

## Product Summary

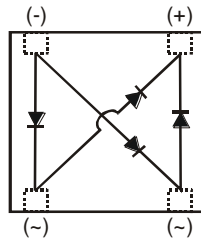
$V_{RRM}$ (V)	$I_O$ (A)	$V_F$ Max (V) @ +25°C	$I_R$ Max (mA) @ +25°C
40	2	0.5	0.1

## 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
- Patented Super Barrier Rectifier SBR<sup>®</sup> Technology
- **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

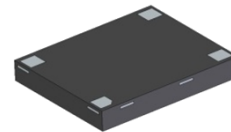
Packaged in the compact DFN5060-4 the SBR2A40BLP is designed with low forward voltage and low reverse leakage to meet the needs of LED Lighting applications and wireless charging applications.



Top View  
Device Schematic



Top View



Bottom View

## Mechanical Data

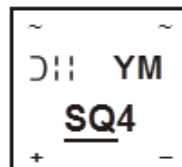
- Case: V-DFN5060-4
- Case Material: Molded Plastic "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 (E3)
- Polarity: See Diagram
- Weight: 0.0715 grams (Approximate)

## Ordering Information (Note 4)

Part Number	Case	Packaging
SBR2A40BLP-13	V-DFN5060-4	3,000/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](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<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>	40	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
Average Rectified Output Current	I <sub>O</sub>	2.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (Per Diode)	I <sub>FSM</sub>	70	A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Note 5)	R <sub>θJC</sub>	15	°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
Forward Voltage (Per Diode)	V <sub>F</sub>	—	— 0.42	0.50 0.47	V	I <sub>F</sub> = 2.0A, T <sub>J</sub> = +25°C I <sub>F</sub> = 2.0A, T <sub>J</sub> = +125°C
Reverse Current (Note 6) (Per Diode)	I <sub>R</sub>	—	—	0.1 10	mA	V <sub>R</sub> = 40V, T <sub>J</sub> = +25°C V <sub>R</sub> = 40V, T <sub>J</sub> = +125°C
Total Capacitance (Per Diode)	C <sub>T</sub>	—	90	—	pF	V <sub>R</sub> = 40V, f = 1.0MHz, T <sub>J</sub> = +25°C

Notes: 5. Device mounted on FR-4 substrate PC board, with minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>.  
6. Short duration pulse test used to minimize self-heating effect.

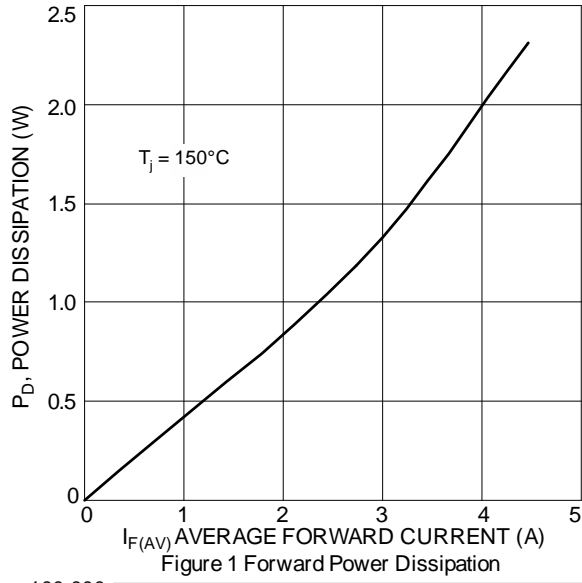


Figure 1 Forward Power Dissipation

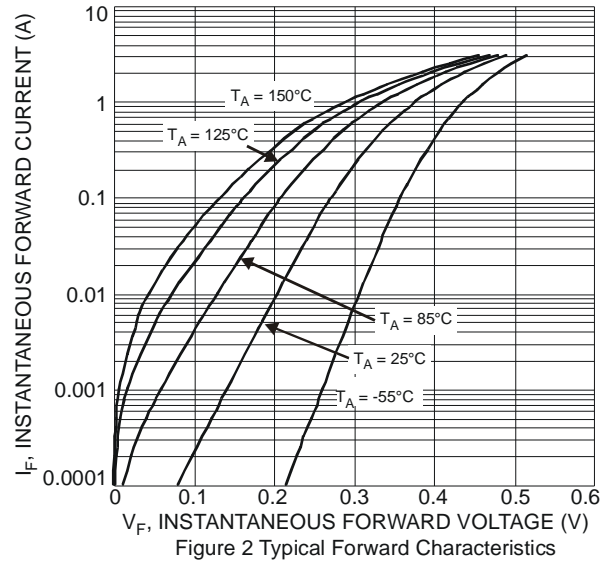


Figure 2 Typical Forward Characteristics

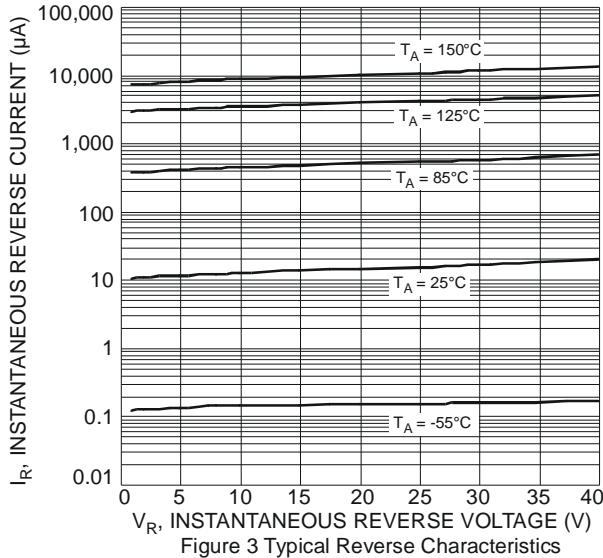


Figure 3 Typical Reverse Characteristics

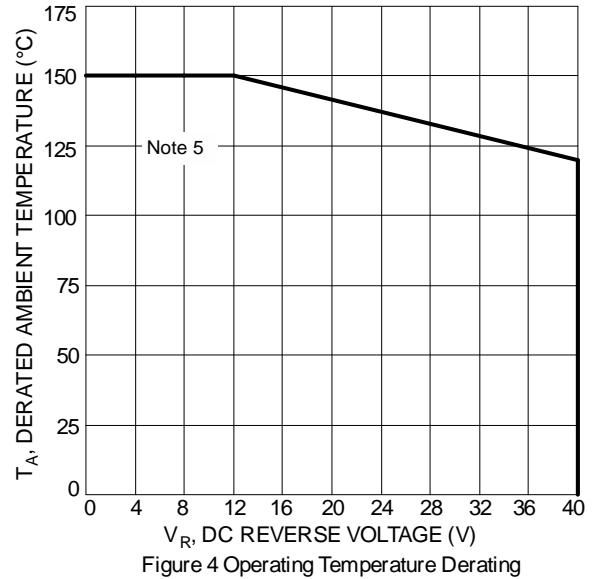


Figure 4 Operating Temperature Derating

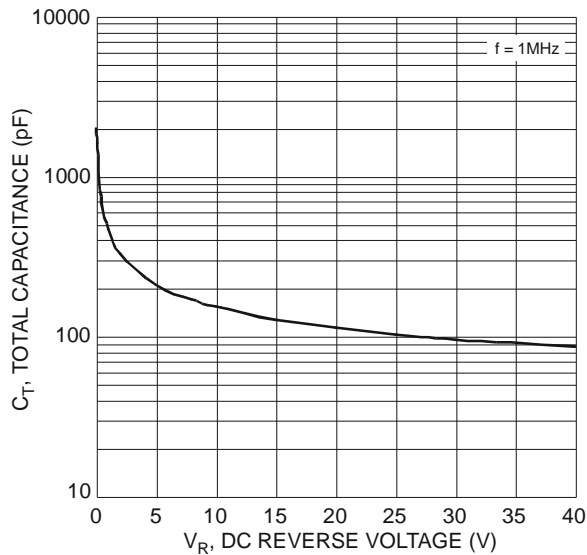
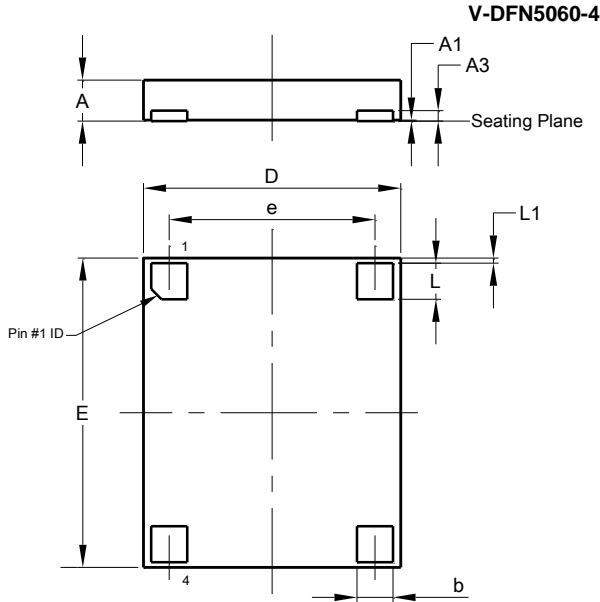


Figure 5 Total Capacitance vs. Reverse Voltage

**Package Outline Dimensions**

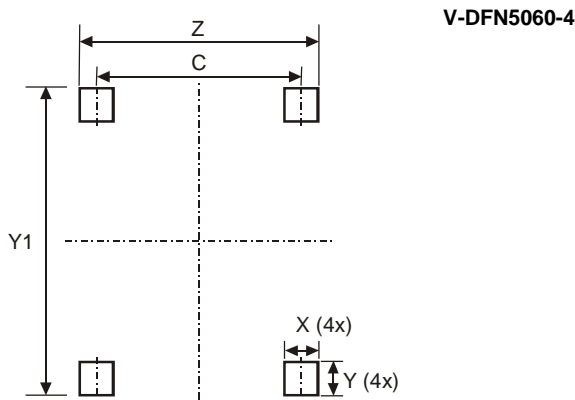
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



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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