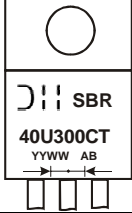
Notes: 3. Black Aluminium Heatsink; length 37mm, width 15mm, height 50mm

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 mm		

Marking, Polarity, Weight & Ordering Information

SBR40U300CT	Case Style - Top	Case Style - Bottom	Marking	Weight
				2.1 grams (approximate)

Ordering Information	Date Code	Other Marking Information
SBR40U300CT 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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