

## Features

- Ultra Low Forward Voltage Drop
- Superior Reverse Avalanche Capability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- +150°C Operating Junction Temperature
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**



Top View



Bottom View

## Mechanical Data


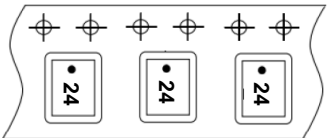

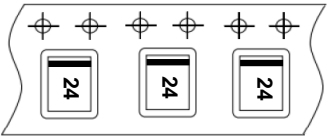
- Case: X1-DFN1006-2
- Case Material: Molded Plastic, "Green" Molding Compound.  
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - NiPdAu over Copper Leadframe.  
Solderable per MIL-STD-202, Method 208④
- Weight: 0.001 grams (Approximate)

## Ordering Information (Note 4)

Part Number	Case	Packaging
SBR0240LP-7	X1-DFN1006-2	3,000/Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

## Marking Information

SBR0240LP-7	 <p>Top View Dot Denotes Cathode</p> 	<p>From date code 1527 (YYWW), this changed to:</p>  <p>Top View Bar Denotes Cathode</p> 
	24 = Product Type Marking Code	

## 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	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>RM</sub>	40	V
Average Rectified Output Current (See Figure 1)	I <sub>O</sub>	250	mA
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	5	A

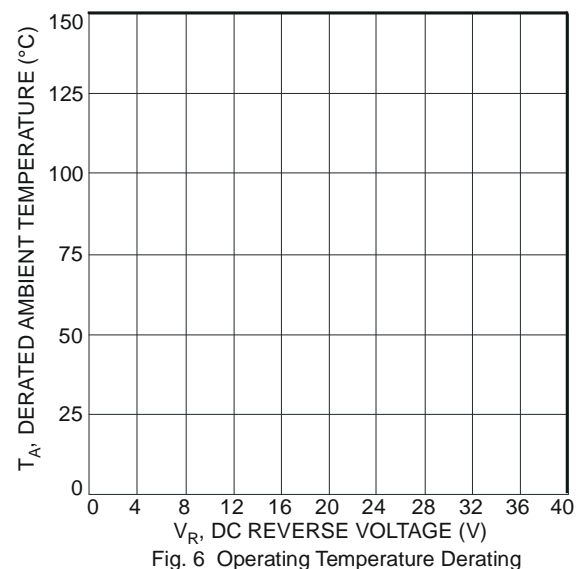
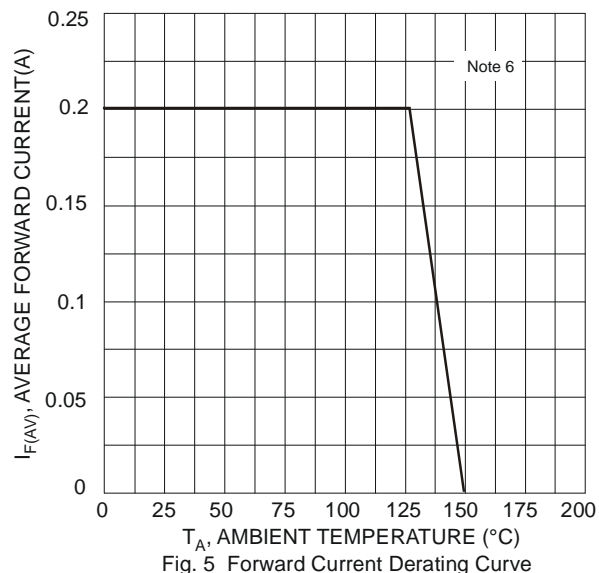
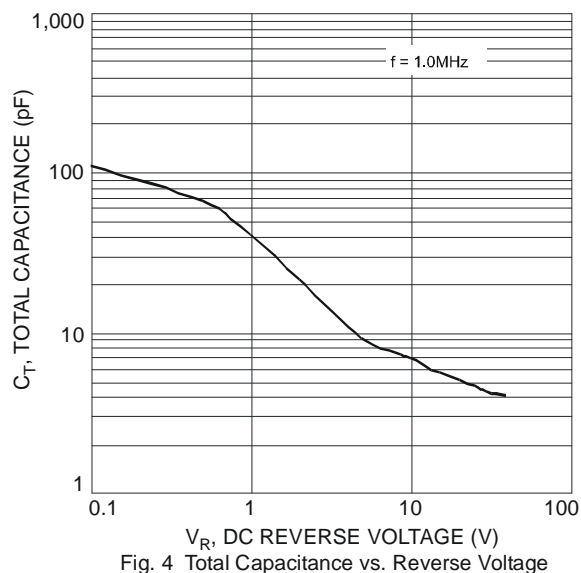
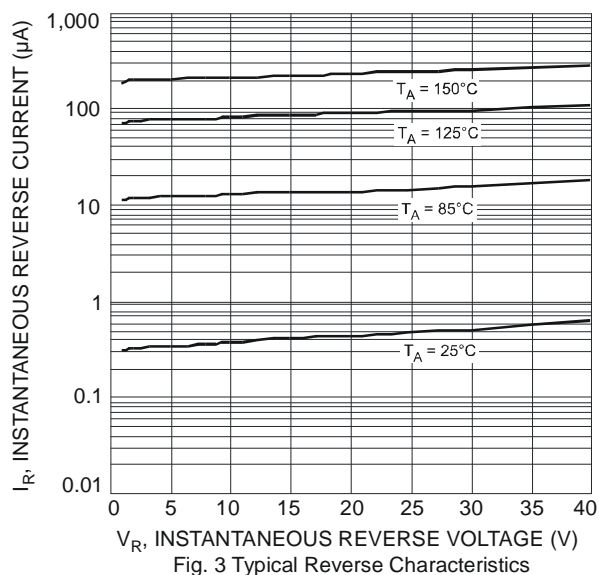
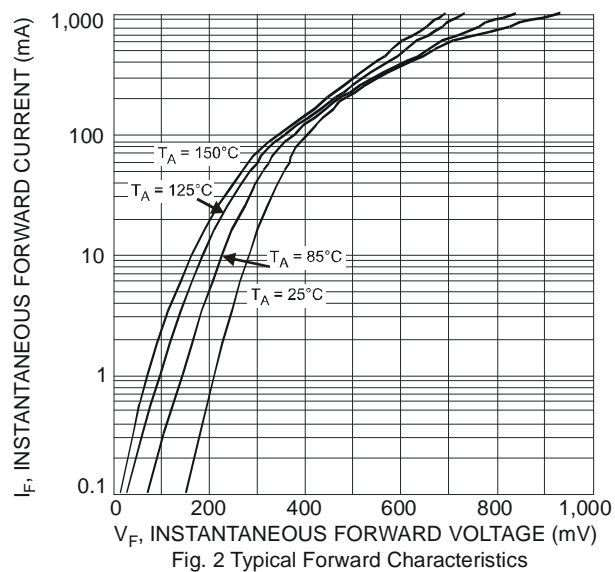
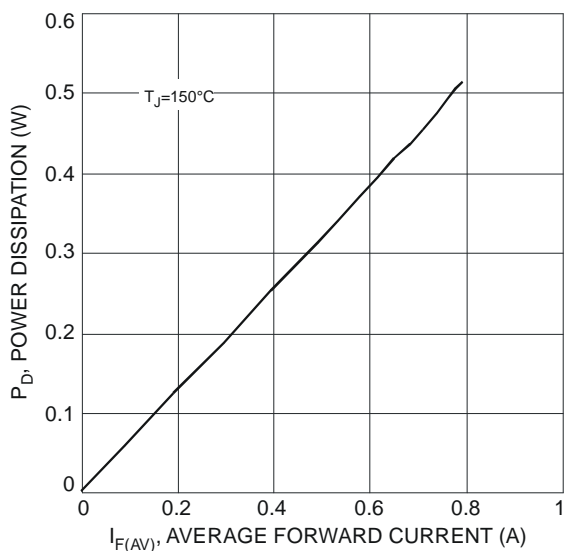
## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Ambient T <sub>A</sub> = +25°C (Note 6)	R <sub>θJA</sub>	270	°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.)

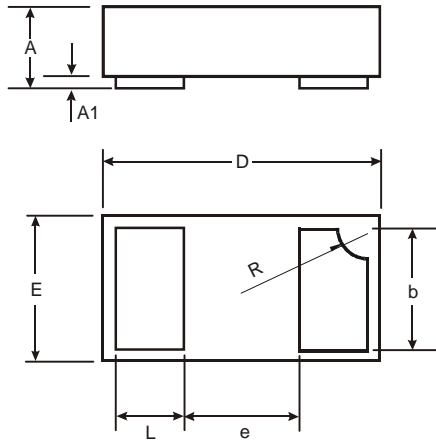
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V <sub>F</sub>	-	0.15	0.21	V	I <sub>F</sub> = 0.1mA, T <sub>J</sub> = +25°C
		-	0.22	0.28		I <sub>F</sub> = 1.0mA, T <sub>J</sub> = +25°C
		-	0.29	0.35		I <sub>F</sub> = 10mA, T <sub>J</sub> = +25°C
		-	0.41	0.49		I <sub>F</sub> = 100mA, T <sub>J</sub> = +25°C
		-	0.49	0.59		I <sub>F</sub> = 200mA, T <sub>J</sub> = +25°C
		-	0.47	0.56		I <sub>F</sub> = 200mA, T <sub>J</sub> = +125°C
Leakage Current (Note 5)	I <sub>R</sub>	-	0.5 0.6	- 10	μA	V <sub>R</sub> = 25V, T <sub>J</sub> = +25°C V <sub>R</sub> = 40V, T <sub>J</sub> = +25°C

Notes: 5. Short duration pulse test used to minimize self-heating effect.  
6. FR-4 PCB, 2oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>.



## Package Outline Dimensions

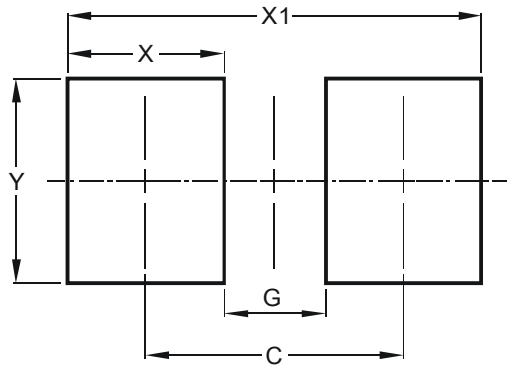
Please see AP02001 at [http://www.diodes.com/\\_files/datasheets/ap02001.pdf](http://www.diodes.com/_files/datasheets/ap02001.pdf) for the latest version.



X1-DFN1006-2			
Dim	Min	Max	Typ
A	0.47	0.53	0.50
A1	0	0.05	0.03
b	0.45	0.55	0.50
D	0.95	1.075	1.00
E	0.55	0.675	0.60
e	-	-	0.40
L	0.20	0.30	0.25
R	0.05	0.15	0.10
All Dimensions in mm			

## Suggested Pad Layout

Please see AP02001 at [http://www.diodes.com/\\_files/datasheets/ap02001.pdf](http://www.diodes.com/_files/datasheets/ap02001.pdf) for the latest version.



Dimensions	Value (in mm)
C	0.70
G	0.30
X	0.40
X1	1.10
Y	0.70

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