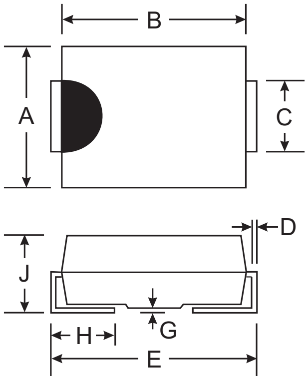
SPICE MODELS: B170 B180 B190 B1100
B170B B180B B190B B1100B

B170/B - B1100/B

1.0A HIGH VOLTAGE SCHOTTKY BARRIER RECTIFIER

Features

- Schottky Barrier Chip
- Guard Ring Die Construction for Transient Protection
- Ideally Suited for Automatic Assembly
- Low Power Loss, High Efficiency
- Surge Overload Rating to 30A Peak
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Application
- High Temperature Soldering: 260°C/10 Second at Terminal
- **Lead Free Finish/RoHS Compliant (Note 3)**



Dim	SMA		SMB	
	Min	Max	Min	Max
A	2.29	2.92	3.30	3.94
B	4.00	4.60	4.06	4.57
C	1.27	1.63	1.96	2.21
D	0.15	0.31	0.15	0.31
E	4.80	5.59	5.00	5.59
G	0.10	0.20	0.10	0.20
H	0.76	1.52	0.76	1.52
J	2.01	2.30	2.00	2.40
All Dimensions in mm				

No Suffix Designates SMA Package
"B" Suffix Designates SMB Package

Mechanical Data

- Case: SMA / SMB
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band or Cathode Notch
- Mounting Position: Any
- Marking: Type Number
- SMA Weight: 0.064 grams (approximate)
- SMB Weight: 0.093 grams (approximate)

Maximum Ratings and Electrical Characteristics

@ $T_A = 25°C$ unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Characteristic	Symbol	B170/B	B180/B	B190/B	B1100/B	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	70	80	90	100	V
RMS Reverse Voltage	$V_{R(RMS)}$	49	56	63	70	V
Average Rectified Output Current @ $T_T = 125°C$	I_O	1.0				A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	30				A
Forward Voltage @ $I_F = 1.0A$ @ $T_A = 25°C$ @ $T_A = 100°C$	V_{FM}	0.79 0.69				V
Peak Reverse Current @ $T_A = 25°C$ at Rated DC Blocking Voltage @ $T_A = 100°C$	I_{RM}	0.5 5.0				mA
Typical Junction Capacitance (Note 2)	C_j	80				pF
Typical Thermal Resistance Junction to Terminal (Note 1)	$R_{\theta JT}$	25				K/W
Operating and Storage Temperature Range	T_j, T_{STG}	-65 to +150				°C

Notes:
1. Valid provided that terminals are kept at ambient temperature.
2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
3. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see *EU Directive Annex Notes 5 and 7.*

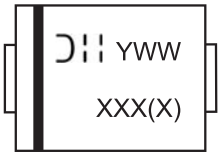
Ordering Information (Note 4)

Device*	Packaging	Shipping
B1x-13-F B1xB-13-F	SMA SMB	5000/Tape & Reel 3000/Tape & Reel

Notes: 4. For Packaging Details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

* x = Device type, e.g. B180-13-F (SMA package); B1100B-13-F (SMB package).

Marking Information



XXX = Product type marking code, ex: B170 (SMA package)
XXXX = Product type marking code, ex: B190B (SMB package)
Ↄ¦¦ = Manufacturers' code marking
YWW = Date code marking
Y = Last digit of year ex: 2 for 2002
WW = Week code 01 to 52

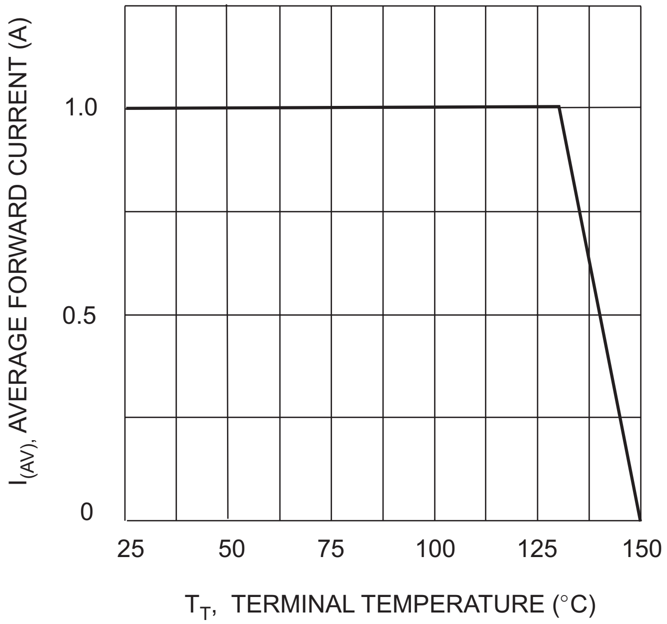


Fig. 1 Forward Current Derating Curve

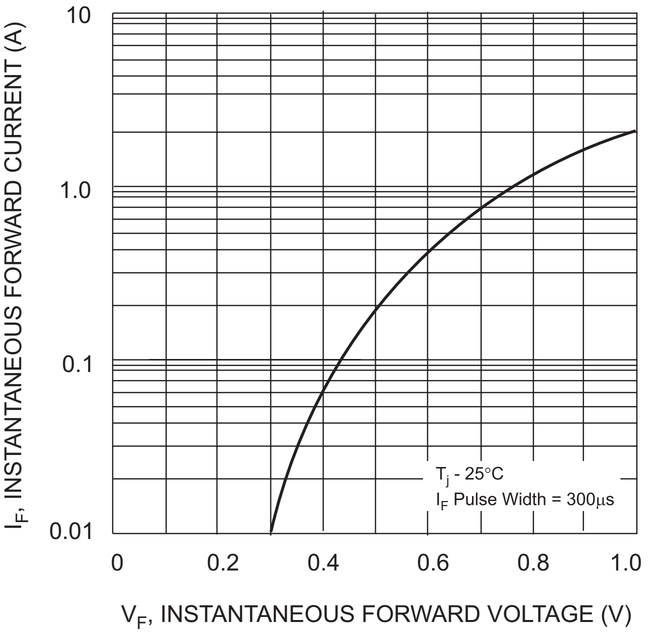


Fig. 2 Typical Forward Characteristics

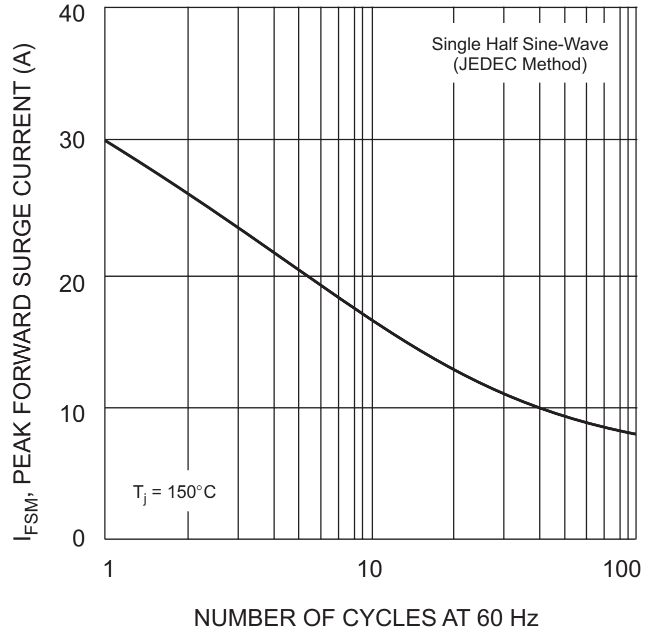


Fig. 3 Max Non-Repetitive Peak Forward Surge Current

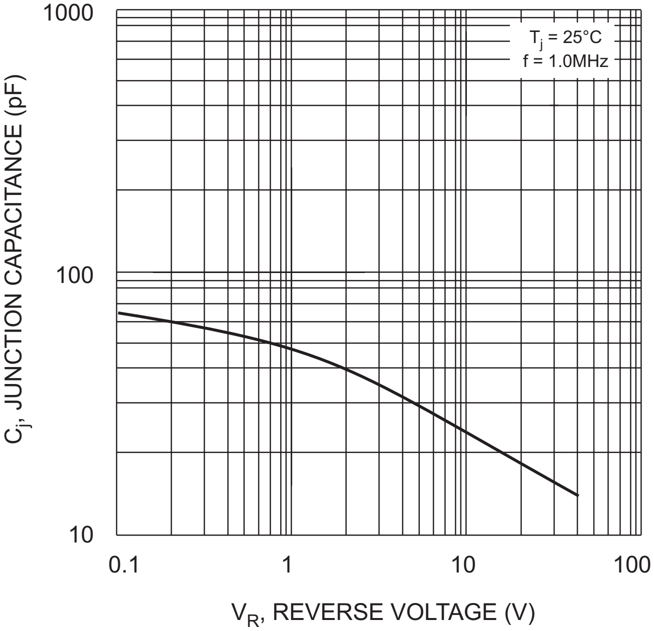


Fig. 4 Typical Junction Capacitance