

## Features

$V_{RRM}$ (V)	$I_O$ (A)	$V_{F\ MAX}$ (V)	$I_{R\ MAX}$ ( $\mu$ A)
150	3	0.91	10

## Description and Applications

The SBR3U150LP is a single rectifier in the low-profile U-DFN3030-8 package. Offering excellent high-temperature stability and low forward voltage, this device is ideal for use in general rectification applications such as:

- Boost Diode
- Blocking Diode
- Recirculating Diode

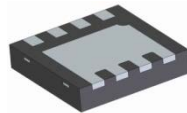
## Features

- Ultra-Low Forward Voltage Drop
- Superior Reverse Avalanche Capability
- Patented Super Barrier Rectifier SBR<sup>®</sup> Technology
- Soft, Fast Switching Capability
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

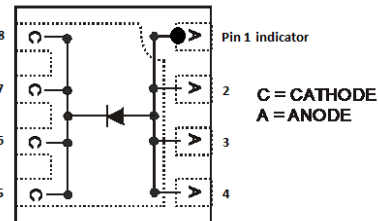
## Mechanical Data

- Case: U-DFN3030-8
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish—NiPdAu Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 <sup>(e4)</sup>
- Weight: 0.0172 grams (Approximate)

U-DFN3030-8



Bottom View



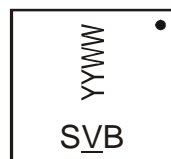
Top View  
Schematic and Pin Configuration

## Ordering Information (Note 4)

Part Number	Case	Packaging
SBR3U150LP-7	U-DFN3030-8	3000/Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
  2. 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.
  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, see <http://www.diodes.com/products/packages.html>.

## Marking Information



S\_VB = Product Marking Code  
 YYWW = Date Code Marking  
 YY = Last Two Digits of Year (ex: 18 for 2018)  
 WW = Week Code (01 to 53)

**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>	150	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
RMS Reverse Voltage	V <sub>R(RMS)</sub>	106	V
Average Rectified Output Current	I <sub>O</sub>	3.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	33	A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance	R <sub>θJA</sub>	60	°C/W
Thermal Resistance Junction to Ambient (Note 5) @ T <sub>A</sub> = +25°C			
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	V <sub>(BR)R</sub>	150	—	—	V	I <sub>R</sub> = 2mA
Forward Voltage	V <sub>F</sub>	—	—	0.91	V	I <sub>F</sub> = 3.0A, T <sub>J</sub> = +25°C
Leakage Current (Note 6)	I <sub>R</sub>	—	—	10	μA	V <sub>R</sub> = 150V, T <sub>J</sub> = +25°C

Notes: 5. Device mounted on 2oz. Copper, 75mm<sup>2</sup> pad area, double-side PCB.  
6. Short duration pulse test used to minimize self-heating effect.

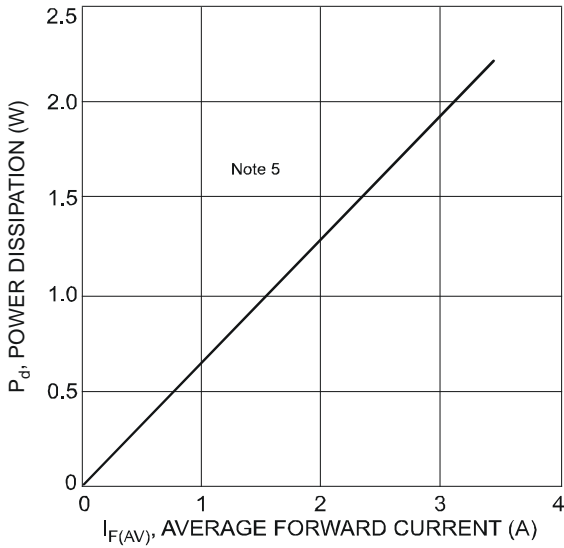


Fig. 1 Forward Power Dissipation

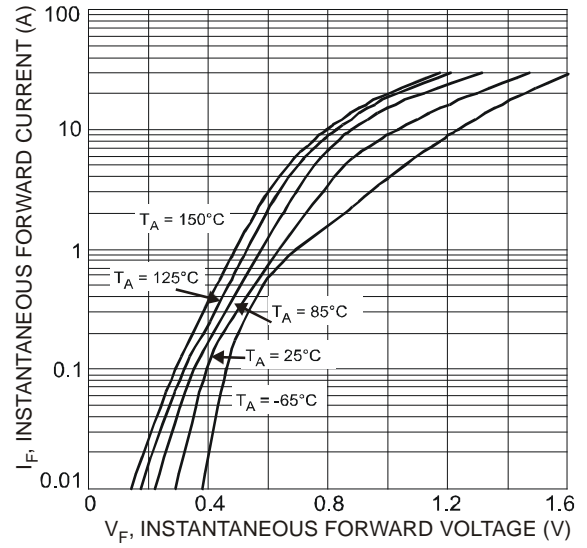


Fig. 2 Typical Forward Characteristics

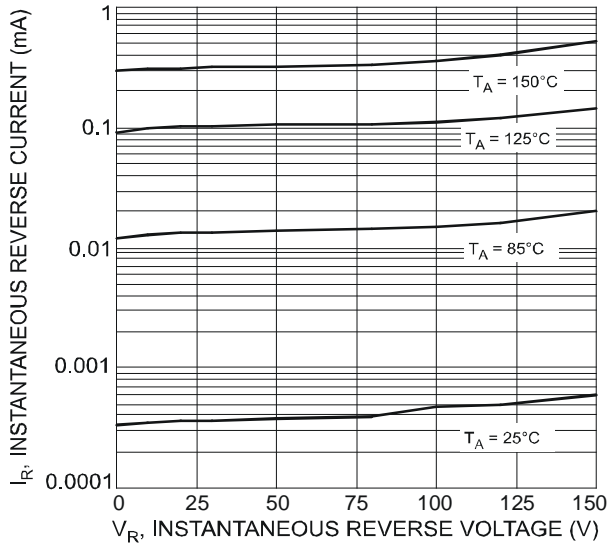


Fig. 3 Typical Reverse Characteristics

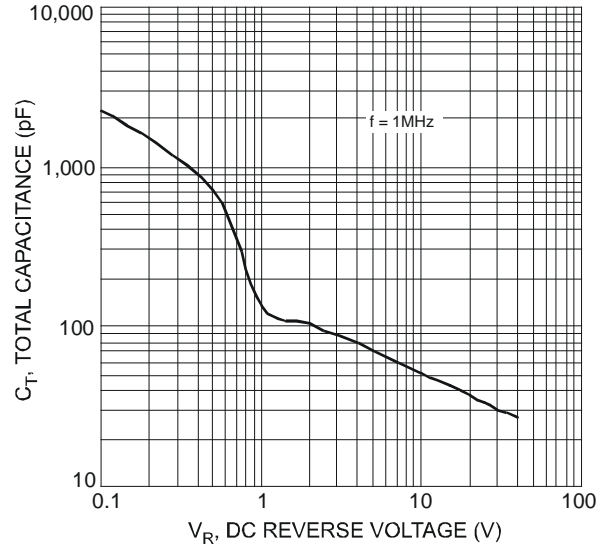


Fig. 4 Total Capacitance vs. Reverse Voltage

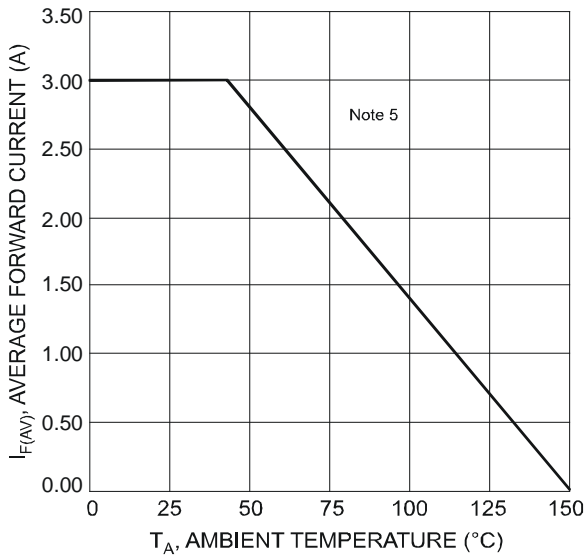


Fig. 5 Forward Current Derating Curve

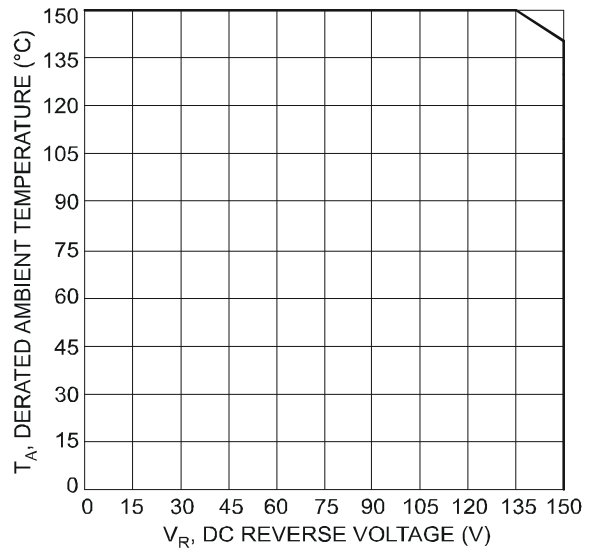
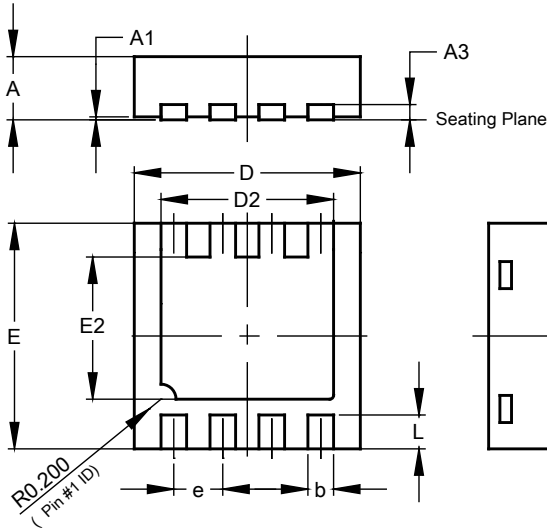


Fig. 6 Operating Temperature Derating

## Package Outline Dimensions

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

### U-DFN3030-8

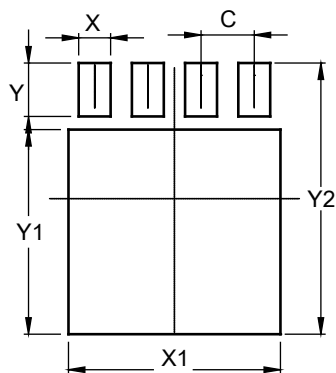


U-DFN3030-8			
Dim	Min	Max	Typ
A	0.57	0.63	0.60
A1	0	0.05	0.02
A3	-	-	0.15
b	0.29	0.39	0.34
D	2.90	3.10	3.00
D2	2.19	2.39	2.29
e	-	-	0.65
E	2.90	3.10	3.00
E2	1.64	1.84	1.74
L	0.30	0.60	0.45
All Dimensions in mm			

## Suggested Pad Layout

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

### U-DFN3030-8



Dimensions	Value (in mm)
C	0.650
X	0.390
X1	2.590
Y	0.650
Y1	2.490
Y2	3.300

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