

#### 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)
- Green Molding Compound (No Halogen and Antimony) (Note 2)

## **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
   (3)
- 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 Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	20	30	40	50	60	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	14	21	28	35	42	V
Average Rectified Output Current @ T <sub>T</sub> = 100°C	lo			2.0			Α
Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>			50			Α

### **Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Terminal	$R_{ heta JT}$	20	°C/W
Typical Thermal Resistance, Junction to Ambient (Note 3)	$R_{ heta JA}$	25	°C/W
Operating and Storage Temperature Range	T <sub>J.</sub> T <sub>STG</sub>	-65 to +150	°C

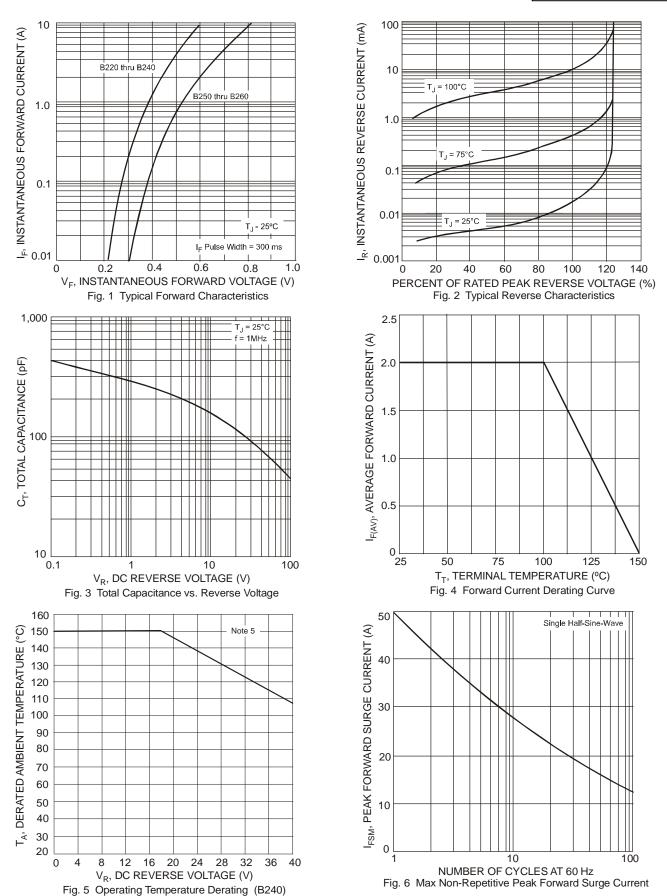
### Electrical Characteristics @TA = 25°C unless otherwise specified

Charac	teristic	Symbol	Min	Тур	Max	Unit	Test Condition
Forward Voltage Drop	B220/A, B230/A, B240/A B250/A, B260/A	VF	-	-	0.50 0.70	V	I <sub>F</sub> = 2.0A, T <sub>A</sub> = 25°C
Leakage Current (Note 4)		$I_R$	1 1	1 1	0.5 20	mA	<ul> <li>@ Rated V<sub>R</sub>, T<sub>A</sub> = 25°C</li> <li>@ Rated V<sub>R</sub>, T<sub>A</sub> = 100°C</li> </ul>
Total Capacitance		$C_{T}$	-	-	200	pF	$V_R = 4V$ , $f = 1MHz$

Notes:

- 1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied. Please visit our website at http://www.diodes.com/quality/lead\_free.html.
- 2. Product manufactured with Data Code 0924 (week 24, 2009) and newer are built with Green Molding Compound.
- 3. Thermal Resistance: Junction to terminal, unit mounted on PC board with 5.0 mm² (0.013 mm thick) copper pad as heat sink.
- 4. Short duration pulse test used to minimize self-heating effect.





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



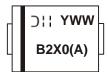
### Ordering Information (Note 6)

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

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

6. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

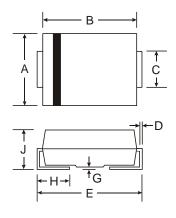
## **Marking Information**



B2X0A = Product type marking code, ex: B220A (SMA package) B2X0 = Product type marking code, ex: B230 (SMB package) );; = Manufacturers' code marking YWW = Date code marking Y = Last digit of year (ex: 2 for 2002)

WW = Week code 01 to 52

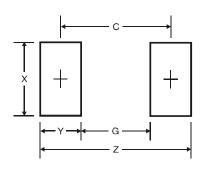
# **Package Outline Dimensions**



SMA			
Dim	Min	Max	
Α	2.29	2.92	
В	4.00	4.60	
C	1.27	1.63	
D	0.15	0.31	
Е	4.80	5.59	
G	0.05	0.20	
Η	0.76	1.52	
7	2.01	2.30	
All Dimensions in mm			

	SMB			
Dim	Min	Max		
Α	3.30	3.94		
В	4.06	4.57		
С	1.96	2.21		
D	0.15	0.31		
Е	5.00	5.59		
G	0.05	0.20		
Н	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
Х	1.7
Y	2.5
С	4.0

SMB Dimensions	Value (in mm)
Z	6.7
G	1.8
Х	2.3
Υ	2.5
С	4.3



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