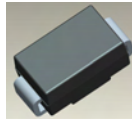


1.0A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER
Features

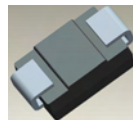
- Low Leakage Current
- Guard Ring Die Construction for Transient Protection
- Ideally Suited for Automated Assembly
- Low Power Loss, High Efficiency
- Surge Overload Rating to 45A Peak
- **Lead Free/RoHS Compliant (Note 3)**

Mechanical Data

- Case: SMB
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 (E3)
- Polarity: Cathode Band or Cathode Notch
- Marking Information: See page 3
- Ordering Information: See page 3
- Weight: 0.093 grams (approximate)



Top View



Bottom View

Maximum Ratings @ $T_A = 25^\circ\text{C}$ 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 @ $I_R = 0.1\text{mA}$	V_R		
RMS Reverse Voltage	$V_{R(RMS)}$	28	V
Average Rectified Output Current @ $T_T = 115^\circ\text{C}$	I_O	1.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	45	A
Non-Repetitive Peak Forward Surge Current 5 μs Single Half Sine-Wave	I_{FSM}	430	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Terminal (Note 1)	$R_{\theta JT}$	36	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V_F	-	-	0.53	V	$I_F = 1.0\text{A}, T_A = 25^\circ\text{C}$
		-	-	0.49		$I_F = 1.0\text{A}, T_A = 125^\circ\text{C}$
		-	-	0.70		$I_F = 2.0\text{A}, T_A = 25^\circ\text{C}$
		-	-	0.64		$I_F = 2.0\text{A}, T_A = 125^\circ\text{C}$
Leakage Current (Note 3)	I_R	-	-	0.1	mA	$V_R = 40\text{V}, T_A = 25^\circ\text{C}$
				4.0		$V_R = 40\text{V}, T_A = 100^\circ\text{C}$
Total Capacitance	C_T	-	-	80	pF	$V_R = 5\text{V}, f = 1\text{MHz}$

- Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see *EU Directive 2002/95/EC Annex Notes*.
 2. Thermal Resistance: Junction to terminal, unit mounted on PC board with 5.0 mm² (0.013 mm thick) copper pads as heat sink.
 3. Short duration pulse test used to minimize self-heating effect.

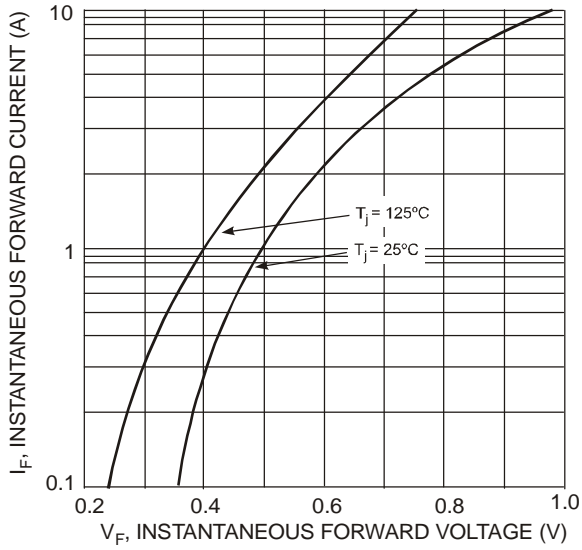


Fig. 1 Typical Forward Characteristics

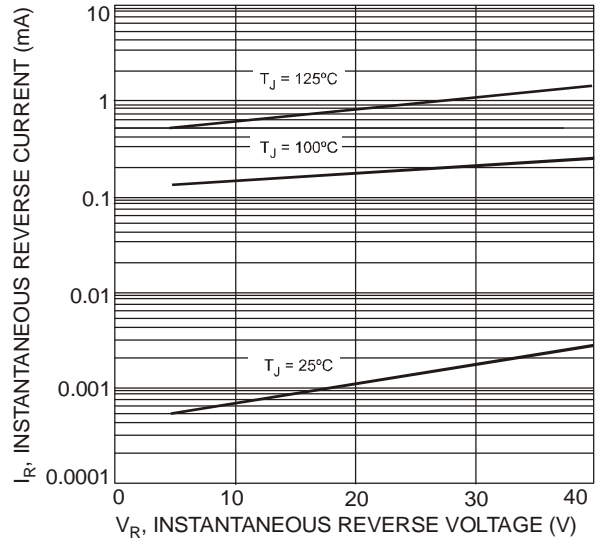


Fig. 2 Typical Reverse Characteristics

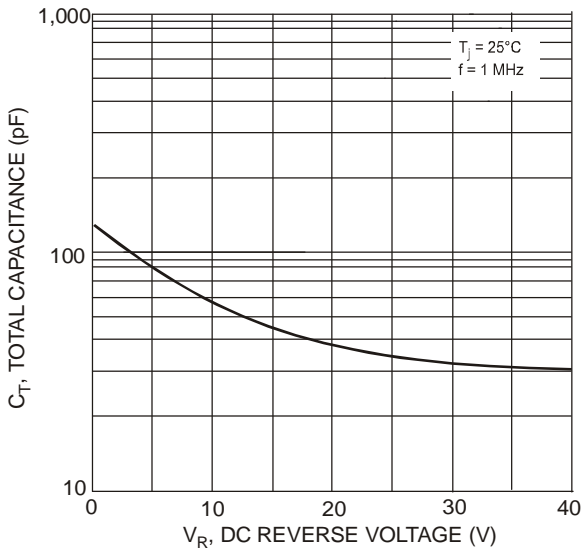


Fig. 3 Total Capacitance vs. Reverse Voltage

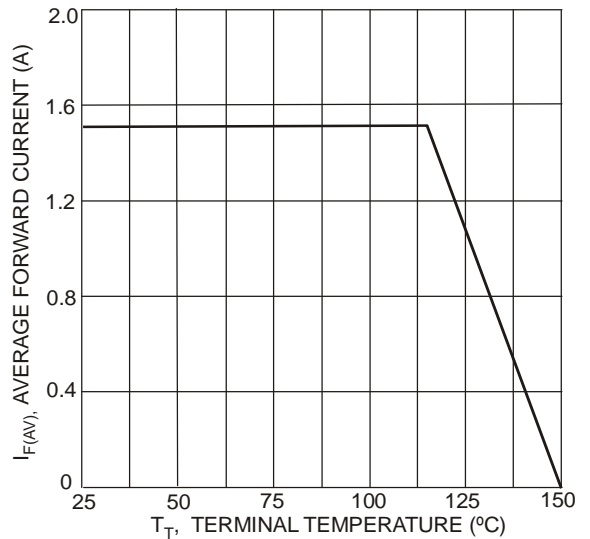


Fig. 4 Forward Current Derating Curve

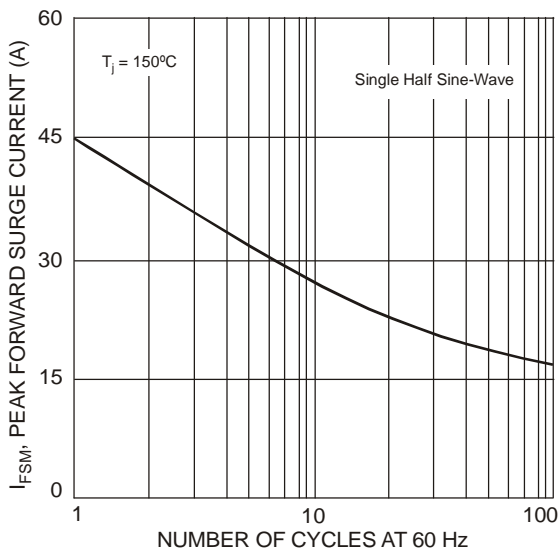


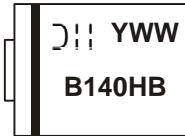
Fig. 5 Max Non-Repetitive Peak Forward Surge Current

Ordering Information (Note 4)

Part Number	Case	Packaging
B140HB-13-F	SMB	3000/Tape & Reel

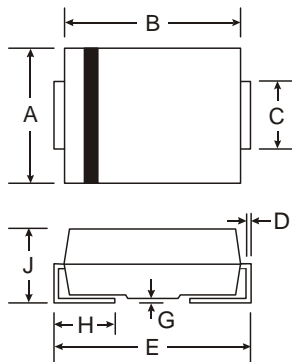
Notes: 4. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



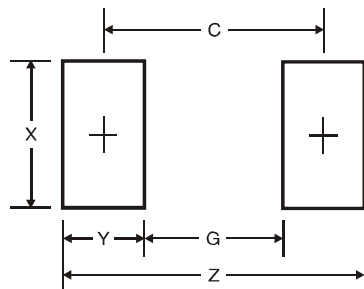
B140HB = Product type marking code
 DII = Manufacturers' code marking
 YWW = Date code marking
 Y = Last digit of year ex: 2 for 2002
 WW = Week code 01 to 52

Package Outline Dimensions



SMB		
Dim	Min	Max
A	3.30	3.94
B	4.06	4.57
C	1.96	2.21
D	0.15	0.31
E	5.00	5.59
G	0.05	0.20
H	0.76	1.52
J	2.00	2.62
All Dimensions in mm		

Suggested Pad Layout



Dimensions	Value (in mm)
Z	6.7
G	1.8
X	2.3
Y	2.5
C	4.3

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