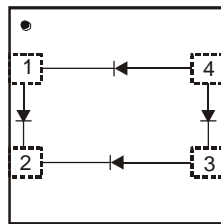


## Product Summary

| $V_{RRM}$ (V) | $I_o$ (A) | $V_F$ MAX (V) | $I_R$ MAX (mA) |
|---------------|-----------|---------------|----------------|
| 60            | 0.5       | 0.49          | 0.10           |

## Description and Applications

The SBR05M60BLP has four diodes in full bridge configuration packaged in the low profile U-DFN3030-4 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.

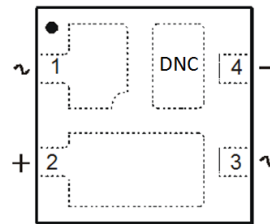


## Features

- 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)



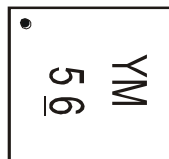
Top View  
Pin Configuration  
\*\*Do Not Connect the DNC Pad\*\*

## Ordering Information (Note 4)

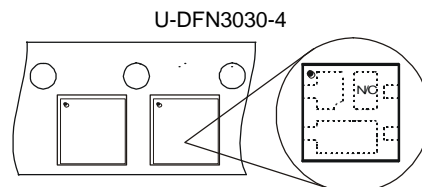
| Part Number   | Case        | Packaging        |
|---------------|-------------|------------------|
| SBR05M60BLP-7 | U-DFN3030-4 | 3000/Tape & Reel |

- 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



5 6 = Product Type Marking Code  
YM = Date Code Marking  
Y = Year (ex: D = 2016)  
M = Month (ex: 9 = September)



### 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** (@  $T_A = +25^\circ\text{C}$ , 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   | $V_{RRM}$ | 60    | V    |
| Working Peak Reverse Voltage  | $V_{RWM}$ |       |      |
| DC Blocking Voltage   | $V_{RM}$  |       |      |
| Average Rectified Output Current  | $I_O$     | 500   | mA   |
| Non-Repetitive Peak Forward Surge Current 8.3ms<br>Single Half Sine-Wave Superimposed on Rated Load (Per Diode) | $I_{FSM}$ | 8     | A    |

**Thermal Characteristics**

| Characteristic                                      | Symbol          | Typ         | Max | Unit                      |
|---|-----------------|-------------|-----|---------------------------|
| Thermal Resistance Junction to Ambient Air (Note 5) | $R_{\theta JA}$ | 215         | -   | $^\circ\text{C}/\text{W}$ |
| Operating and Storage Temperature Range             | $T_J, T_{STG}$  | -55 to +150 |     | $^\circ\text{C}$          |

**Electrical Characteristics** (@  $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

| Characteristic                       | Symbol | Min | Typ  | Max  | Unit          | Test Condition                                |
|--------------------------------------|--------|-----|------|------|---------------|---|
| Forward Voltage (Per Diode)          | $V_F$  | -   | -    | 0.42 | V             | $I_F = 0.25\text{A}, T_J = +25^\circ\text{C}$ |
|                                      |        |     | 0.43 | 0.49 |               | $I_F = 0.5\text{A}, T_J = +25^\circ\text{C}$  |
|                                      |        |     | 0.40 | 0.46 |               | $I_F = 0.5\text{A}, T_J = +125^\circ\text{C}$ |
| Reverse Current (Note 6) (Per Diode) | $I_R$  | -   | 17   | 100  | $\mu\text{A}$ | $V_R = 60\text{V}, T_J = +25^\circ\text{C}$   |
|                                      |        |     | 2.8  | 20   |               | $V_R = 60\text{V}, T_J = +125^\circ\text{C}$  |

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

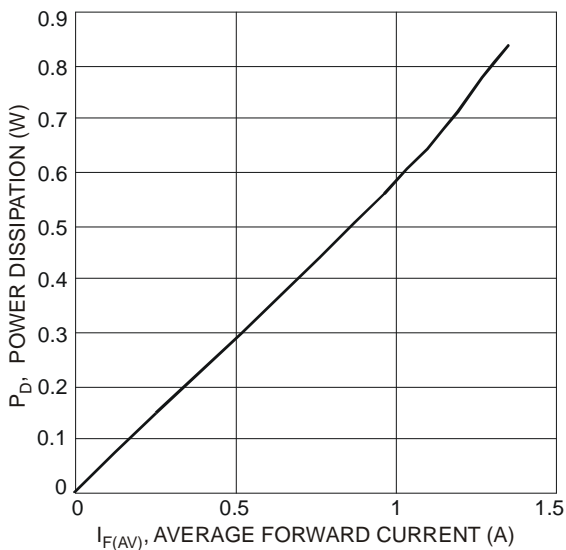


Fig. 1 Forward Power Dissipation

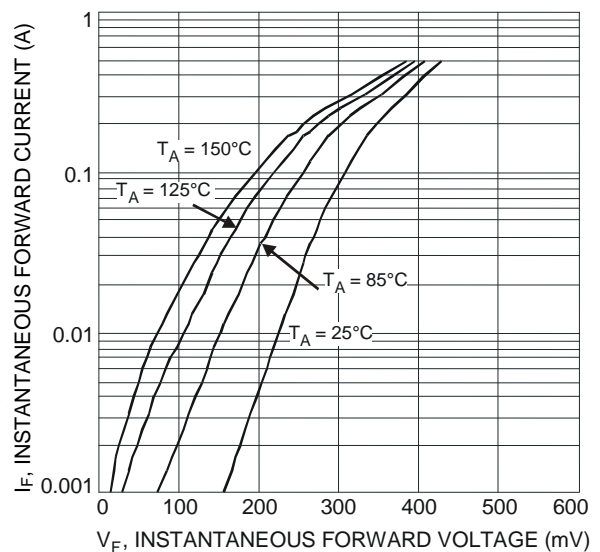
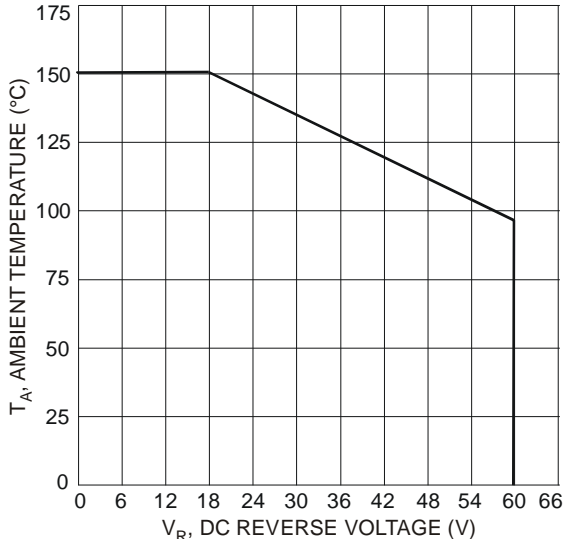
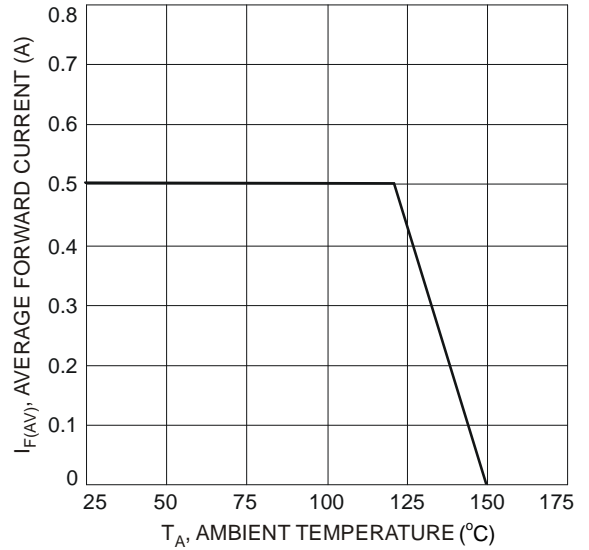
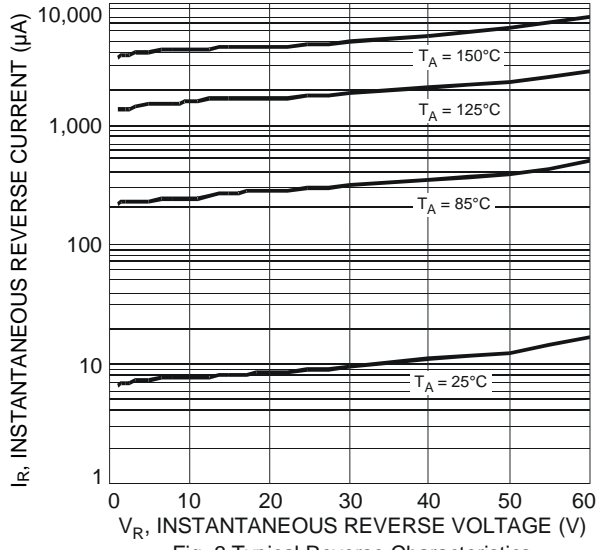


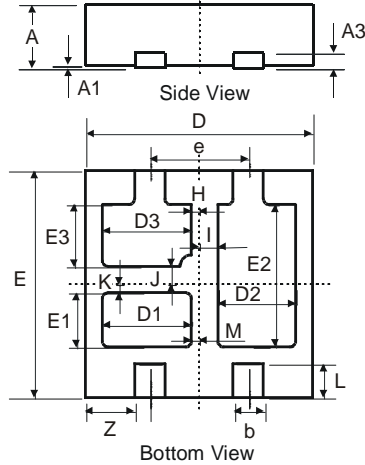
Fig. 2 Typical Forward Characteristics



**Package Outline Dimensions**

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

**U-DFN3030-4**



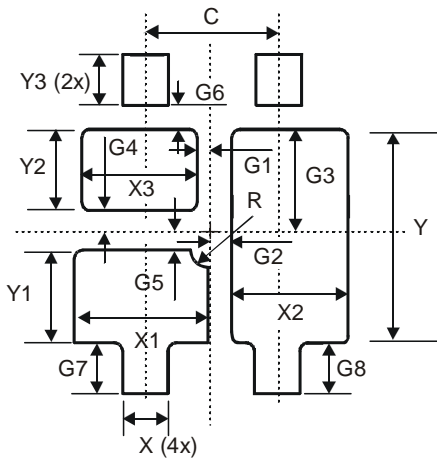
| U-DFN3030-4 |       |       |       |     |       |       |       |
|-------------|-------|-------|-------|-----|-------|-------|-------|
| Dim         | Min   | Max   | Typ   | Dim | Min   | Max   | Typ   |
| A           | 0.57  | 0.63  | 0.60  | E1  | 0.615 | 0.815 | 0.715 |
| A1          | 0     | 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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