SBR07U20LPS

0.7A SBR
SURFACE MOUNT SUPER BARRIER RECTIFIER

Product Summary (@ T_A = +25°C)

V_{RRM} (V)	I_O (mA)	V_F (Max) (V)	I_R (Max) (µA)
20	700	0.55	50

Features and Benefits

- 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)**
- **For automotive applications requiring specific change control (i.e.: parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please refer to the related automotive grade (Q-suffix) part. A listing can be found at https://www.diodes.com/products/automotive/automotive-products/.**
- **This part is qualified to JEDEC standards (as references in AEC-Q) for High Reliability. https://www.diodes.com/quality/product-definitions/**

Applications

- SMPS
- DC-DC converters
- Freewheeling diodes
- Reverse polarity protections

Mechanical Data

- Package: X2-DFN1006-2
- Package 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 208 e4
- Weight: 0.001 grams (Approximate)

X2-DFN1006-2

Bottom View

Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
SBR07U20LPS-7	X2-DFN1006-2	3,000	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

SBR07U20LPS-7	 Bar Denotes Cathode Side	$\underline{7}\,\underline{2}$ & $\overline{\underline{7}}\,\underline{2}$ = Product Type Marking Code 

SBR is a registered trademark of Diodes Incorporated.

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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_{RM}	20	V
RMS Reverse Voltage	$V_{R(RMS)}$	14	V
Average Rectified Output Current	I_O	700	mA
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	7	A

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

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance (Note 5)	$R_{\theta JA}$	224	°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 6)	$V_{(BR)R}$	20	—	—	V	I_R = 50μA
Forward Voltage Drop	V_F	— — — —	0.34 0.46 0.51 0.48	0.38 0.50 0.55 0.51	V	I_F = 0.1A, T_J = +25°C I_F = 0.5A, T_J = +25°C I_F = 0.7A, T_J = +25°C I_F = 0.7A, T_J = +125°C
Leakage Current (Note 6)	I_R	— —	6 1.5	50 5	μA mA	V_R = 20V, T_J = +25°C V_R = 20V, T_J = +150°C

Notes: 5. Device mounted on FR-4 substrate with minimum recommended pad layout, which can be found on our website at http://www.diodes.com/package-outlines.html.
6. Short duration pulse test used to minimize self-heating effect.

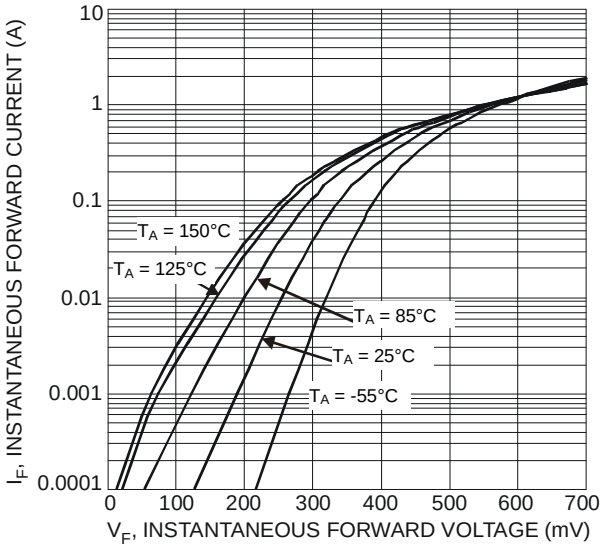


Fig. 1 Typical Forward Characteristics

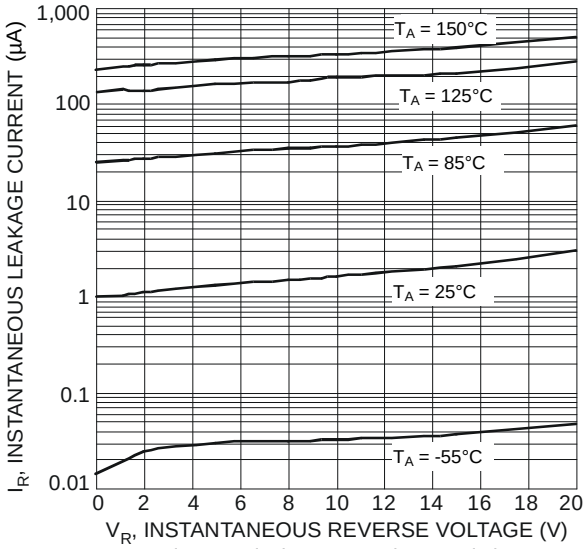
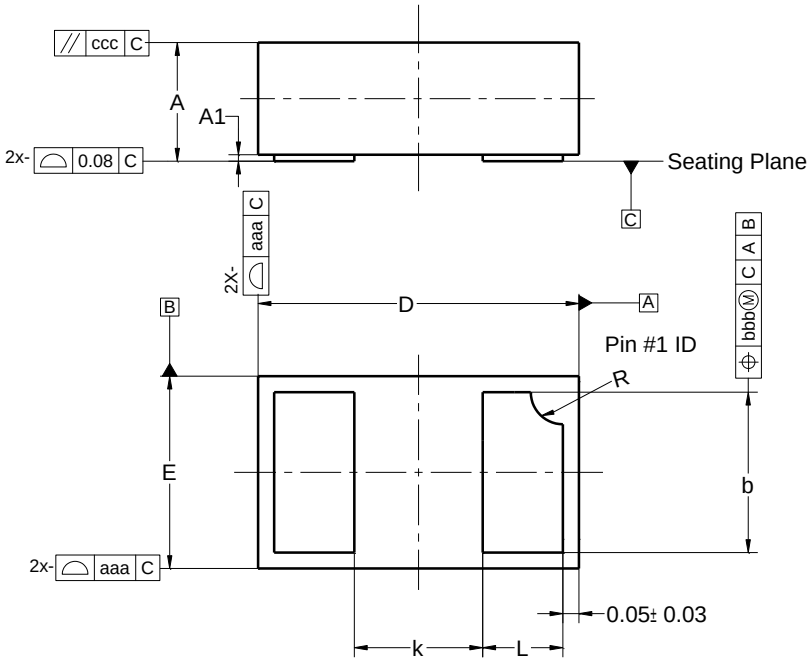


Fig. 2 Typical Reverse Characteristics

Package Outline Dimensions

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

X2-DFN1006-2

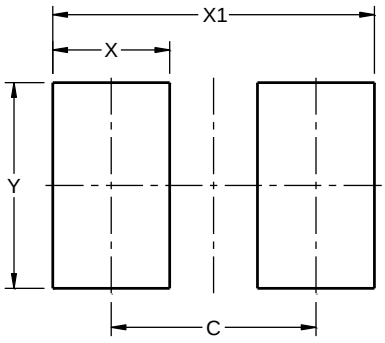


X2-DFN1006-2			
Dim	**Min**	**Max**	**Typ**
A	0.34	0.40	0.37
A1	0.00	0.05	0.03
b	0.45	0.55	0.50
D	0.95	1.075	1.00
E	0.55	0.675	0.60
k	—	—	0.40
L	0.20	0.30	0.25
R	—	—	0.10
aaa	0.15		
bbb	0.05		
ccc	0.05		
All Dimensions in mm			

Suggested Pad Layout

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

X2-DFN1006-2



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

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