

## Product Summary

$V_{RRM}$ (V)	$I_o$ (A)	$V_{F(MAX)}$ (V) @ +25°C	$I_{R(MAX)}$ (mA) @ +25°C
15	2	0.48	0.1

## Features and Benefits

- Patented TrenchSBR technology provides superior avalanche capability versus Schottky diodes, ensuring more rugged and reliable end applications.  
Reduced ultra-low forward voltage drop ( $V_F$ ).
- Better efficiency and cooler operation.  
Reduced high temperature reverse leakage.
- Increased reliability against thermal runaway failure in high temperature operation.
- 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-Q100/101/200, 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/>

## Description and Applications

The SBRT2U15LP provides very low  $V_F$  and excellent reverse leakage stability at high temperatures. It is ideal for use as bypass diode and rectifier, freewheel diode, or blocking diode in applications such as:

- Solar Panels
- Blocking Diodes
- Bypass Diodes
- Boost Diodes
- Recirculating Diode

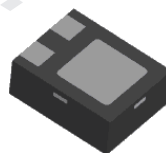
## Mechanical Data

- 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
- Terminals: Finish - Matte Tin Annealed over Copper Lead-Frame. Solderable per MIL-STD-202, Method 208③
- Polarity: See Below
- Weight: 2.35 mg (Approximate)

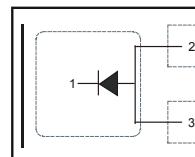
X1-DFN1411-3



Top View



Bottom View



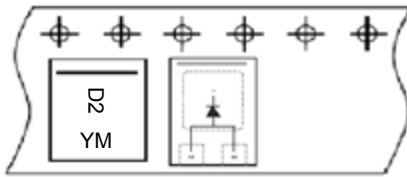
Top View  
Internal Schematic

## Ordering Information (Note 4)

Part Number	Case	Packaging
SBRT2U15LP-7	X1-DFN1411-3	3,000/Tape & Reel

- Notes:
- No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
  - 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.
  - Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  - For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

## Marking Information



D2 = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: B = 2014)  
 M = Month (ex: 6 = June)  
 Bar = Cathode

### 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<sub>A</sub> = +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	V <sub>RRM</sub>	15	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
Average Rectified Output Current	I <sub>O</sub>	2	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	25	A

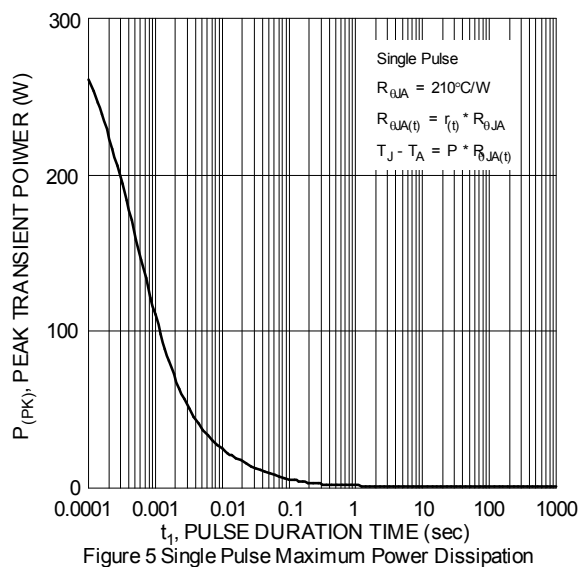
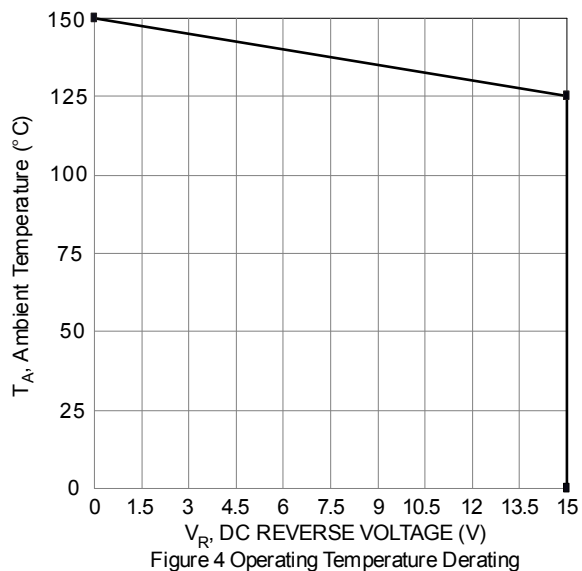
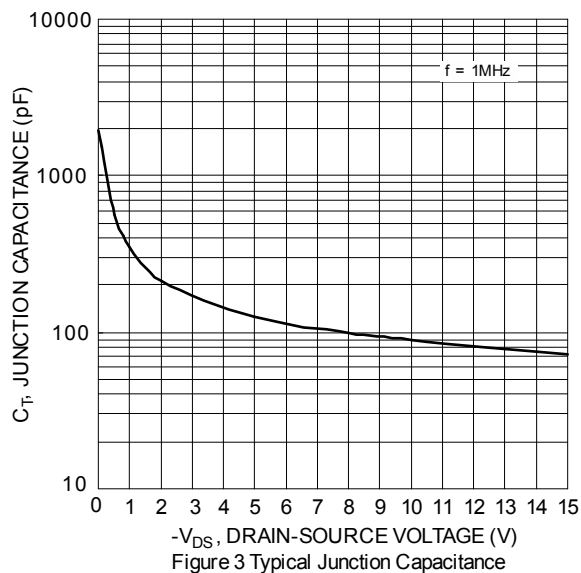
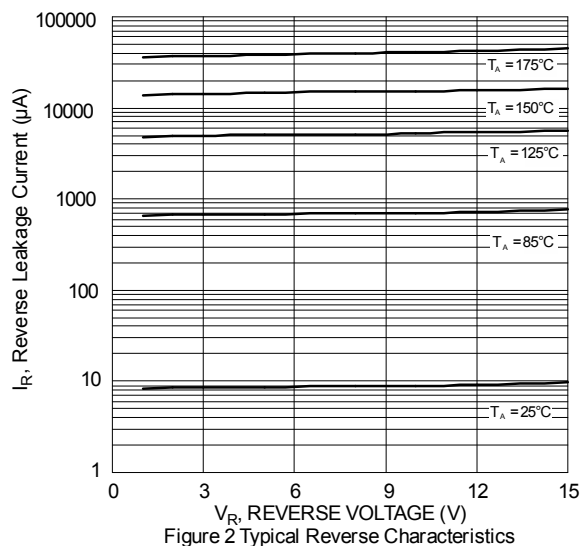
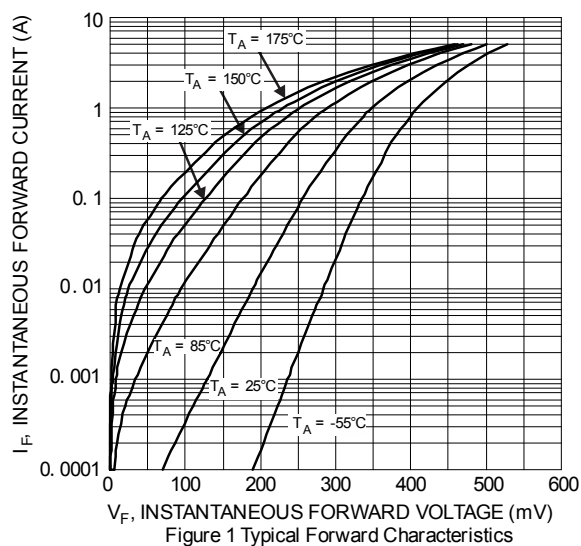
## Thermal Characteristics

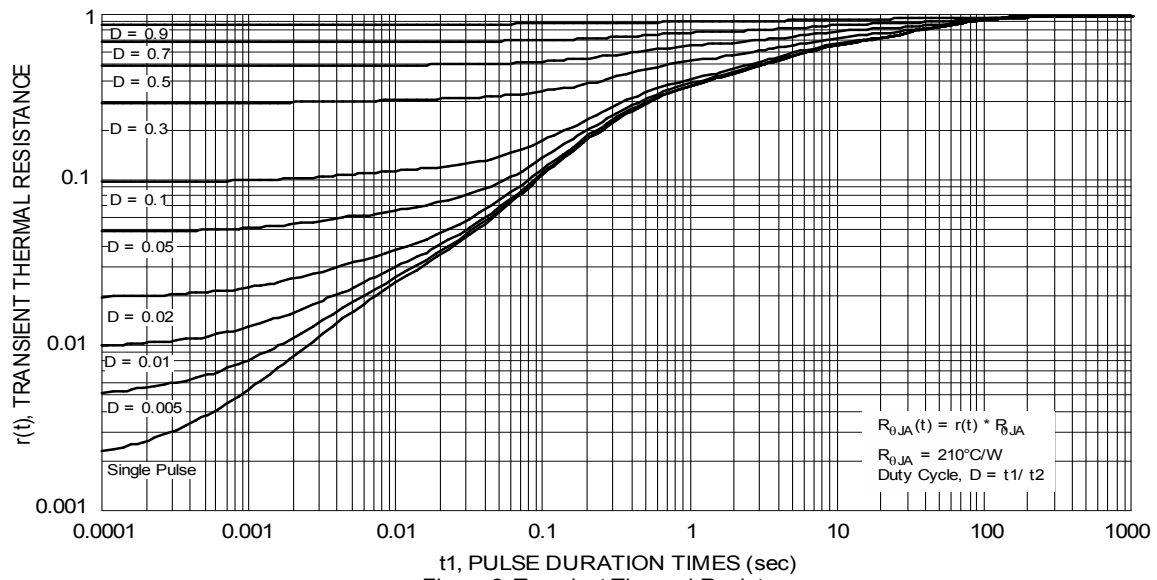
Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Note 5)	R <sub>θJC</sub>	25	°C/W
Typical Thermal Resistance Junction to Ambient (Note 5)	R <sub>θJA</sub>	100	°C/W
Operating Temperature Range V <sub>R</sub> ≤ 80% V <sub>RRM</sub> V <sub>R</sub> ≤ 50% V <sub>RRM</sub> DC Forward Mode (Note 7)	T <sub>J</sub>	-55 to +150 ≤ +175 ≤ +200	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150	°C

## Electrical Characteristics (@ T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop (Note 6)	V <sub>F</sub>	—	—	0.48	V	I <sub>F</sub> = 2A, T <sub>J</sub> = +25°C
Leakage Current (Note 6)	I <sub>R</sub>	—	—	100	μA	V <sub>R</sub> = 15V, T <sub>J</sub> = +25°C
		—	5.7	—	mA	V <sub>R</sub> = 15V, T <sub>J</sub> = +125°C

Notes: 5. Device mounted on FR-4 PCB pad layout 1-inch 2oz copper.  
 6. Short duration pulse test used to minimize self-heating effect.  
 7. Max junction temperature guaranteed for two hours.

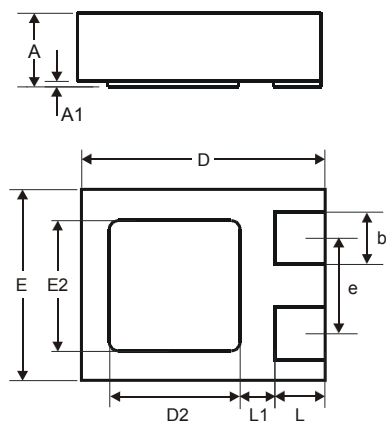




## Package Outline Dimensions

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

**X1-DFN1411-3**

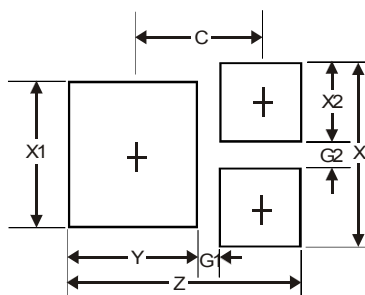


X1-DFN1411-3			
Dim	Min	Max	Typ
A	0.47	0.53	0.50
A1	0	0.05	0.02
b	0.25	0.35	0.30
D	1.35	1.475	1.40
D2	0.65	0.85	0.75
E	1.05	1.175	1.10
E2	0.65	0.85	0.75
e	-	-	0.55
L	0.225	0.325	0.275
L1	-	-	0.20
All Dimensions in mm			

## Suggested Pad Layout

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

**X1-DFN1411-3**



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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