SBR2A40BLP

2.0A SBR® BRIDGE SUPER BARRIER RECTIFIER

Product Summary

V_{RRM} (V)	I_O (A)	$V_{F\ MAX}$ (V) @ +25°C	$I_{R\ MAX}$ (mA) @ +25°C
40	2	0.5	0.1

Features and Benefits

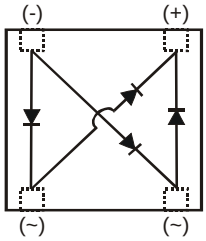
- Low Profile Package, Ideal for Thin Portable Applications
- Low Reverse Leakage Ensuring Greater Stability at Higher Temperatures.
- Low Forward Voltage (V_F) Minimizes Conduction Losses and Improves Efficiency
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Description

Packaged in the compact DFN5060-4 the SBR2A40BLP is designed with low forward voltage and low reverse leakage to meet the needs of LED Lighting applications and wireless charging applications.

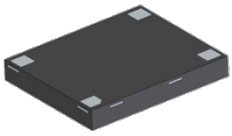
Mechanical Data

- Case: V-DFN5060-4
- 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 e3
- Polarity: See Diagram
- Weight: 0.0715 grams (Approximate)



Top View
Device Schematic

Top View



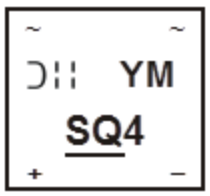
Bottom View

Ordering Information (Note 4)

Part Number	Case	Packaging
SBR2A40BLP-13	V-DFN5060-4	3000/Tape & Reel

Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
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



SQ4= Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: Z =2012)
M = Month (ex: 9 = September)

Date Code Key

Year	2011	2012	2013	2014	2015	2016	2017
Code	Y	Z	A	B	C	D	E

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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_{RM}	40	V
Average Rectified Output Current	I_O	2.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (Per Diode)	I_{FSM}	70	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Note 5)	$R_{\theta JC}$	15	°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
Forward Voltage (Per Diode)	V_F	—	— 0.42	0.50 0.47	V	I_F = 2.0A, T_J = +25°C I_F = 2.0A, T_J = +125°C
Reverse Current (Note 6) (Per Diode)	I_R	—	— —	0.1 10	mA	V_R = 40V, T_J = +25°C V_R = 40V, T_J = +125°C
Total Capacitance	C_T	—	90	—	pF	V_R = 40V, f = 1.0MHz, T_J = +25°C

Notes: 5. Device mounted on FR-4 substrate PC board, with minimum recommended pad layout per http://www.diodes.com.
6. Short duration pulse test used to minimize self-heating effect.

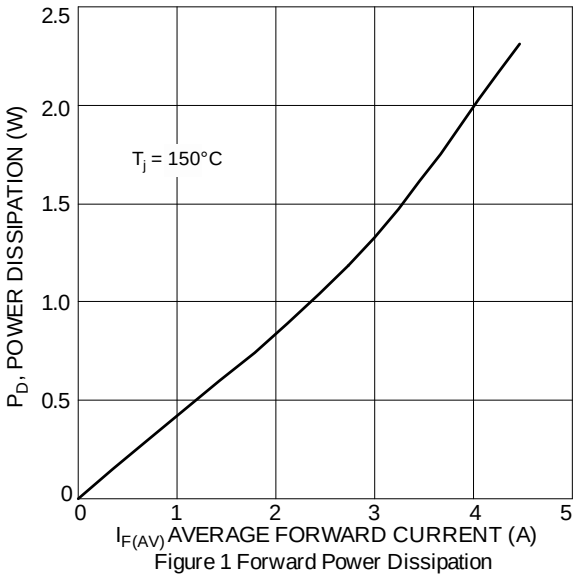


Figure 1 Forward Power Dissipation

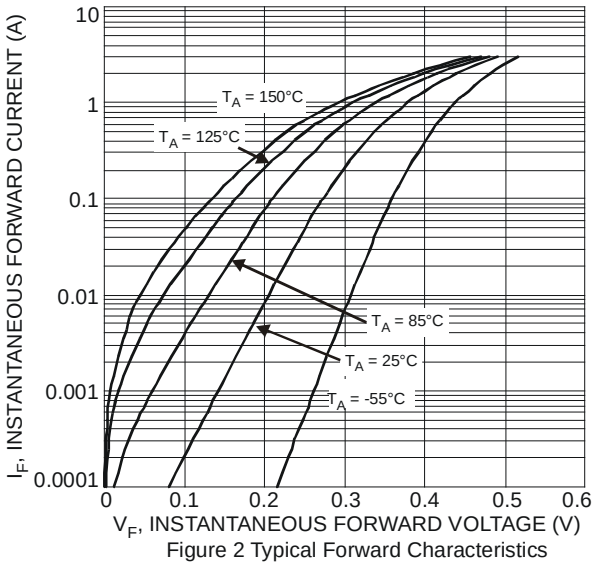


Figure 2 Typical Forward Characteristics

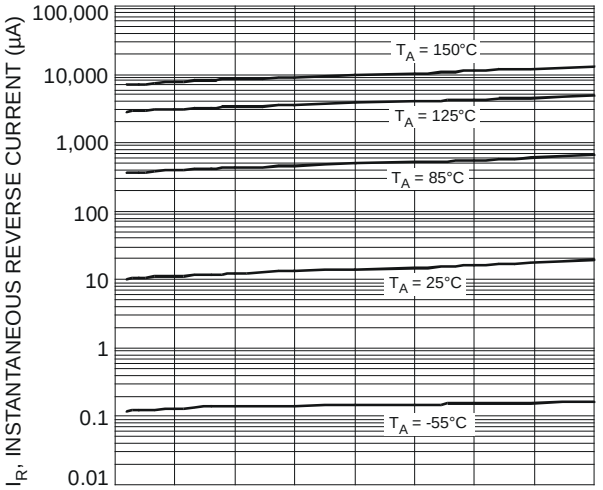


Figure 3 Typical Reverse Characteristics

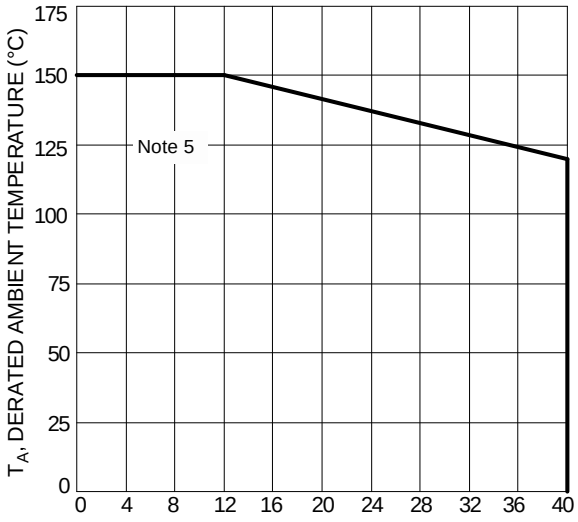


Figure 4 Operating Temperature Derating

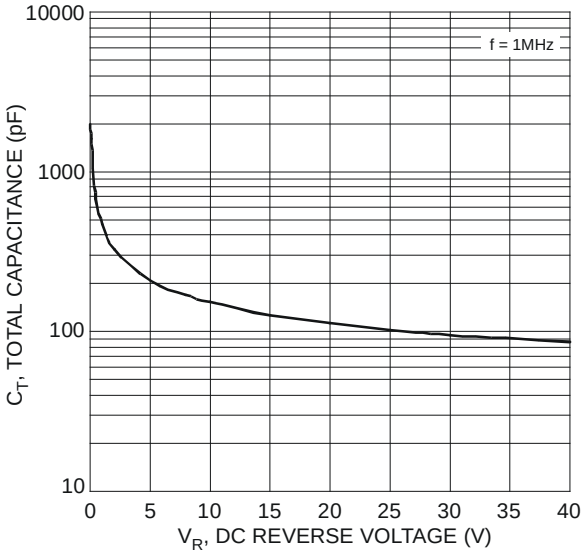
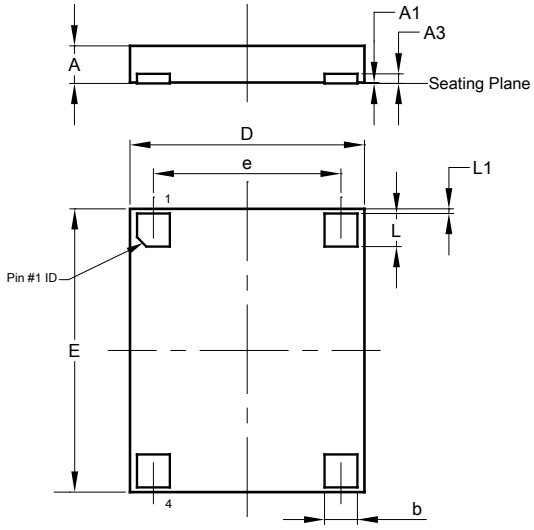


Figure 5 Total Capacitance vs. Reverse Voltage

Package Outline Dimensions

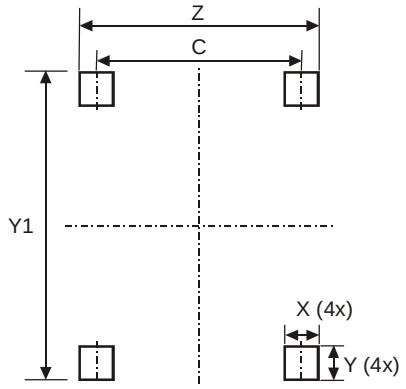
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



V-DFN5060-4			
Dim	**Min**	**Max**	**Typ**
A	0.75	0.85	0.80
A1	0	0.05	0.02
A3	-	-	0.203
b	0.65	0.75	0.70
D	4.95	5.05	5.00
e	-	-	4.00
E	5.95	6.05	6.00
L	0.65	0.75	0.70
L1	0.05	0.15	0.10
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)
C	4.00
X	0.75
Y	0.95
Y1	6.20
Z	4.75

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