SBR05M100BLP

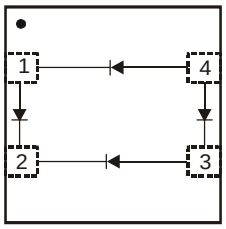
0.5A SBR® BRIDGE SUPER BARRIER RECTIFIER

Features

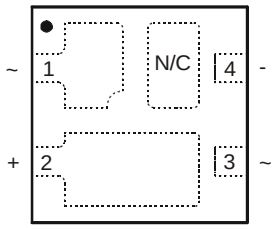
- Ultra Low Leakage Current
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 150ºC Operating Junction Temperature
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **"Green" Device (Note 4)**

Mechanical Data

- Case: 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 e3
- Polarity: See Diagram
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.02 grams (approximate)



Top View
Device Schematic



Top View
Pin Configuration

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 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 2)	P_D	-	0.56	W
Thermal Resistance Junction to Ambient Air (Note 2)	$R_{\theta JA}$	-	222	°C/W
Thermal Resistance Junction to Ambient Air (Note 3)	$R_{\theta JA}$	-	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 (Note 4)	$V_{(BR)R}$	100	-	-	V	I_R = 250 µA
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 4) (Per Diode)	I_R	-	0.3 32	25 250	µA	V_R = 100V, T_J = 25ºC V_R = 100V, T_J = 125ºC

Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes.
2. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com/datasheets/ap02001.pdf.
3. Polymide PCB, 2 oz. copper; minimum recommended pad layout per http://www.diodes.com/datasheets/ap02001.pdf.
4. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php
5. Short duration pulse test used to minimize self-heating effect.

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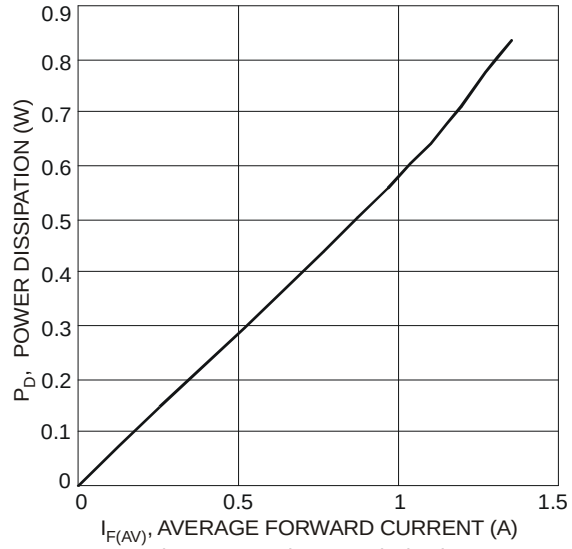

Fig. 1 Forward Power Dissipation

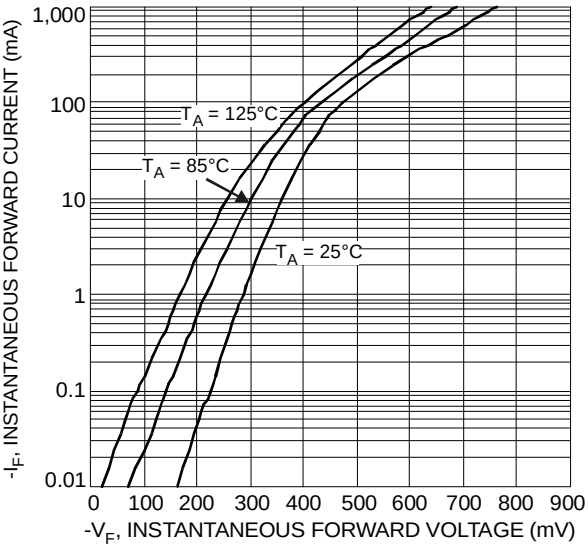

Fig. 2 Typical Forward Characteristics

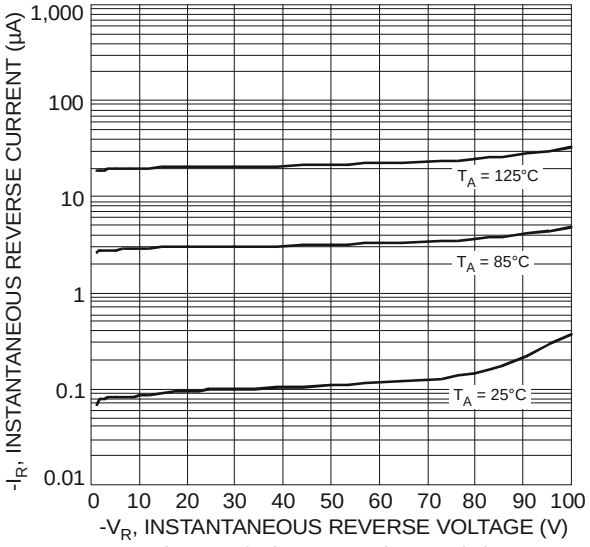

Fig. 3 Typical Reverse Characteristics

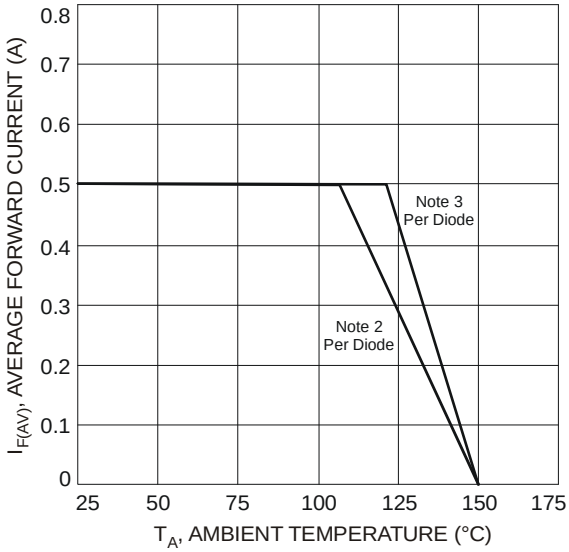

Fig. 4 Forward Current Derating Curve

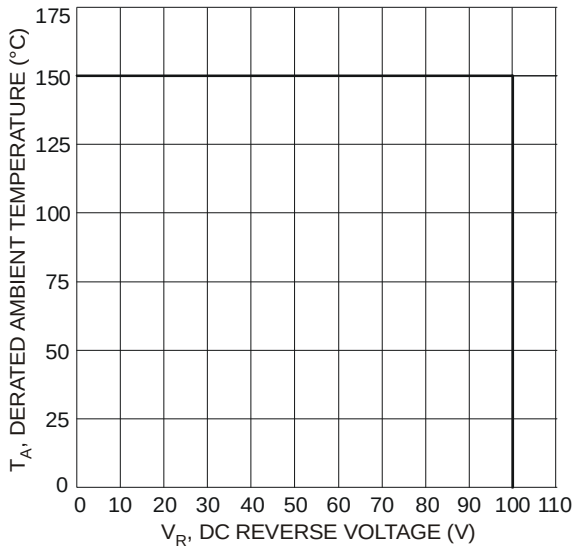

Fig. 5 Operating Temperature Derating

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Ordering Information (Note 6)

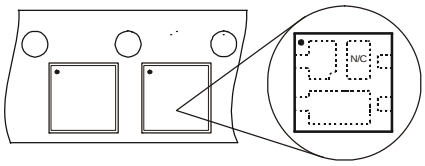
Part Number	Case	Packaging
SBR05M100BLP-7	DFN3030-4	3000/Tape & Reel

Notes: 6. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information

DA = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: U = 2007)
M = Month (ex: 9 = September)

DFN3030-4

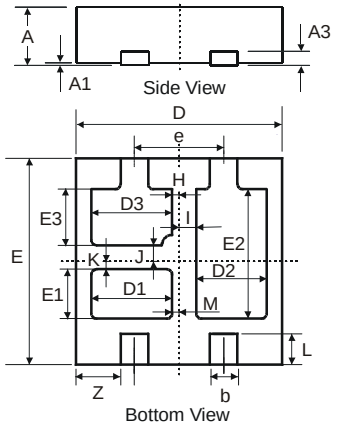


Date Code Key

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015
Code	U	V	W	X	Y	Z	A	B	C

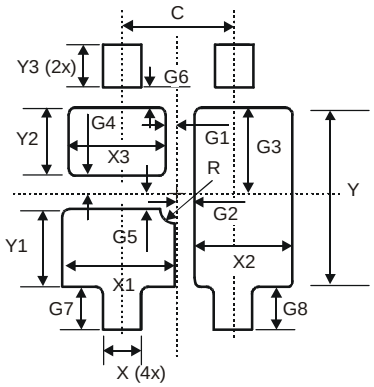
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Package Outline Dimensions



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

Suggested Pad Layout



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