Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

SBR2U10LP

2A SBR®

SURFACE MOUNT SUPER BARRIER RECTIFIER

Product Summary (@T_A = +25°C)

V_{RRM} (V)	I_O (A)	$V_{F(MAX)}$(V)	$I_{R(MAX)}$ (mA)
10	2	0.46	2

Features and Benefits

- Small Form factor Package with a PCB Footprint of just 1.54mm^2 - 40% Smaller Than SOT666
- Lower Reverse Leakage Ensuring Greater Stability at Higher Temperatures
- Low Forward Voltage (V_F) Minimises Conduction Losses and Improving Efficiency
- **Totally Lead-Free; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Description and Applications

Packaged in the compact X1-DFN1411-3 package, the SBR2U10LP provides ultra-low forward voltage drop (V_F) and provides excellent low reverse leakage stability at high temperatures. It is ideal for use as a bypass, freewheeling or polarity protection diode in applications such as:

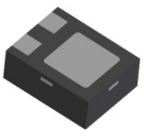
- Solar Panels
- Portable Electronics

Mechanical Data

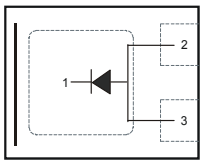
- Case: X1-DFN1411-3
- Case Material: Molded Plastic, "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Bar (See Note 5)
- Terminals: Finish – NiPdAu over Copper Lead Frame.
- Solderable per MIL-STD-202, Method 208 e4
- Weight: 2.35mg (approximate)

X1-DFN1411-3

Top View



Bottom View



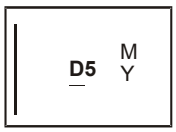
Top View
Internal Schematic

Ordering Information (Note 4)

Part Number	Case	Packaging
SBR2U10LP-7	X1-DFN1411-3	3000/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 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.
5. It is recommended that Pins 2 and 3 be electrically connected at the printed circuit board.

Marking Information



D5 = Product Type Marking Code
Y = Year (ex: B = 2014)
M = Month (ex: 9 = September)

Date Code Key

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022
Code	B	C	D	E	F	G	H	I	J

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Maximum Ratings (@T_A = +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_{RRM} V_{RWM} V_{RM}	10	V
Average Rectified Output Current (See Figure 1)	I_O	2	A
Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	21	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance Junction to Case (Note 6)	$R_{\theta JC}$	55	°C/W
Thermal Resistance Junction to Ambient (Note 6)	$R_{\theta JA}$	210	
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
Forward Voltage Drop (Note 7)	V_F	—	0.40	0.46	V	I_F = 2.0A, T_J = +25°C
Leakage Current (Note 8)	I_R	—	0.5	2	mA	V_R = 10V, T_J = +25°C
		—	25	100	mA	V_R = 10V, T_J = +125°C
Reverse Recovery Time	t_{rr}	—	43	60	ns	I_F =10mA, I_{rr} = 0.1*I_{RM}, R_L= 100Ω
Junction Capacitance	C_j	—	102	—	pF	V_R = 5V, f = 1.0MHz

Notes: 6. Device mounted on FR-4 substrate, 1"*1", 2oz, single-sided, PC boards with 0.1"*0.15" copper pad.
7. It is recommended to electrically connect both Anode pins together during operation to achieve optimal performance.
8. Short duration pulse test used to minimize self-heating effect.

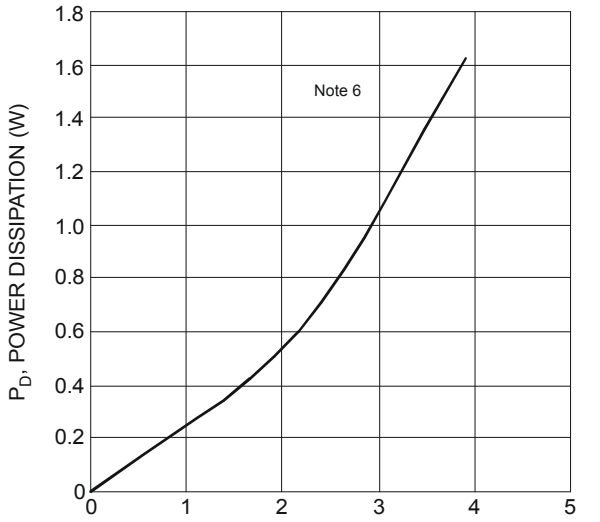


Figure 1 Forward Power Dissipation

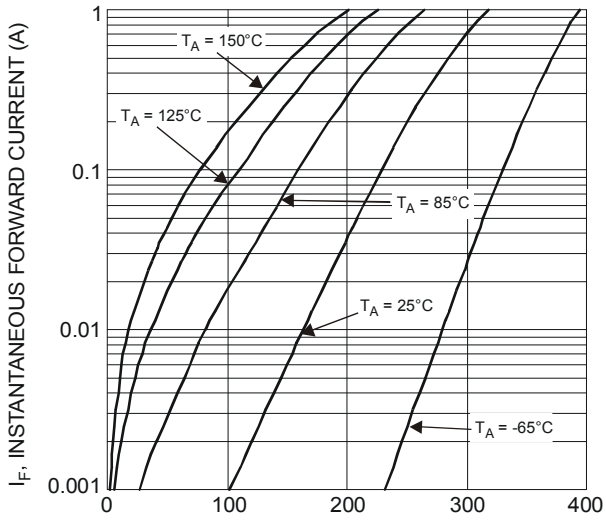


Figure 2 Typical Forward Characteristics

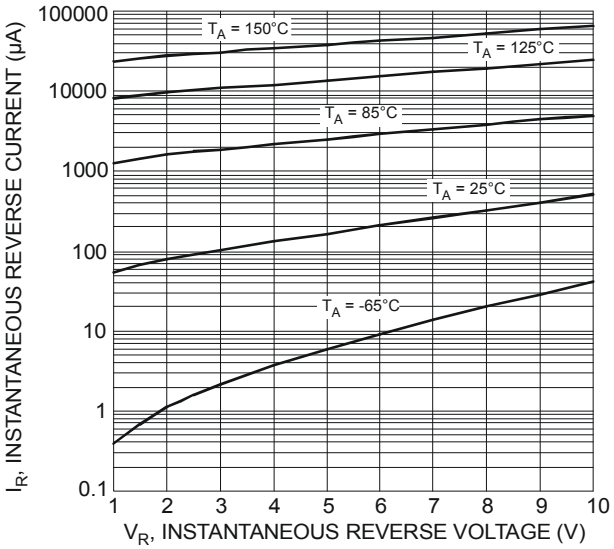


Figure 3 Typical Reverse Characteristics

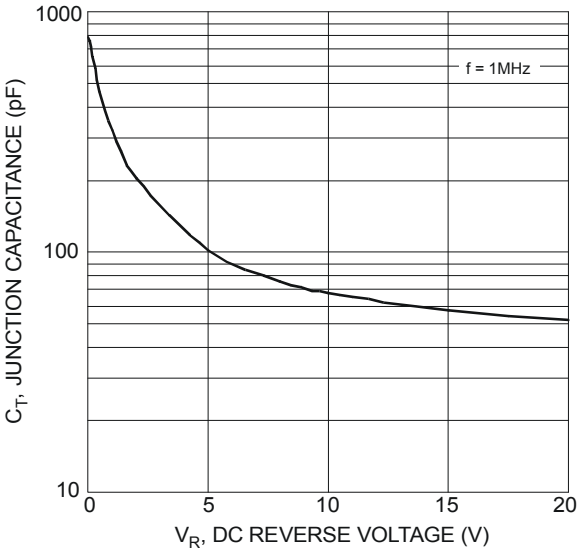


Figure 4 Typical Junction Capacitance

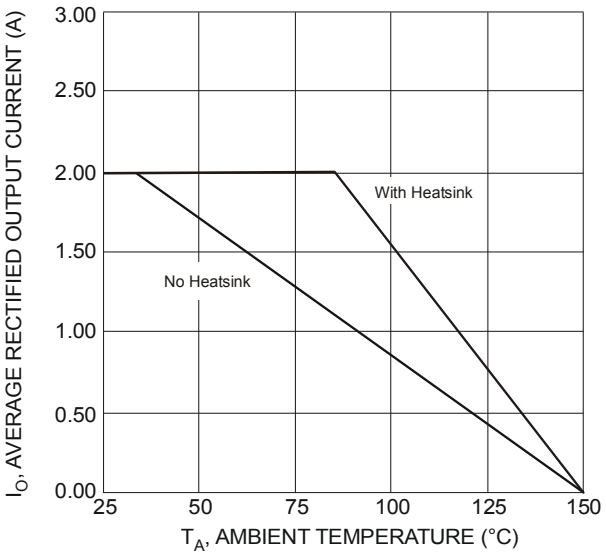


Figure 5 Forward Current Derating Curve

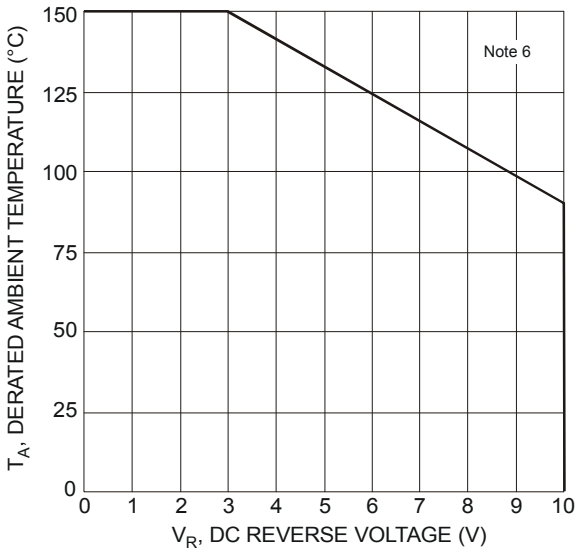
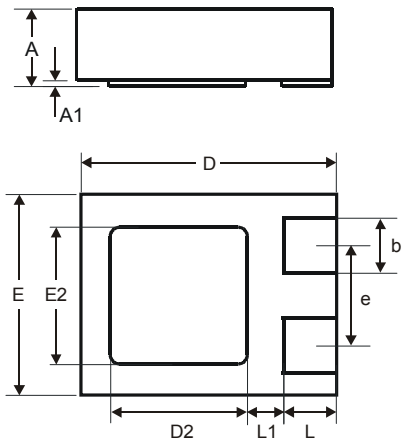


Figure 6 Operating Temperature Derating

Package Outline Dimensions

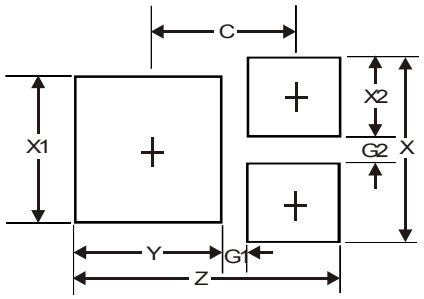
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



X1-DFN1411-3			
Dim	**Min**	**Max**	**Typ**
A	0.47	0.53	0.50
A1	0	0.05	0.02
b	0.25	0.35	0.30
D	1.35	1.475	1.40
D2	0.65	0.85	0.75
E	1.05	1.175	1.10
E2	0.65	0.85	0.75
e	—	—	0.55
L	0.225	0.325	0.275
L1	—	—	0.20
All Dimensions in mm			

Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



Dimensions	Value (in mm)
Z	1.38
G1	0.15
G2	0.15
X	0.95
X1	0.75
X2	0.40
Y	0.75
C	0.76