

**2A TrenchSBR
TRENCH SUPER BARRIER RECTIFIER**
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

Description and Applications

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

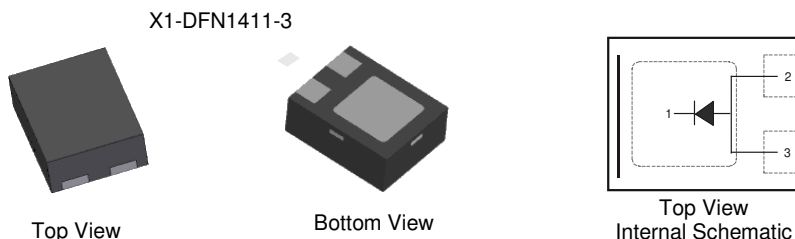
- Solar Panels
- Blocking Diodes
- Bypass Diodes
- Boost Diodes
- Recirculating Diode

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)**
- **Qualified to AEC-Q101 Standards for High Reliability**

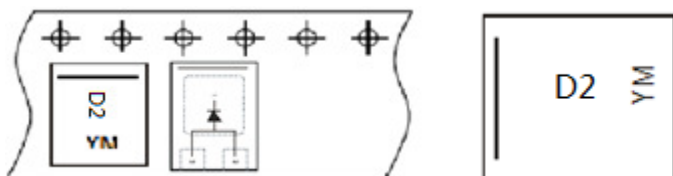
Mechanical Data

- 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 Leadframe.
Solderable per MIL-STD-202, Method 208 Ⓔ
- Polarity: See Below
- Weight: 2.35 mg (Approximate)


Ordering Information (Note 4)

Part Number	Case	Packaging
SBRT2U15LP-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 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


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°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}	15	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _{RM}		
Average Rectified Output Current	I _O	2	A
Non-Repetitive Peak Forward Surge Current 8.3ms	I _{FSM}	25	A
Single Half Sine-Wave Superimposed on Rated Load			

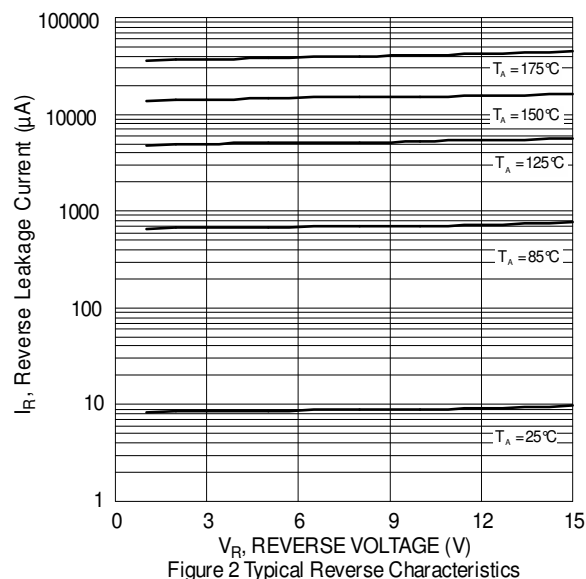
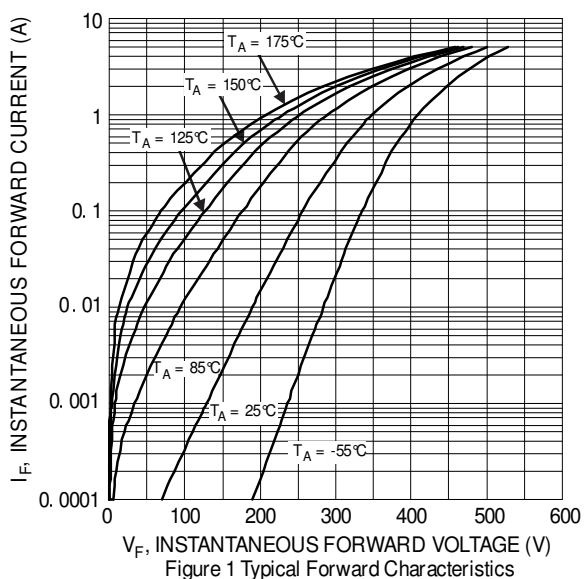
Thermal Characteristics

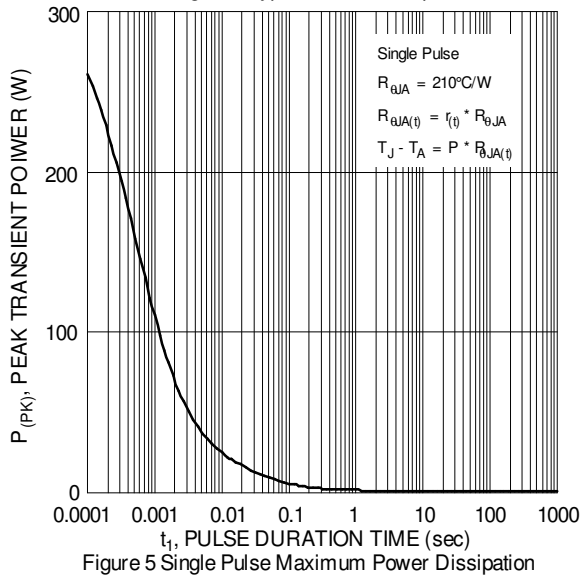
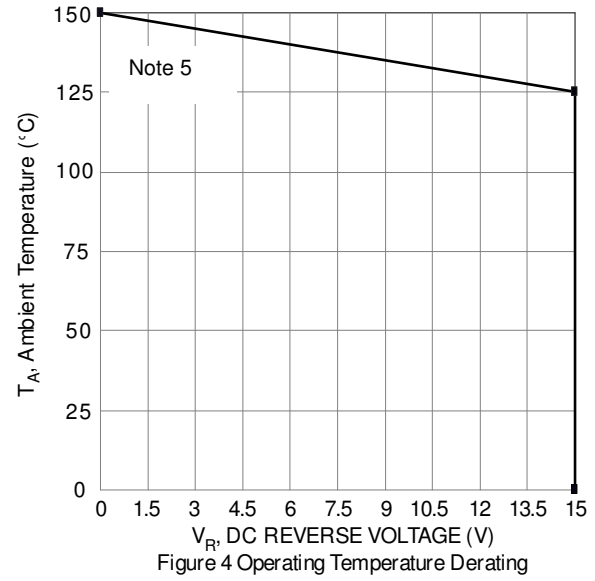
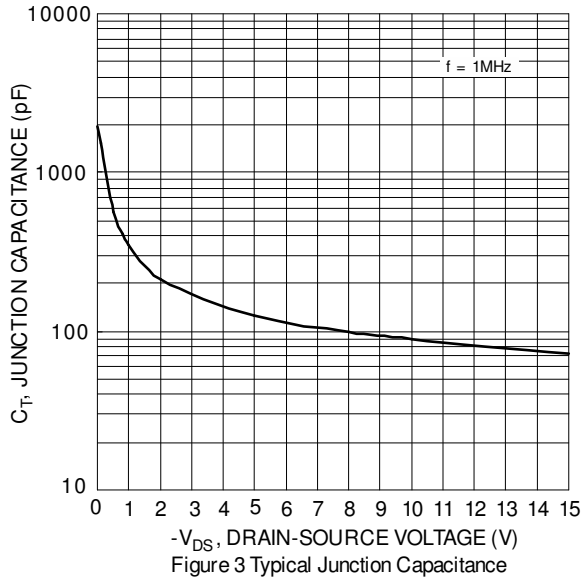
Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Note 5)	R _{θJC}	25	°C/W
Typical Thermal Resistance Junction to Ambient (Note 5)	R _{θJA}	100	°C/W
Operating Temperature Range V _R ≤ 80% V _{RRM} V _R ≤ 50% V _{RRM} DC Forward Mode (Note 7)	T _J	-55 to +150 ≤ +175 ≤ +200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

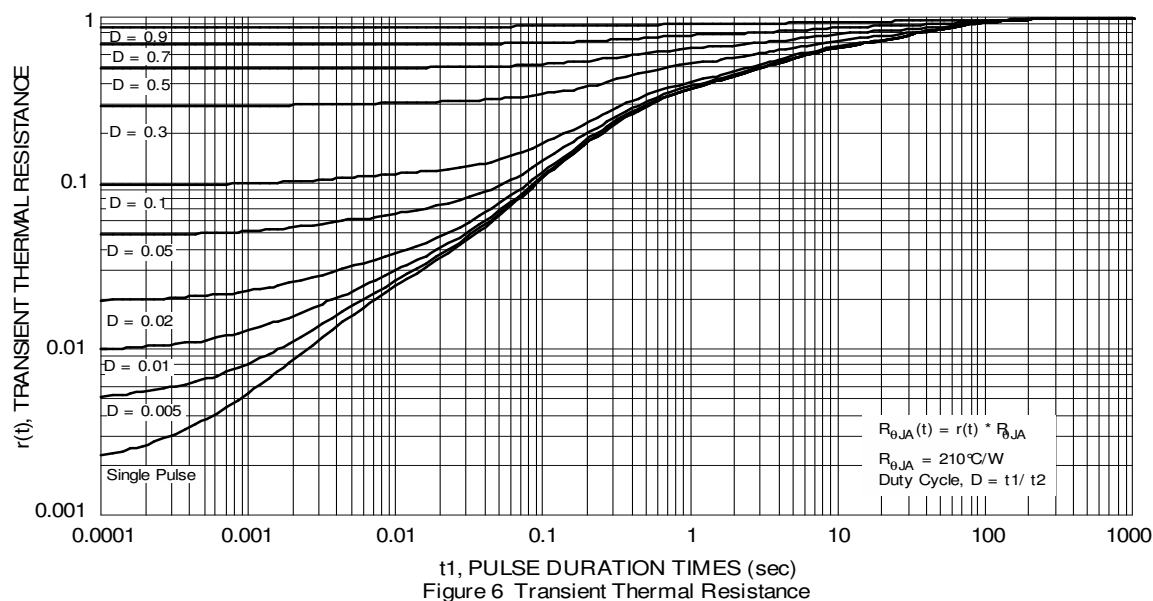
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop (Note 6)	V _F	—	—	0.48	V	I _F = 2A, T _J = +25°C
Leakage Current (Note 6)	I _R	—	—	100	μA	V _R = 15V, T _J = +25°C
		—	5.7	—	mA	V _R = 15V, T _J = +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.

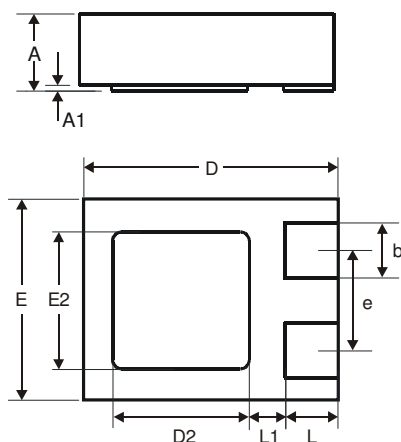






Package Outline Dimensions

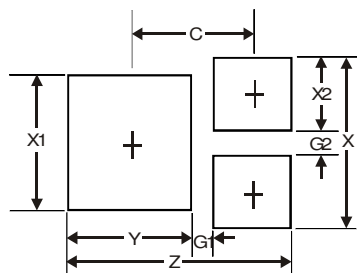
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



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
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

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