

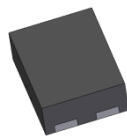
## Features

- Ultra Low Forward Voltage Drop
- Excellent High Temperature Stability
- 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)**

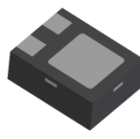
## Mechanical Data

- 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: See Diagram
- Terminals: Finish - Matte Tin Annealed over Copper Leadframe; Solderable per MIL-STD-202, Method 208@3
- Weight: 2.35 grams (Approximate)

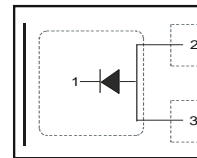
X1-DFN1411-3



Top View



Bottom



Top View  
Internal Schematic

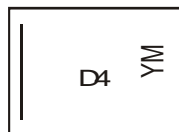
## Ordering Information (Note 4)

Part Number	Case	Packaging
SBR140LP-7	X1-DFN1411-3	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

X1-DFN1411-3



D4, D4= Product Type Marking Code  
YM = Date Code Marking  
Y = Year ex: C = 2015  
M = Month (ex: 9 = September)

### Date Code Key

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Code	V	W	X	Y	Z	A	B	C	D	E	F

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 (@ $T_A = +25^\circ\text{C}$ , 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	$V_{RRM}$	40	V
Working Peak Reverse Voltage	$V_{RWM}$		
DC Blocking Voltage	$V_{RM}$		
RMS Reverse Voltage	$V_{R(RMS)}$	28	V
Average Rectified Output Current (See Figure 1)	$I_O$	1.0	A
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
Thermal Resistance Junction to Ambient (Note 6)	$R_{\theta JA}$	300	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +150	$^\circ\text{C}$

### Electrical Characteristics (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	$V_{(BR)R}$	40	—	—	V	$I_R = 100\mu\text{A}$
Forward Voltage Drop	$V_F$	—	0.47	0.55	V	$I_F = 1.0\text{A}, T_J = +25^\circ\text{C}$ $I_F = 1.0\text{A}, T_J = +125^\circ\text{C}$
Leakage Current (Note 7)	$I_R$	—	—	0.5	mA	$V_R = 40\text{V}, T_J = +25^\circ\text{C}$ $V_R = 40\text{V}, T_J = +125^\circ\text{C}$

Notes: 6. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.  
7. Short duration pulse test used to minimize self-heating effect.

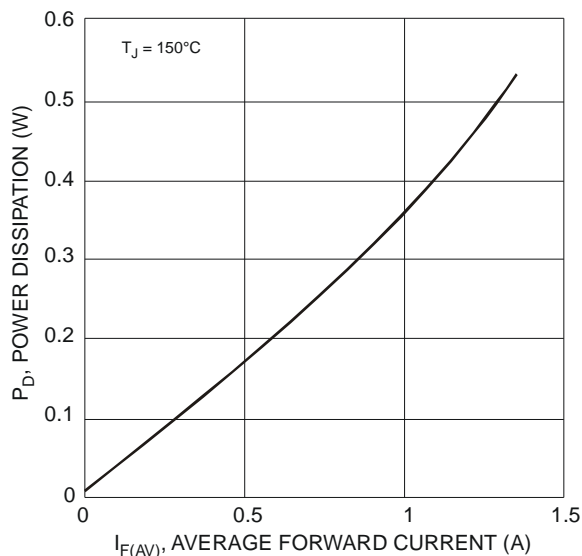


Figure 1 Forward Power Dissipation

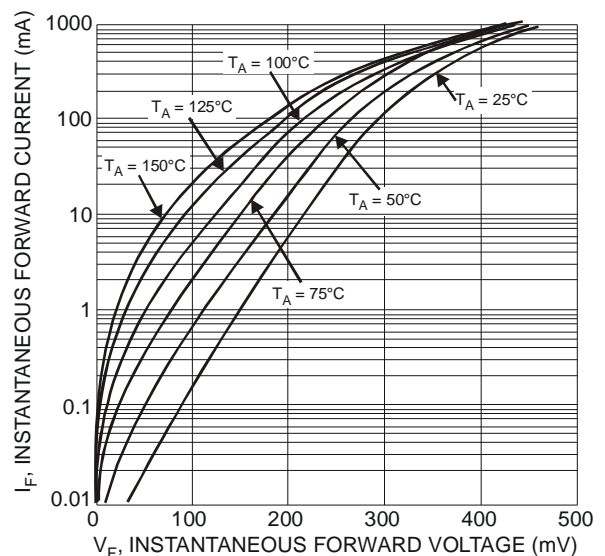


Figure 2 Typical Forward Characteristics

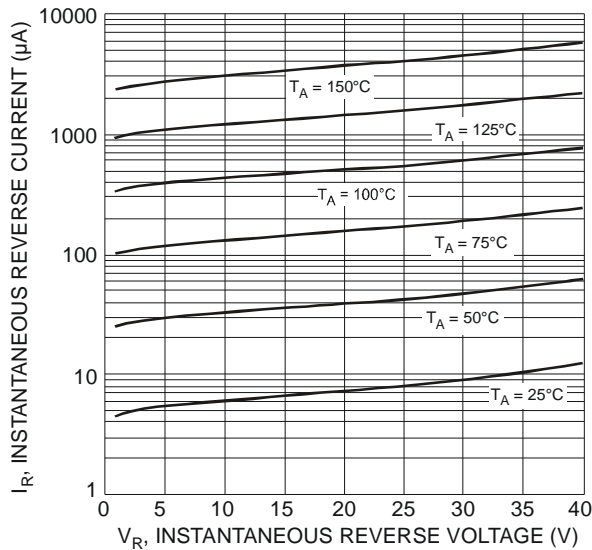


Figure 3 Typical Reverse Characteristics

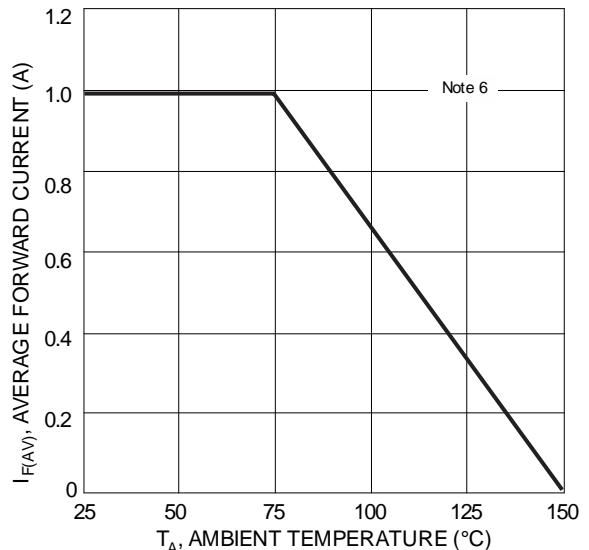
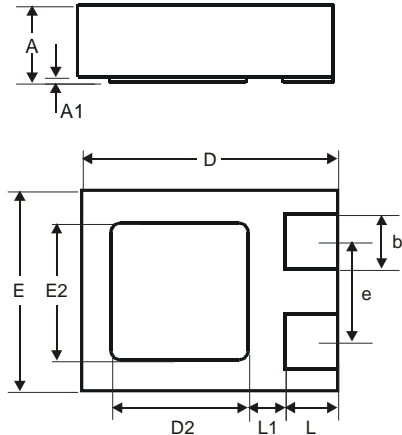


Figure 4 Forward Current Derating Curve

## Package Outline Dimensions

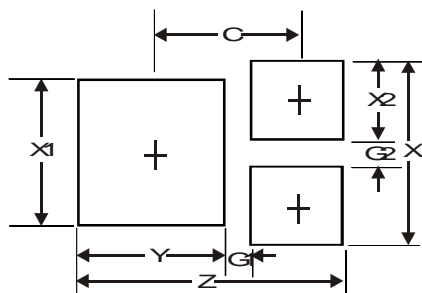
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



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
<b>All Dimensions in mm</b>			

## 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

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