

Product Summary

V_R (V)	I_O (A)	V_F Max (V) @ +25°C	I_R Max (μA) @ +25°C
100	0.25	0.8	1.0

Applications

- Low voltage rectification
- Blocking diodes
- AC-DC
- DC-DC

Features and Benefits

- Ultra Low-Forward Voltage Drop
- Superior Reverse Avalanche Capability
- Patented Super Barrier Rectifier SBR® 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)**
- **The SBR02U100LPQ is suitable for automotive applications requiring specific change control; this part is AEC-Q101 qualified, PPAP capable, and manufactured in IATF 16949 certified facilities.**

<https://www.diodes.com/quality/product-definitions/>

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 Dot
- Terminals: Finish - NiPdAu over Copper Leadframe. Solderable per MIL-STD-202, Method 208 Ⓔ4
- Weight: 0.001 grams (Approximate)

X1-DFN1006-2



Top View



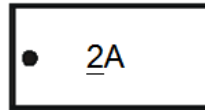
Bottom View

Ordering Information (Note 4)

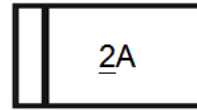
Orderable Part Number	Package	Packing	
		Qty.	Carrier
SBR02U100LPQ-7	X1-DFN1006-2	3,000	Tape & Reel
SBR02U100LPQ-7B	X1-DFN1006-2	10,000	Tape & Reel

- 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

SBR02U100LPQ-7


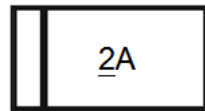
Top View
Dot Denotes
Cathode Side

SBR02U100LPQ-7B


Top View
Bar Denotes
Cathode Side

2A = Product Type Marking Code

OR



Top View
Bar Denotes
Cathode Side

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	I _{FSM}	5	A
Single Half Sine-Wave Superimposed on Rated Load			

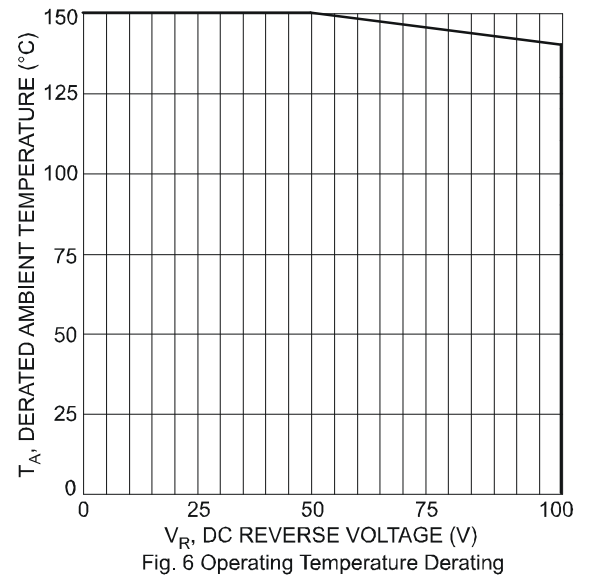
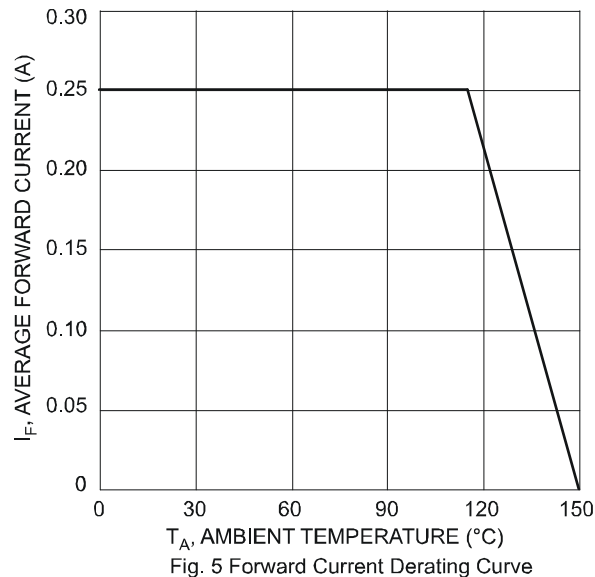
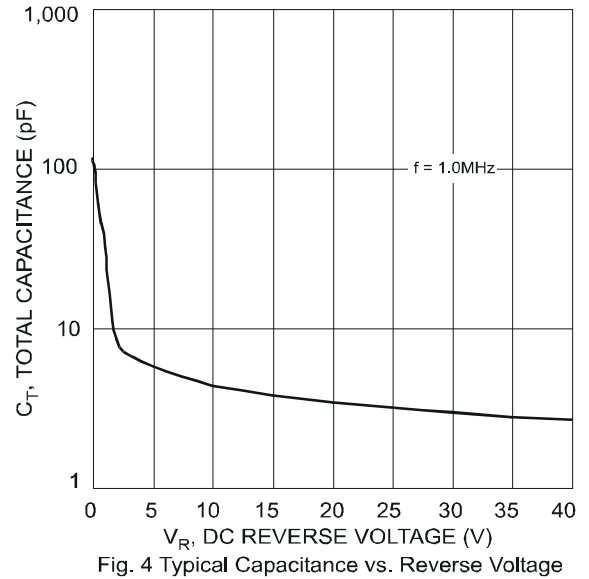
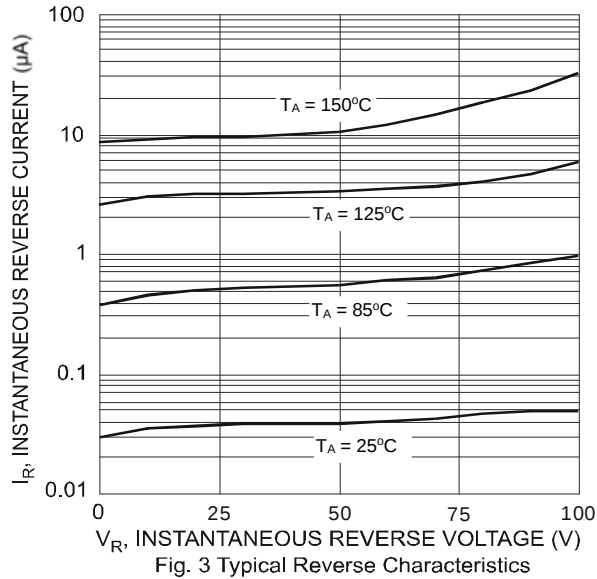
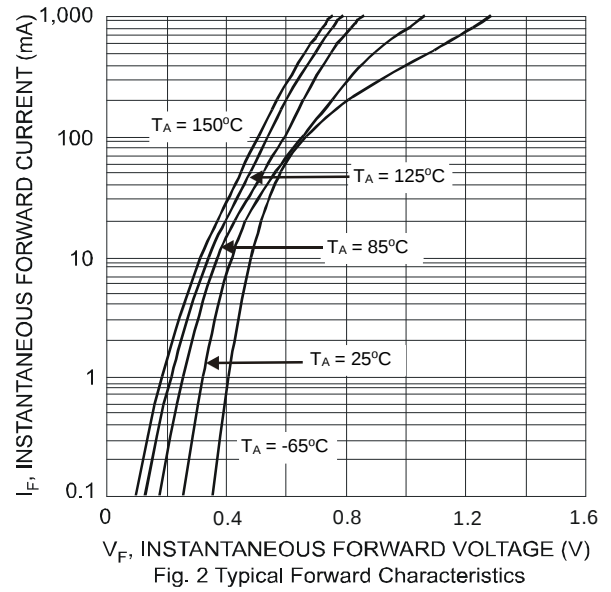
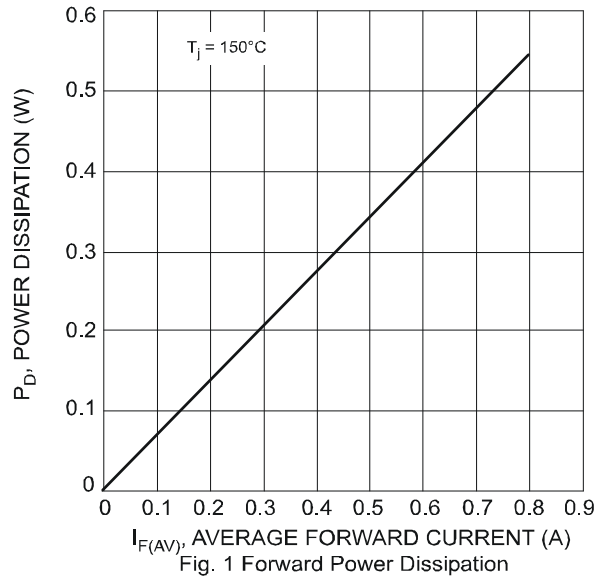
Thermal Characteristics

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance	—	—	—
Thermal Resistance, Junction to Ambient (Note 5) T _A = +25°C	R _{θJA}	270	°C/W
Thermal Resistance, Junction to Ambient (Note 6) T _A = +25°C	R _{θJA}	235	°C/W
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

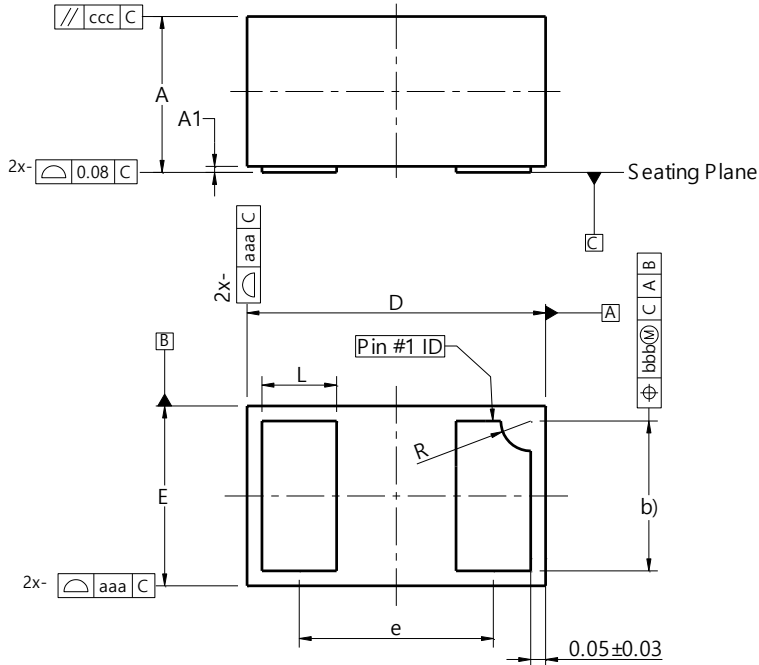
Notes: 5. FR-4 PCB, 2oz. Copper, minimum recommended pad layout per <http://www.diodes.com/package-outlines.html>.
6. Polyimide PCB, 2oz. Copper, minimum recommended pad layout per <http://www.diodes.com/package-outlines.html>.
7. Short duration pulse test used to minimize self-heating effect.



Package Outline Dimensions

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

X1-DFN1006-2

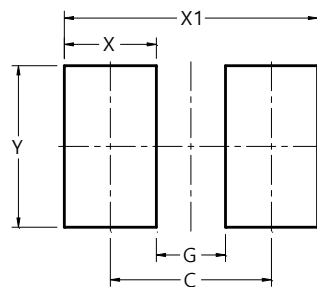


X1-DFN1006-2			
Dim	Min	Max	Typ
A	0.47	0.53	0.50
A1	0.00	0.05	0.03
b	0.45	0.55	0.50
D	0.95	1.075	1.00
E	0.55	0.675	0.60
e	--	--	0.65
L	0.20	0.30	0.25
R	0.05	0.15	0.10
aaa	0.15		
bbb	0.05		
ccc	0.05		
All Dimensions in mm			

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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