SBR05M100BLP

0.5A SBR BRIDGE SUPER BARRIER RECTIFIER

Product Summary

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

Features

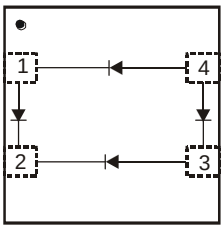
- Low Forward Voltage Drop (V_F) and Low Reverse Leakage (I_R)
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier SBR® Technology
- Low Profile Package with Excellent Thermal Dissipation
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free.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

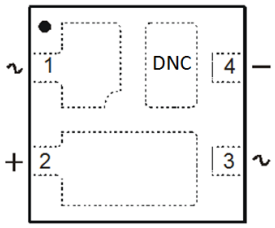
Description and Applications

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.

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)





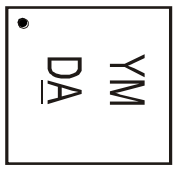
Top View
Pin Configuration
Do Not Connect the DNC Pad

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 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)

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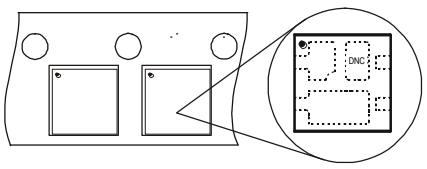

Date Code Key

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

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 capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_{RM}	100	V
RMS Reverse Voltage	$V_{R(RMS)}$	70	V
Average Rectified Output Current	I_O	500	mA
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (Per Diode)	I_{FSM}	8	A

Thermal Characteristics

Characteristic	Symbol	Typ	Max	Unit
Power Dissipation (Note 5)	P_D	-	0.56	W
Thermal Resistance Junction to Ambient Air (Note 5)	$R_{\theta JA}$	-	222	°C/W
Thermal Resistance Junction to Ambient Air (Note 6)	$R_{\theta JA}$	-	149	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150		°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage	$V_{(BR)R}$	100	-	-	V	I_R = 250μA
Forward Voltage (Per Diode)	V_F	-	0.54 0.67 0.56	0.60 0.73 0.63	V	I_F = 0.25A, T_J = +25ºC I_F = 0.5A, T_J = +25ºC I_F = 0.5A, T_J = +125ºC
Reverse Current (Note 7) (Per Diode)	I_R	-	0.3 32	25 250	μA	V_R = 100V, T_J = +25ºC V_R = 100V, T_J = +125ºC

Notes: 5. FR-4 PCB, 2 oz. copper, minimum recommended pad layout per http://www.diodes.com/package-outlines.html.
6. Polymide 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.

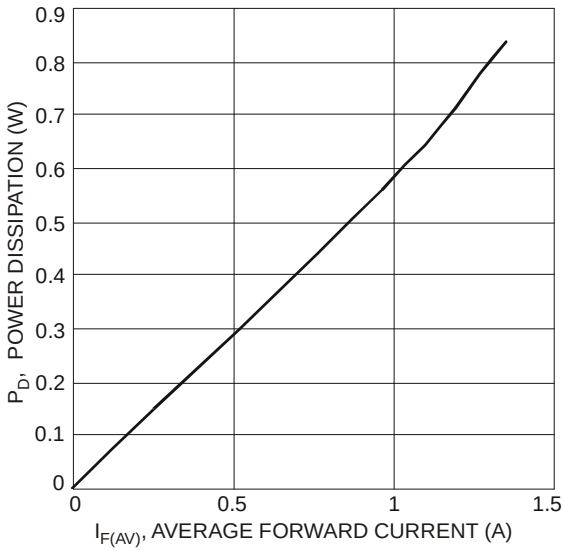

Fig. 1 Forward Power Dissipation

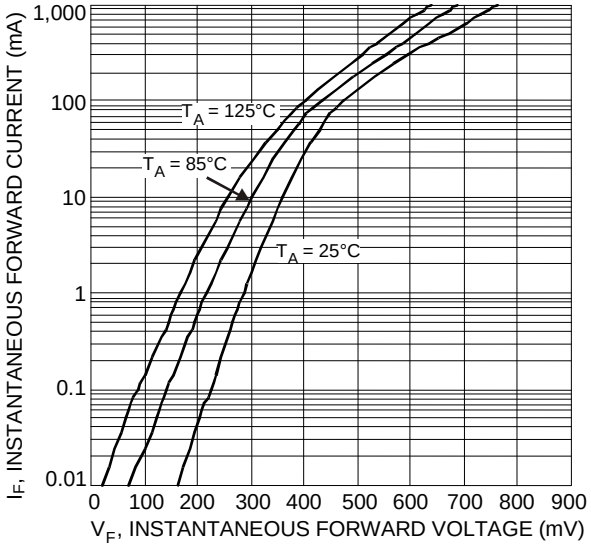

Fig. 2 Typical Forward Characteristics

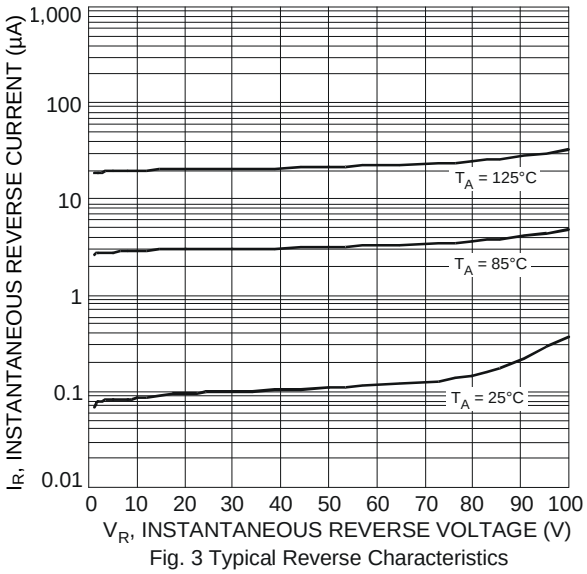

Fig. 3 Typical Reverse Characteristics

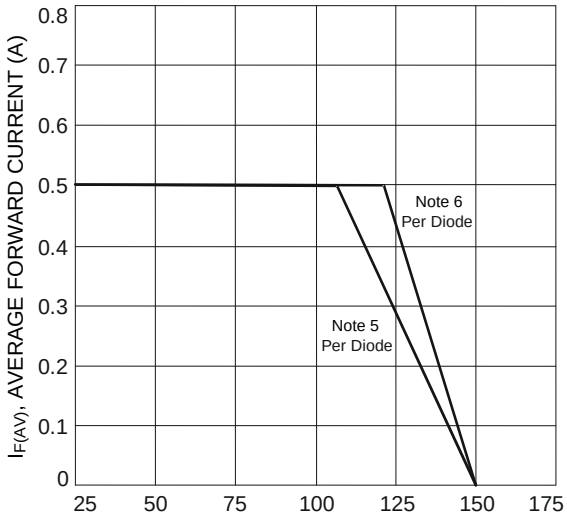

Fig. 4 Forward Current Derating Curve

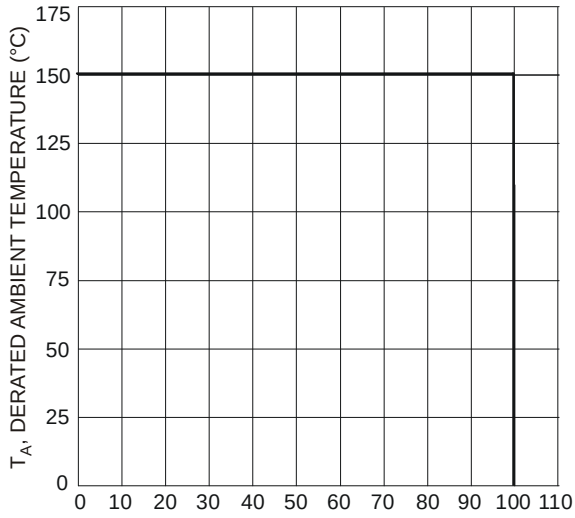

Fig. 5 Operating Temperature Derating

Package Outline Dimensions

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

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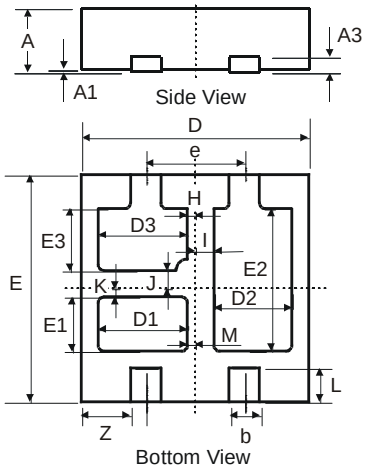

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Dim	**Min**	**Max**	**Typ**	**Dim**	**Min**	**Max**	**Typ**
A	0.57	0.63	0.60	**E1**	0.615	0.815	0.715
A1	0	0.05	0.02	**E2**	1.78	1.98	1.88
A3	-	-	0.15	**E3**	0.715	0.915	0.815
B	0.35	0.45	0.40	**H**	0.05	0.15	0.10
D	2.90	3.10	3.00	**I**	0.20	0.30	0.25
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.

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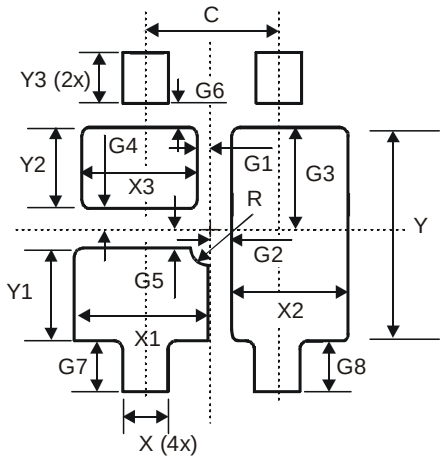

Dimensions	Value (in mm)
C	1.300
G1	0.100
G2	0.150
G3	0.830
G4	0.115
G5	0.135
G6	0.170
G7	0.500
G8	0.500
R	0.150
X	0.500
X1	1.375
X2	1.225
X3	1.175
Y	1.980
Y1	1.015
Y2	0.715
Y3	0.650

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