

Features

- Ultra-Low Forward Voltage Drop
- Superior Reverse Avalanche Capability
- Patented Super Barrier Rectifier Technology (SBR®)
- 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)**
- **This part is qualified to JEDEC standards (as references in AEC-Q) for High Reliability.**
<https://www.diodes.com/quality/product-definitions/>
- An automotive-compliant part is available under separate datasheet ([SBR02U100LPQ](#))

Mechanical Data

- Package: X1-DFN1006-2
- Package Material: Molded Plastic, "Green" Molding Compound.
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Bar
- Terminals: Finish - NiPdAu over Copper Leadframe.
Solderable per MIL-STD-202, Method 208 (e4)
- Weight: 0.001 grams (Approximate)

X1-DFN1006-2



Top View



Bottom View

Ordering Information (Note 4)

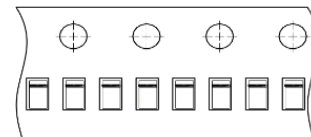
Orderable Part Number	Package	Packing	
		Qty.	Carrier
SBR02U100LP-7	X1-DFN1006-2	3,000	Tape & Reel
SBR02U100LP-7B	X1-DFN1006-2	10,000	Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
 2. See <https://www.diodes.com/quality/lead-free/> 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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



2A & 2A= Product Type Marking Code



Maximum Ratings (@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	Value	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	100	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _{RM}		
RMS Reverse Voltage	V _{R(RMS)}	70	V
Average Rectified Output Current (See Figure 1)	I _O	250	mA
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine Wave Superimposed on Rated Load	I _{FSM}	5	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance	R _{θJA} R _{θJA}	270 235	°C/W
Thermal Resistance, Junction to Ambient (Note 5) T _A = +25°C			
Thermal Resistance, Junction to Ambient (Note 6) T _A = +25°C			
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	V _{(BR)R}	100	—	—	V	I _R = 1mA
Forward Voltage Drop	V _F	—	0.67 0.76 0.60	0.72 0.80 0.65	V	I _F = 100mA, T _J = +25°C I _F = 200mA, T _J = +25°C I _F = 200mA, T _J = +125°C
Leakage Current (Note 7)	I _R	—	0.04 6	1.0 50	μA	V _R = 75V, T _J = +25°C V _R = 75V, T _J = +85°C
Total Capacitance	C _T	—	80	—	pF	V _R = 0V, f = 1MHz
Reverse-Recovery Time	t _{RR}	—	3.6	—	ns	I _F = 10mA, I _{RR} = 0.1*I _R , T _A = +25°C

Notes: 5. FR-4 PCB, 2oz. copper, minimum recommended pad layout per <http://www.diodes.com/package-outlines.html>.
6. Polyimide PCB, 2oz. copper, minimum recommended pad layout per <http://www.diodes.com/package-outlines.html>.
7. Short duration pulse test used to minimize self-heating effect.

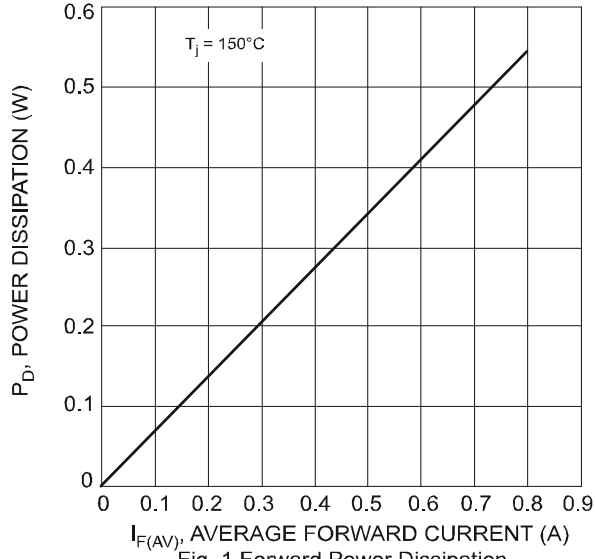


Fig. 1 Forward Power Dissipation

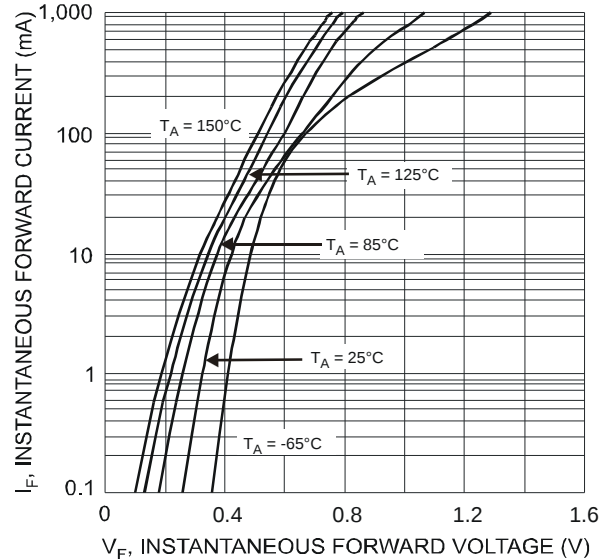


Fig. 2 Typical Forward Characteristics

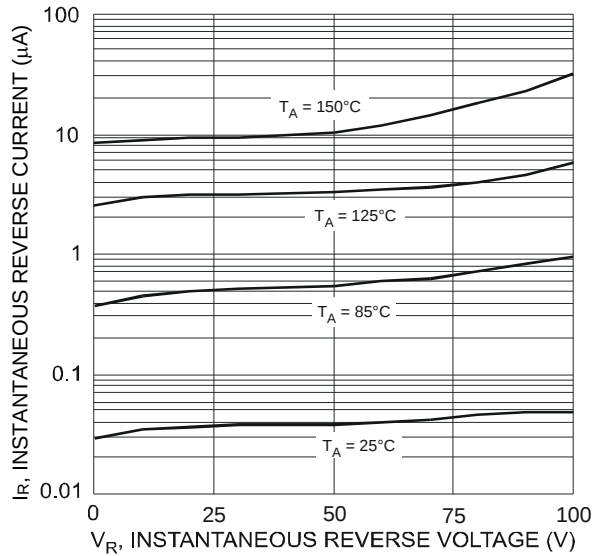


Fig. 3 Typical Reverse Characteristics

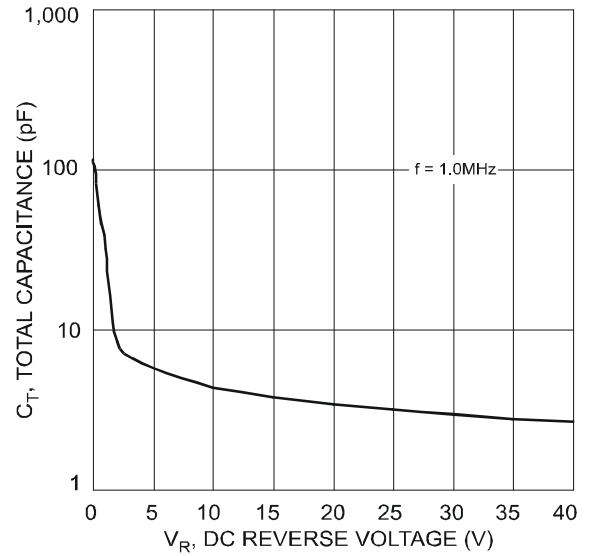


Fig. 4 Typical Capacitance vs. Reverse Voltage

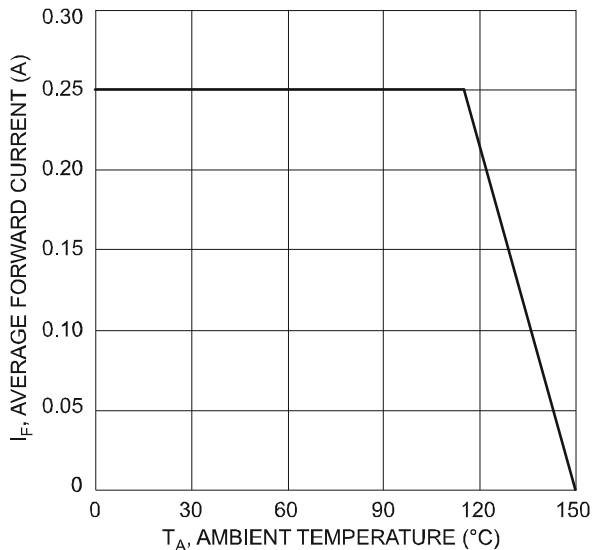


Fig. 5 Forward Current Derating Curve

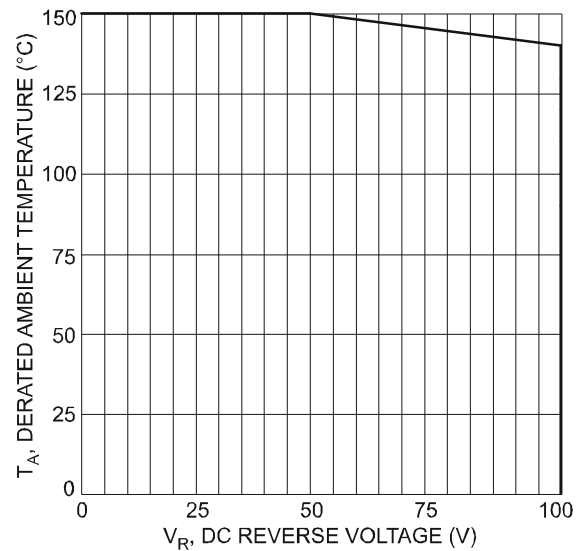
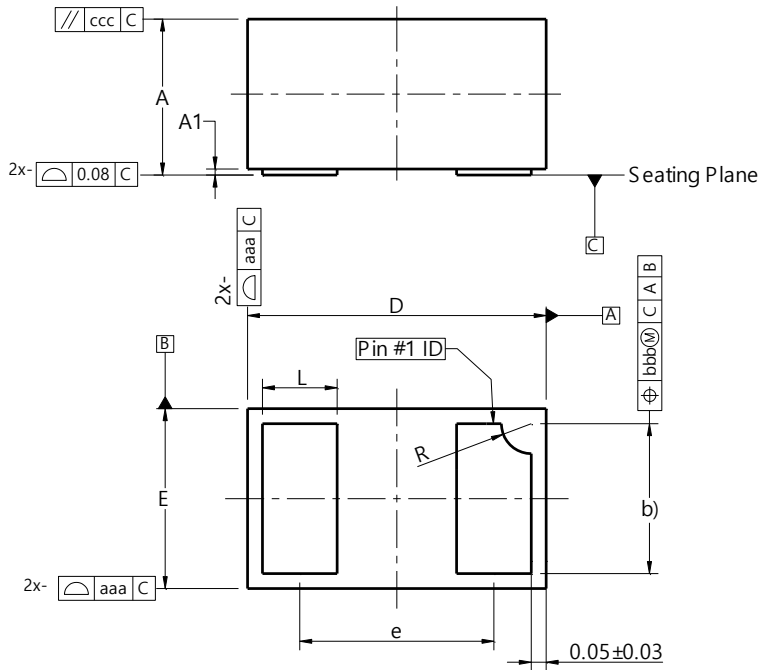


Fig. 6 Operating Temperature Derating

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

X1-DFN1006-2

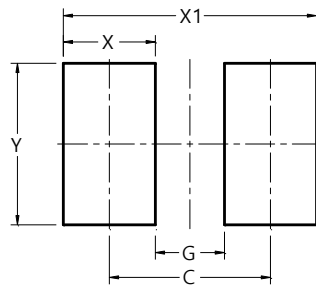


X1-DFN1006-2			
Dim	Min	Max	Typ
A	0.47	0.53	0.50
A1	0.00	0.05	0.03
b	0.45	0.55	0.50
D	0.95	1.075	1.00
E	0.55	0.675	0.60
e	--	--	0.65
L	0.20	0.30	0.25
R	0.05	0.15	0.10
aaa	0.15		
bbb	0.05		
ccc	0.05		
All Dimensions in mm			

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

X1-DFN1006-2



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

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