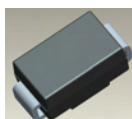


**2.0A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER**
**Features**

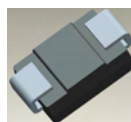
- Guard Ring Die Construction for Transient Protection
- Ideally Suited for Automated Assembly
- Low Power Loss, High Efficiency
- Surge Overload Rating to 50A Peak
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Application
- High Temperature Soldering: 260°C/10 Second at Terminal
- **Lead Free Finish/RoHS Compliant (Note 1)**

**Mechanical Data**

- Case: SMA/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 (B3)
- Polarity: Cathode Band or Cathode Notch
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: SMA 0.064 grams (Approximate)  
SMB 0.093 grams (Approximate)



Top View



Bottom View

**Maximum Ratings** @T<sub>A</sub> = 25°C unless otherwise specified

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

Characteristic	Symbol	B220/A	B230/A	B240/A	B250/A	B260/A	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	20	30	40	50	60	V
Working Peak Reverse Voltage	V <sub>RWM</sub>						
DC Blocking Voltage	V <sub>R</sub>						
RMS Reverse Voltage	V <sub>R(RMS)</sub>	14	21	28	35	42	V
Average Rectified Output Current @ T <sub>T</sub> = 100°C	I <sub>O</sub>	2.0					A
Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	50					A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Terminal	R <sub>θJT</sub>	20	°C/W
Typical Thermal Resistance, Junction to Ambient (Note 2)	R <sub>θJA</sub>	25	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

**Electrical Characteristics** @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop B220/A, B230/A, B240/A B250/A, B260/A	V <sub>F</sub>	-	-	0.50 0.70	V	I <sub>F</sub> = 2.0A, T <sub>A</sub> = 25°C
Leakage Current (Note 3)	I <sub>R</sub>	-	-	0.5 20	mA	@ Rated V <sub>R</sub> , T <sub>A</sub> = 25°C @ Rated V <sub>R</sub> , T <sub>A</sub> = 100°C
Total Capacitance	C <sub>T</sub>	-	-	200	pF	V <sub>R</sub> = 4V, f = 1MHz

- 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 mm<sup>2</sup> (0.013 mm thick) copper pad as heat sink.
  3. Short duration pulse test used to minimize self-heating effect.

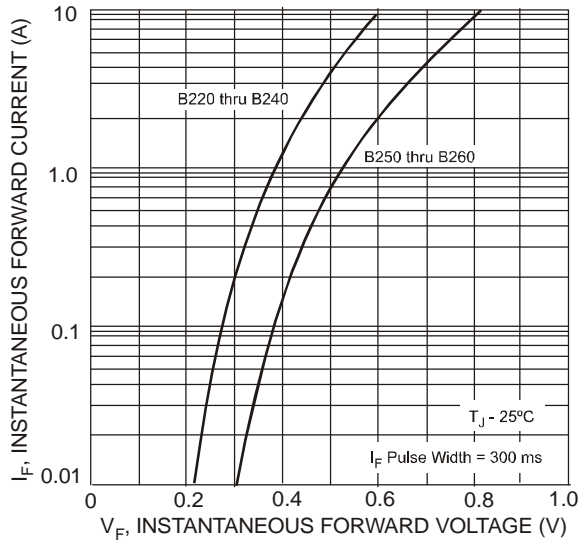


Fig. 1 Typical Forward Characteristics

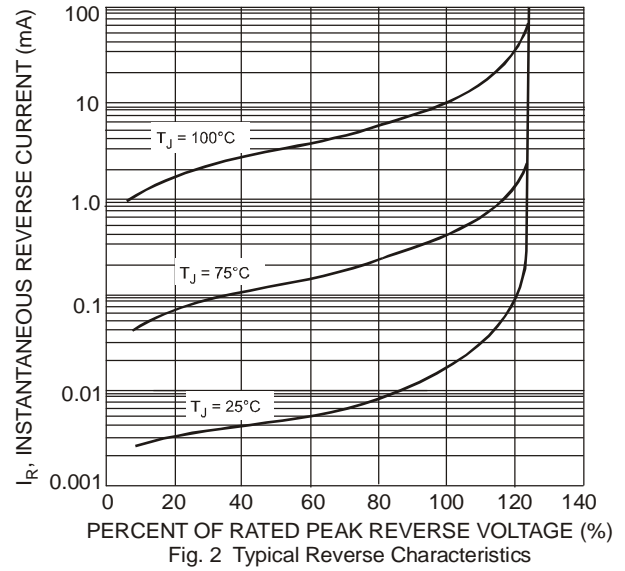


Fig. 2 Typical Reverse Characteristics

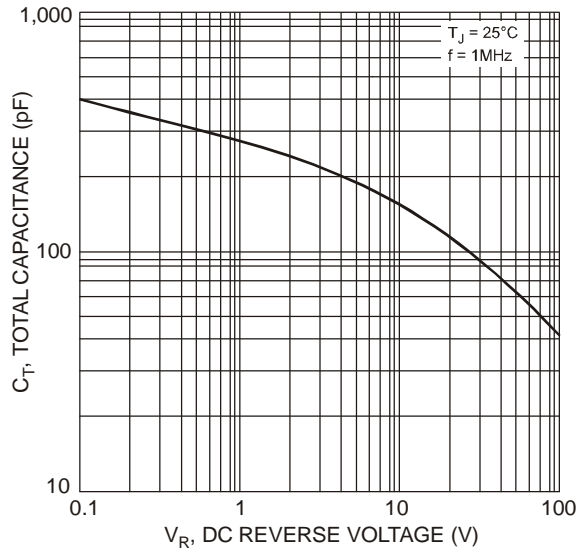


Fig. 3 Total Capacitance vs. Reverse Voltage

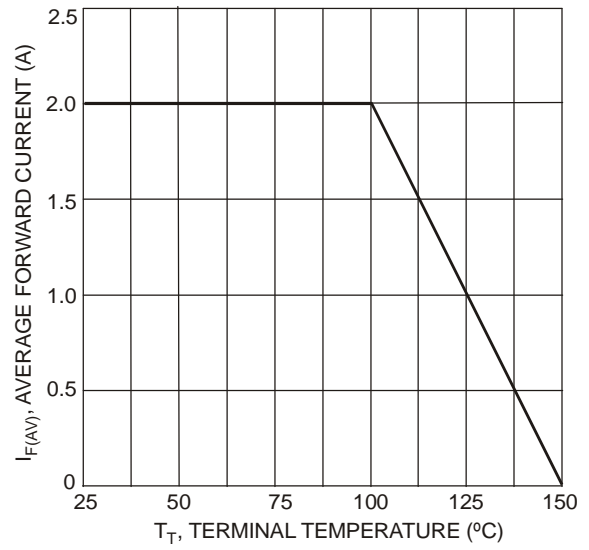


Fig. 4 Forward Current Derating Curve

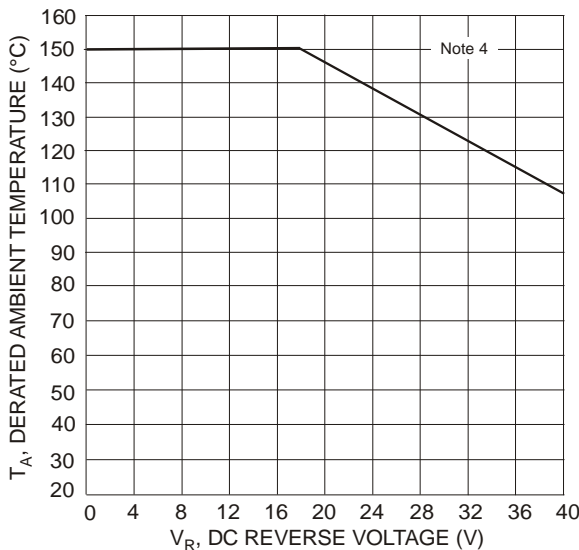


Fig. 5 Operating Temperature Derating (B240)

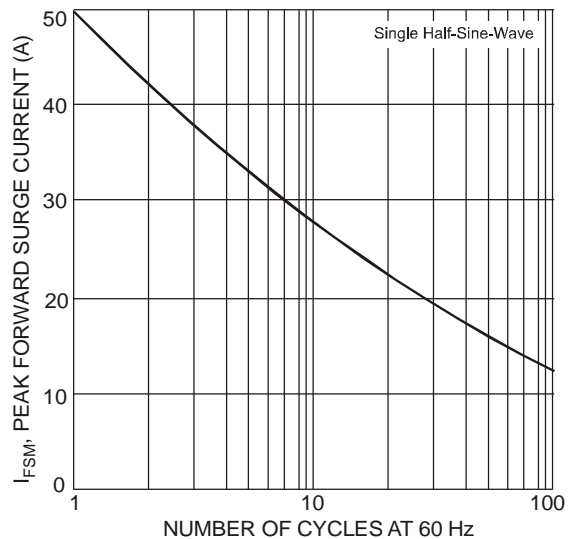


Fig. 6 Max Non-Repetitive Peak Forward Surge Current

4. Device mounted on FR-4 PC board with minimum recommended pad layout pattern as per <http://www.diodes.com/datasheets/ap02001.pdf>.

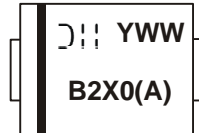
## Ordering Information (Note 5)

Part Number	Case	Packaging
B2xxA-13-F	SMA	5000/Tape & Reel
B2xx-13-F	SMB	3000/Tape & Reel

\* x = Device type, e.g. B260A-13-F (SMA package); B240-13-F (SMB package).

Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



B2X0A = Product type marking code, ex: B220A (SMA package)

B2X0 = Product type marking code, ex: B230 (SMB package)

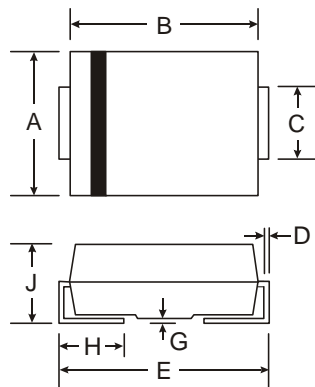
YWW = Manufacturers' code marking

YWW = Date code marking

Y = Last digit of year ex: 2 for 2002

WW = Week code 01 to 52

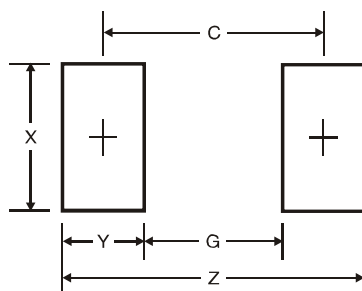
## Package Outline Dimensions



SMA		
Dim	Min	Max
A	2.29	2.92
B	4.00	4.60
C	1.27	1.63
D	0.15	0.31
E	4.80	5.59
G	0.05	0.20
H	0.76	1.52
J	2.01	2.30
All Dimensions in mm		

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



SMA Dimensions	Value (in mm)
Z	6.5
G	1.5
X	1.7
Y	2.5
C	4.0

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

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