

## Product Summary

$V_{RRM}$ (V)	$I_o$ (A)	$V_F(\text{MAX})$ (V) @ +25°C	$I_R(\text{MAX})$ (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/>

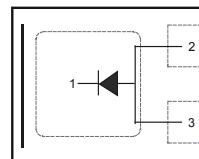
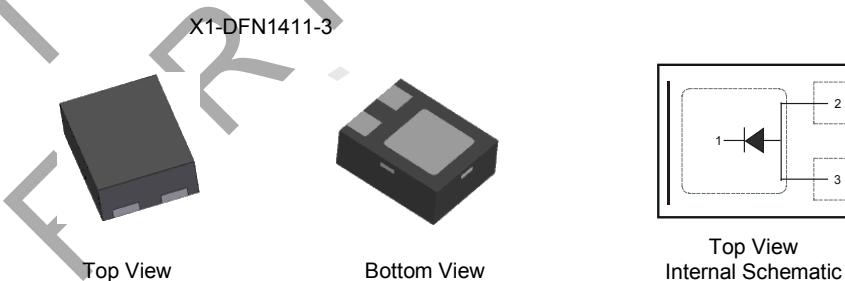
## Description and Applications

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)



Top View  
Internal Schematic

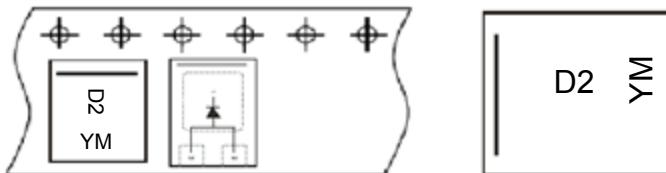
## Ordering Information (Note 4)

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 (@ $T_A = +25^\circ\text{C}$ , 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	$V_{RRM}$		
Working Peak Reverse Voltage	$V_{RWM}$	15	V
DC Blocking Voltage	$V_{RM}$		
Average Rectified Output Current	$I_O$	2	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	$I_{FSM}$	25	A

## Thermal Characteristics

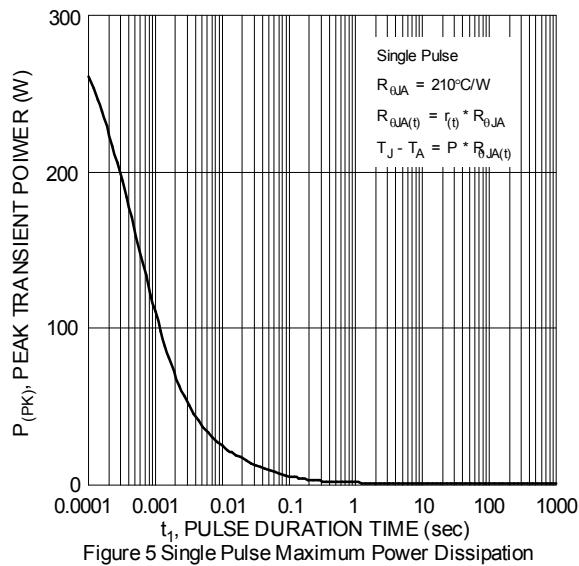
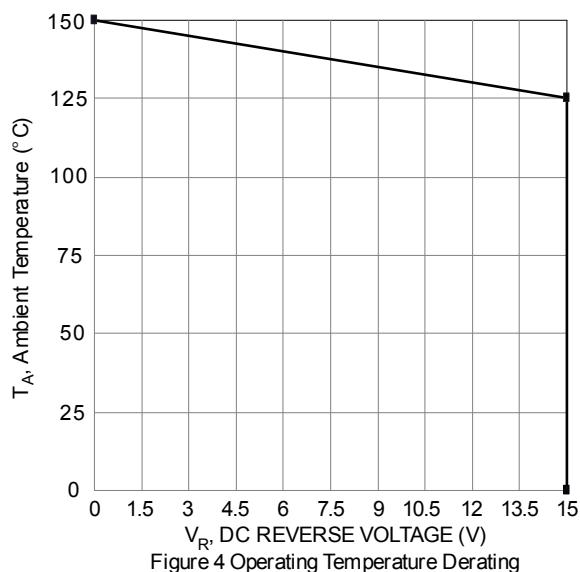
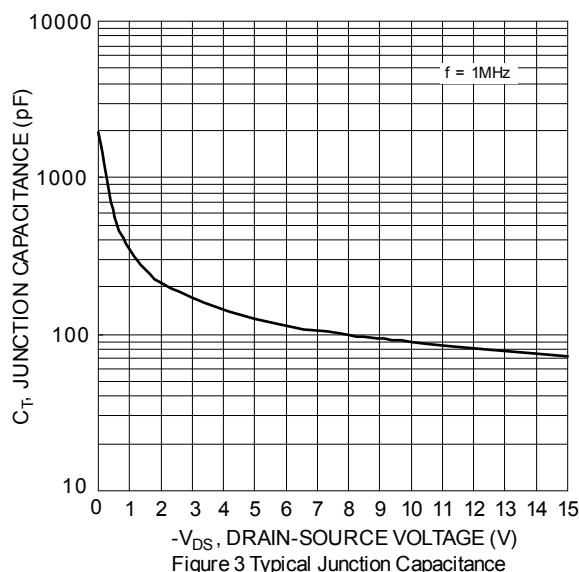
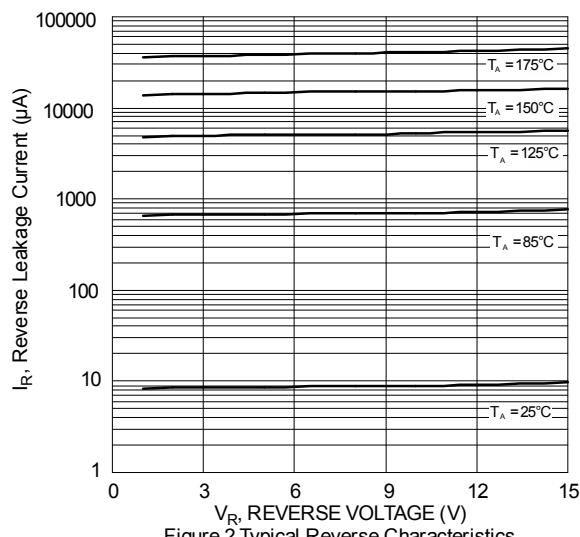
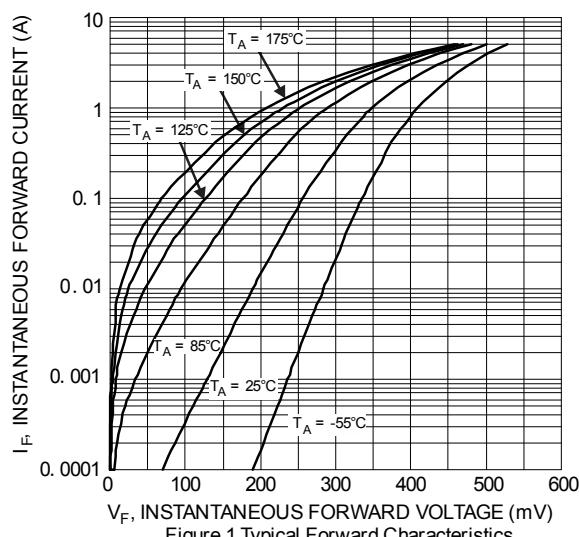
Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Note 5)	$R_{\theta JC}$	25	$^\circ\text{C}/\text{W}$
Typical Thermal Resistance Junction to Ambient (Note 5)	$R_{\theta JA}$	100	$^\circ\text{C}/\text{W}$
Operating Temperature Range $V_R \leq 80\% V_{RRM}$ $V_R \leq 50\% V_{RRM}$ DC Forward Mode (Note 7)	$T_J$	-55 to +150 $\leq +175$ $\leq +200$	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +150	$^\circ\text{C}$

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop (Note 6)	$V_F$	—	—	0.48	V	$I_F = 2\text{A}$ , $T_J = +25^\circ\text{C}$
Leakage Current (Note 6)	$I_R$	—	—	100	$\mu\text{A}$	$V_R = 15\text{V}$ , $T_J = +25^\circ\text{C}$
		—	5.7	—	mA	$V_R = 15\text{V}$ , $T_J = +125^\circ\text{C}$

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.



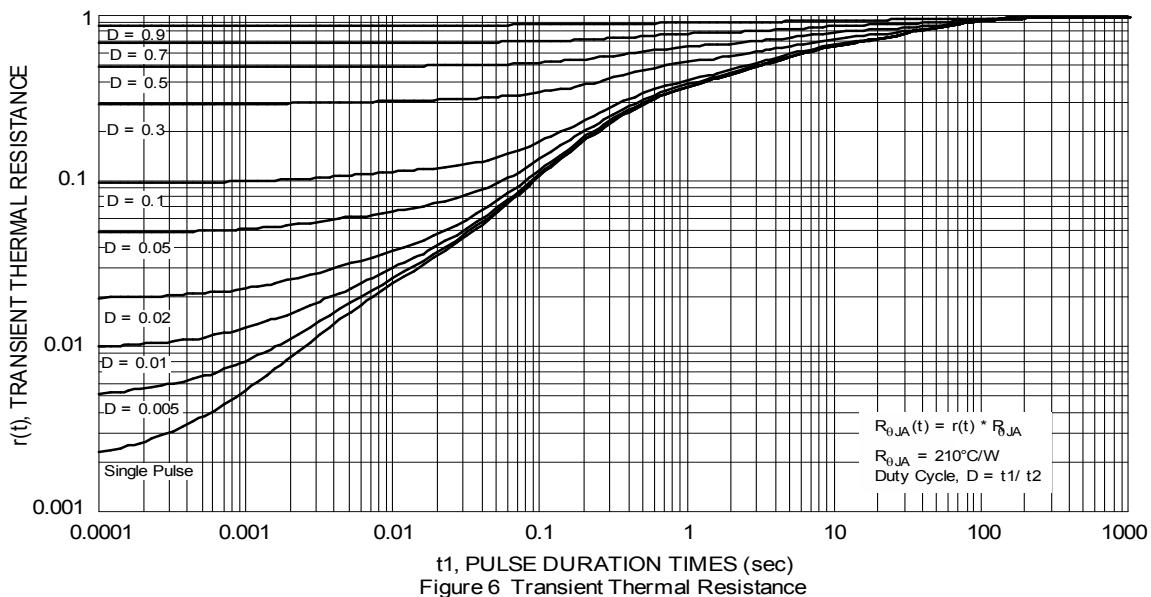
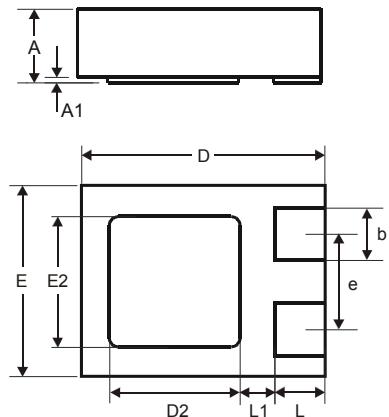


Figure 6 Transient Thermal Resistance

## Package Outline Dimensions

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

**X1-DFN1411-3**



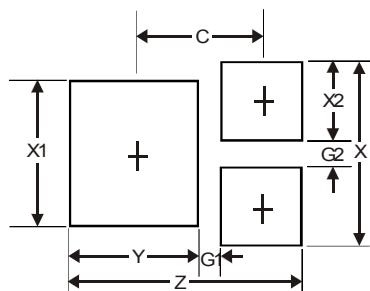
X1-DFN1411-3			
Dim	Min	Max	Typ
<b>A</b>	0.47	0.53	0.50
<b>A1</b>	0	0.05	0.02
<b>b</b>	0.25	0.35	0.30
<b>D</b>	1.35	1.475	1.40
<b>D2</b>	0.65	0.85	0.75
<b>E</b>	1.05	1.175	1.10
<b>E2</b>	0.65	0.85	0.75
<b>e</b>	-	-	0.55
<b>L</b>	0.225	0.325	0.275
<b>L1</b>	-	-	0.20

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)
<b>Z</b>	1.38
<b>G1</b>	0.15
<b>G2</b>	0.15
<b>X</b>	0.95
<b>X1</b>	0.75
<b>X2</b>	0.40
<b>Y</b>	0.75
<b>C</b>	0.76

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