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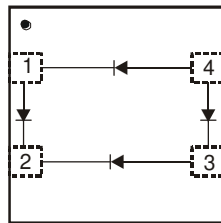


## Product Summary

$V_{RRM}$ (V)	$I_o$ (A)	$V_{F\ MAX}$ (V)	$I_{R\ MAX}$ ( $\mu$ A)
100	0.5	0.73	25

## Description and Applications

The SBR05M100BLP has four diodes in full bridge configuration packaged in the low profile DFN package. Offering low forward voltage drop and excellent high temperature stability, this device is ideal for use as Bridge Diodes where small footprint and low profile is desired.

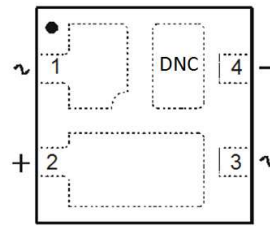


## Features

- Low Forward Voltage Drop ( $V_F$ ) and Low Reverse Leakage ( $I_R$ )
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier SBR<sup>®</sup> Technology
- Low Profile Package with Excellent Thermal Dissipation
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

## Mechanical Data

- Case: U-DFN3030-4
- Case Material: Molded Plastic "Green" Molding Compound, UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – NiPdAu Over Copper Lead Frame, Solderable per MIL-STD-202, Method 208 (e4)
- Polarity: See Diagram
- Weight: 0.02 grams (Approximate)



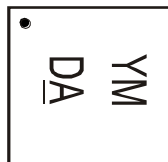
Top View  
Pin Configuration  
\*\*Do Not Connect the DNC Pad\*\*

## Ordering Information (Note 4)

Part Number	Case	Packaging
SBR05M100BLP-7	U-DFN3030-4	3000/Tape & Reel

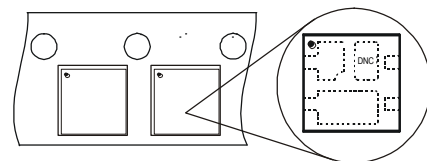
- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "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



DA = Product Type Marking Code  
YM = Date Code Marking  
Y = Year (ex: D = 2016)  
M = Month (ex: 9 = September)

U-DFN3030-4



### Date Code Key

Year Code	2015	2016	2017	2018	2019	2020	2021
	C	D	E	F	G	H	I

Month Code	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	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 capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	100	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
RMS Reverse Voltage	V <sub>R(RMS)</sub>	70	V
Average Rectified Output Current	I <sub>O</sub>	500	mA
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (Per Diode)	I <sub>FSM</sub>	8	A

**Thermal Characteristics**

Characteristic	Symbol	Typ	Max	Unit
Power Dissipation (Note 5)	P <sub>D</sub>	-	0.56	W
Thermal Resistance Junction to Ambient Air (Note 5)	R <sub>θJA</sub>	-	222	°C/W
Thermal Resistance Junction to Ambient Air (Note 6)	R <sub>θJA</sub>	-	149	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , 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
Reverse Breakdown Voltage	V <sub>(BR)R</sub>	100	-	-	V	I <sub>R</sub> = 250μA
Forward Voltage (Per Diode)	V <sub>F</sub>	-	0.54	0.60	V	I <sub>F</sub> = 0.25A, T <sub>J</sub> = +25°C
			0.67	0.73		I <sub>F</sub> = 0.5A, T <sub>J</sub> = +25°C
			0.56	0.63		I <sub>F</sub> = 0.5A, T <sub>J</sub> = +125°C
Reverse Current (Note 7) (Per Diode)	I <sub>R</sub>	-	0.3	25	μA	V <sub>R</sub> = 100V, T <sub>J</sub> = +25°C
			32	250		V <sub>R</sub> = 100V, T <sub>J</sub> = +125°C

- Notes: 5. FR-4 PCB, 2 oz. copper, minimum recommended pad layout per <http://www.diodes.com/package-outlines.html>.  
6. Polyimide PCB, 2 oz. copper; minimum recommended pad layout per <http://www.diodes.com/package-outlines.html>.  
7. Short duration pulse test used to minimize self-heating effect.

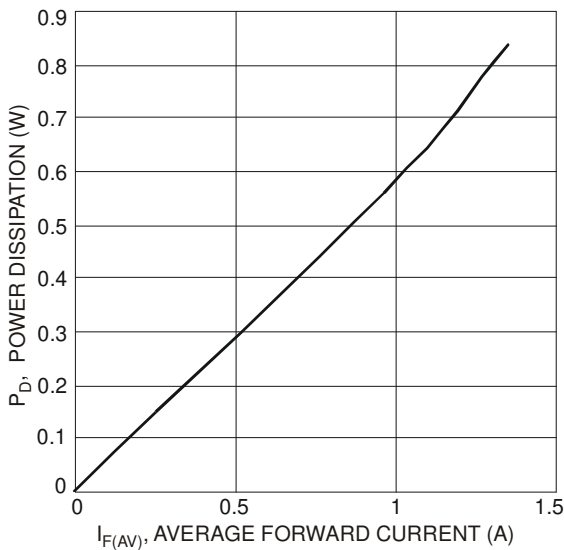


Fig. 1 Forward Power Dissipation

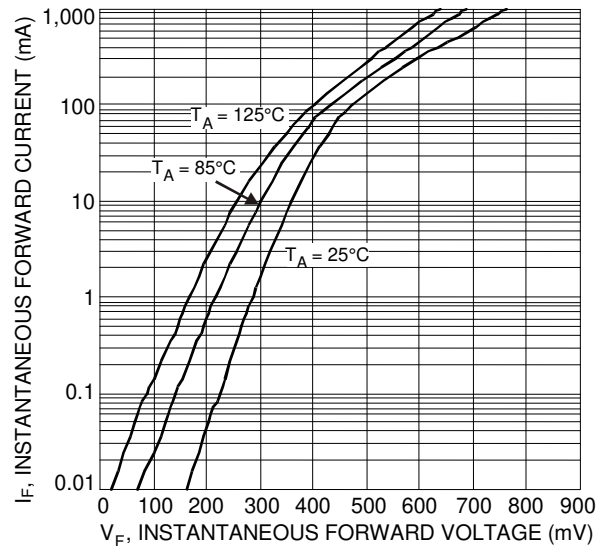


Fig. 2 Typical Forward Characteristics



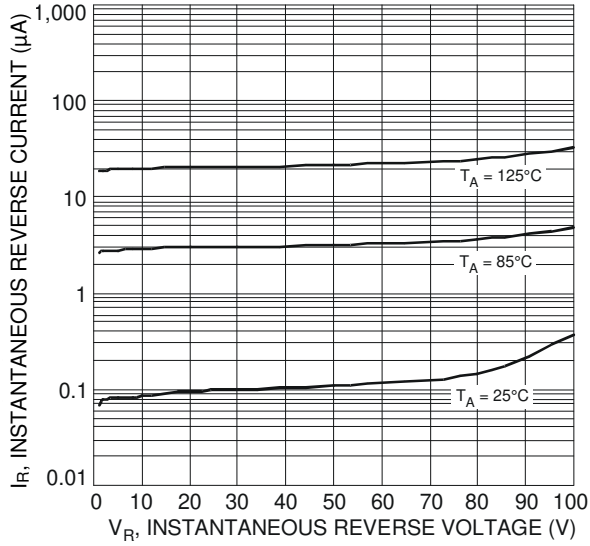


Fig. 3 Typical Reverse Characteristics

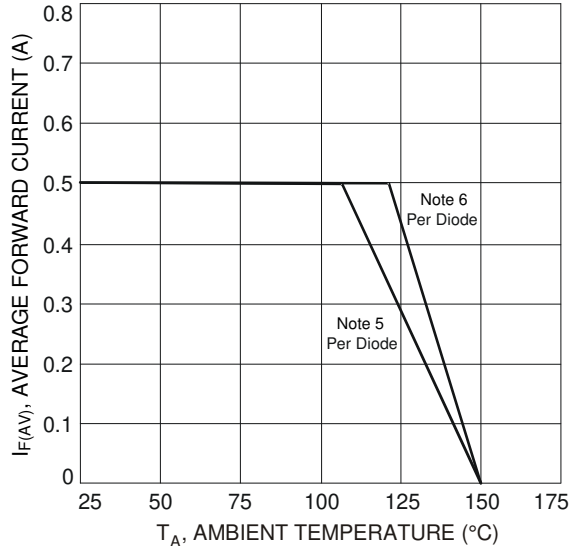


Fig. 4 Forward Current Derating Curve

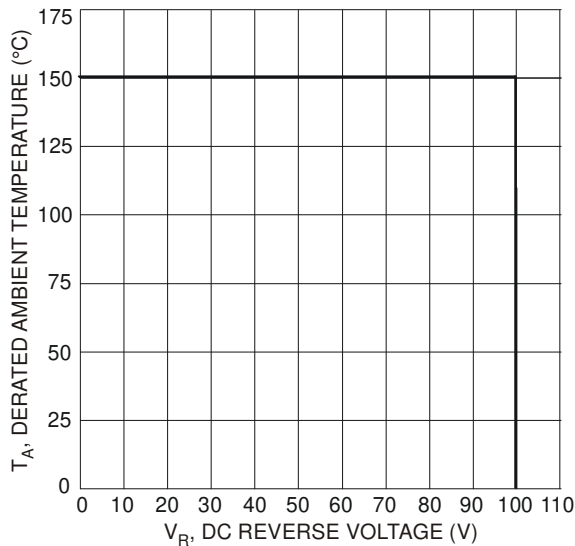
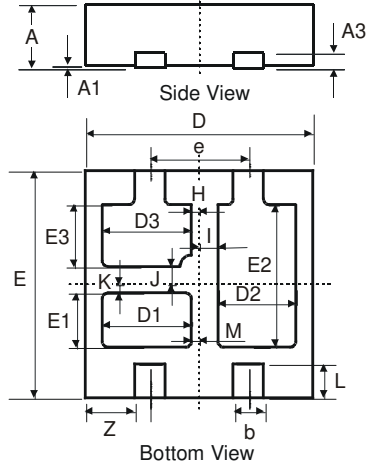


Fig. 5 Operating Temperature Derating

**Package Outline Dimensions**

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

**U-DFN3030-4**



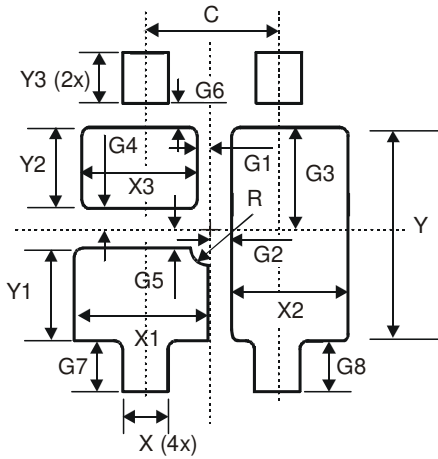
U-DFN3030-4							
Dim	Min	Max	Typ	Dim	Min	Max	Typ
A	0.57	0.63	0.60	E1	0.615	0.815	0.715
A1	0	0.05	0.02	E2	1.78	1.98	1.88
A3	-	-	0.15	E3	0.715	0.915	0.815
B	0.35	0.45	0.40	H	0.05	0.15	0.10
D	2.90	3.10	3.00	I	0.20	0.30	0.25
D1	1.075	1.275	1.175	J	0.185	0.285	0.235
D2	0.925	1.125	1.025	K	0.065	0.165	0.115
D3	1.075	1.275	1.175	L	0.30	0.60	0.45
E	2.90	3.10	3.00	M	0.05	0.15	0.10
e	-	-	1.30	Z	-	-	0.65

**All Dimensions in mm**

**Suggested Pad Layout**

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

**U-DFN3030-4**



Dimensions	Value (in mm)
C	1.300
G1	0.100
G2	0.150
G3	0.830
G4	0.115
G5	0.135
G6	0.170
G7	0.500
G8	0.500
R	0.150
X	0.500
X1	1.375
X2	1.225
X3	1.175
Y	1.980
Y1	1.015
Y2	0.715
Y3	0.650

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