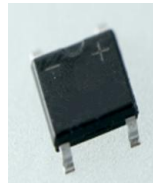


## Product Summary (@T<sub>A</sub> = +25°C)

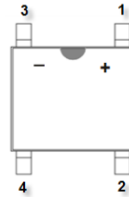
| Part Number | V <sub>RRM</sub> (V) | I <sub>O</sub> (A) | V <sub>F</sub> (V) | I <sub>R</sub> (μA) |
|-------------|----------------------|--------------------|--------------------|---------------------|
| RABF152-13  | 200                  | 1.5                | 1.3                | 5                   |
| RABF154-13  | 400                  | 1.5                | 1.3                | 5                   |
| RABF156-13  | 600                  | 1.5                | 1.3                | 5                   |
| RABF158-13  | 800                  | 1.5                | 1.3                | 5                   |
| RABF1510-13 | 1000                 | 1.5                | 1.3                | 5                   |

## Description and Applications

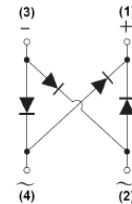
Suitable for AC to DC bridge full wave rectification for SMPS, LED lighting, adapter, battery charger, home appliances, office equipment, and telecommunication applications.



Top View



Pin Diagram



Internal Schematic

## Features and Benefits

- Glass Passivated Die Construction
- Miniature Package Saves Space on PC Boards
- High Current Capability
- Fast Recovery Time for Higher Efficiency
- Ideal for SMT Manufacturing
- Low Forward Voltage Drop
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

## Mechanical Data

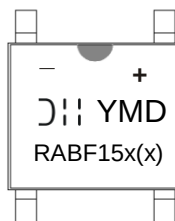
- Case: SOPA-4 (Type B)
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 Ⓔ③
- Polarity: As Marked on Body
- Weight: 0.02 grams (Approximate)

## Ordering Information (Note 4)

| Part Number | Compliance | Case            | Packaging         |
|-------------|------------|-----------------|-------------------|
| RABF1510-13 | Commercial | SOPA-4 (Type B) | 5,000/Tape & Reel |
| RABF158-13  | Commercial | SOPA-4 (Type B) | 5,000/Tape & Reel |
| RABF156-13  | Commercial | SOPA-4 (Type B) | 5,000/Tape & Reel |
| RABF154-13  | Commercial | SOPA-4 (Type B) | 5,000/Tape & Reel |
| RABF152-13  | Commercial | SOPA-4 (Type B) | 5,000/Tape & Reel |

- Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
  2. See [http://www.diodes.com/quality/lead\\_free/](http://www.diodes.com/quality/lead_free/) 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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

## Marking Information



RABF15x(x) = Product Type Marking Code  
 D = Manufacturers' Code Marking  
 YMD = Date Code Marking  
 Y = Last Digit of Year (ex: 8 = 2018)  
 M = See Month/Code Table Below  
 D = Day 1 to 9 = 1 to 9; Day 10 to 31 = A to V

| 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 and Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

| Characteristic                                                                                       | Symbol                                                 | RABF152 | RABF154 | RABF156 | RABF158 | RABF1510 | Unit             |
|------------------------------------------------------------------------------------------------------|--------------------------------------------------------|---------|---------|---------|---------|----------|------------------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage               | V <sub>RRM</sub><br>V <sub>RWM</sub><br>V <sub>R</sub> | 200     | 400     | 600     | 800     | 1000     | V                |
| RMS Reverse Voltage                                                                                  | V <sub>R(RMS)</sub>                                    | 140     | 280     | 420     | 560     | 700      | V                |
| Average Rectified Output Current (Note 5) @ T <sub>C</sub> = +100°C                                  | I <sub>O</sub>                                         | 1.5     |         |         |         |          | A                |
| Non-Repetitive Peak Forward Surge Current, 8.3ms<br>Single Half Sine-Wave Superimposed on Rated Load | I <sub>FSM</sub>                                       | 50      |         |         |         |          | A                |
| I <sup>2</sup> t Rating for Fusing (1ms < t < 8.3ms)                                                 | I <sup>2</sup> t                                       | 10.375  |         |         |         |          | A <sup>2</sup> s |
| Maximum Forward Voltage (Per Element) @ I <sub>F</sub> =1.5A                                         | V <sub>FM</sub>                                        | 1.3     |         |         |         |          | V                |
| Maximum Reverse Recovery Time (Note 6)                                                               | t <sub>RR</sub>                                        | 150     | 150     | 250     | 500     | 500      | ns               |
| Peak Reverse Current @ T <sub>A</sub> = +25°C                                                        | I <sub>R</sub>                                         | 5.0     |         |         |         |          | μA               |
| At Rated DC Blocking Voltage (Note 7) @ T <sub>A</sub> = +125°C                                      |                                                        | 200     |         |         |         |          |                  |
| Typical Total Capacitance (Per Element) (Note 8)                                                     | C <sub>T</sub>                                         | 17      |         |         |         |          | ns               |

**Thermal Characteristics**

| Characteristic                                                            | Symbol                            | Value       | Unit |
|---------------------------------------------------------------------------|-----------------------------------|-------------|------|
| Typical Thermal Resistance, Junction to Ambient (Note 5)<br>(Per Element) | R <sub>θJA</sub>                  | 80          | °C/W |
| Typical Thermal Resistance, Junction to Lead (Per Element)                | R <sub>θJL</sub>                  | 25          | °C/W |
| Operating and Storage Temperature Range                                   | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 | °C   |

- Notes:
5. Device mounted on aluminum substrate PC board with 1.3mm<sup>2</sup> solder pad.
  6. Reverse Recovery Test Conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A.
  7. Short duration pulse test used to minimize self-heating effect.
  8. Measured at 1.0MHz and applied reverse voltage of 4.0V D.C.

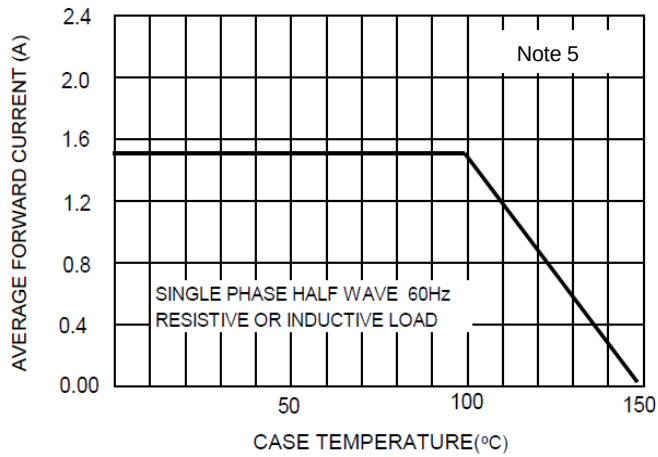


Figure 1. FORWARD CURRENT DERATING

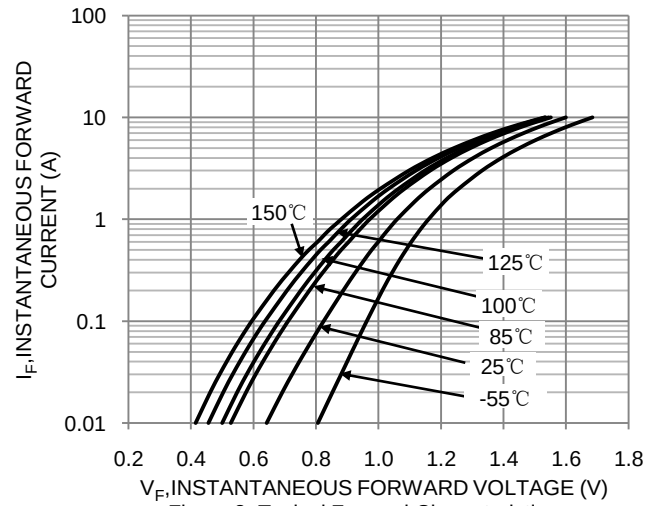


Figure 2. Typical Forward Characteristics

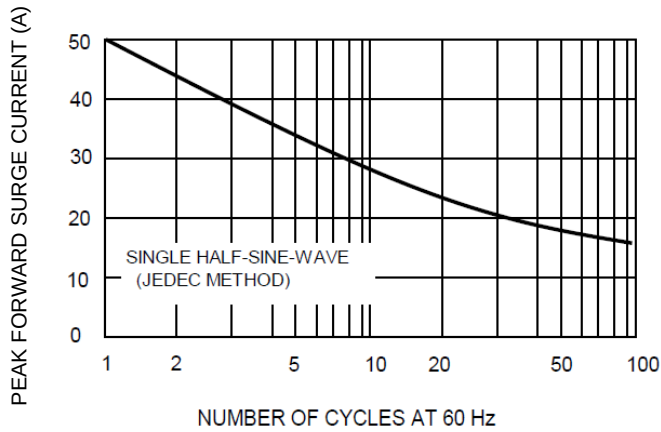


Figure 3. MAXIMUM NON-REPETITIVE SURGE CURRENT

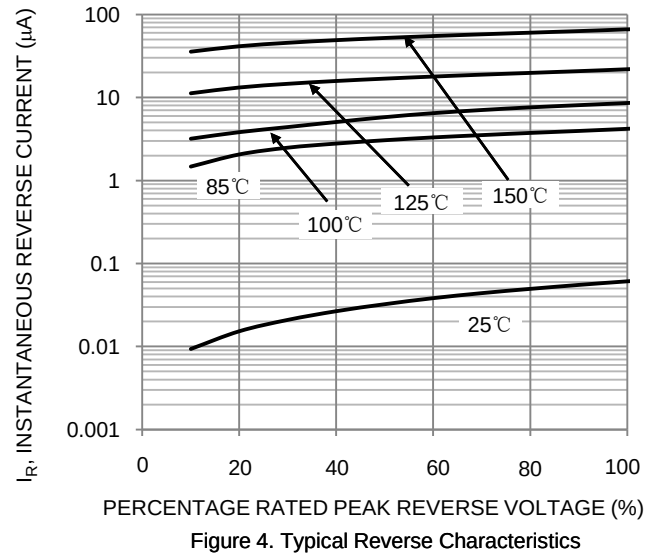


Figure 4. Typical Reverse Characteristics

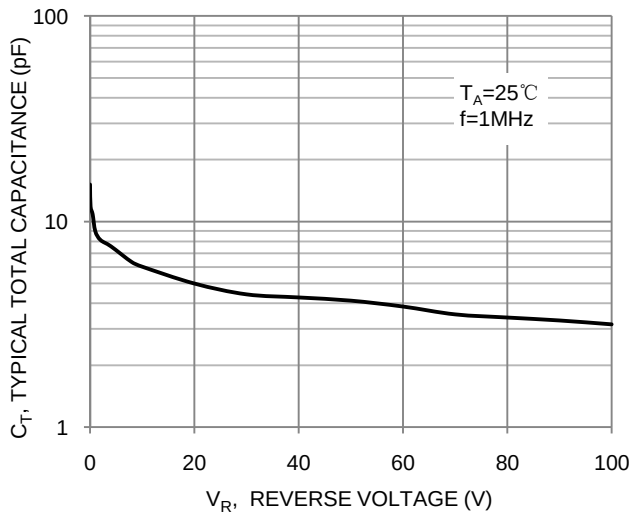
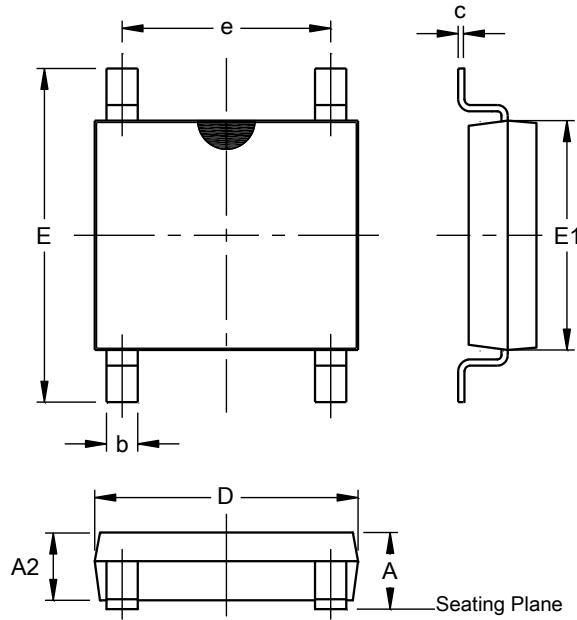


Figure 5. Typical Total Capacitance (Per Element)

## Package Outline Dimensions

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

**SOPA-4 (Type B)**

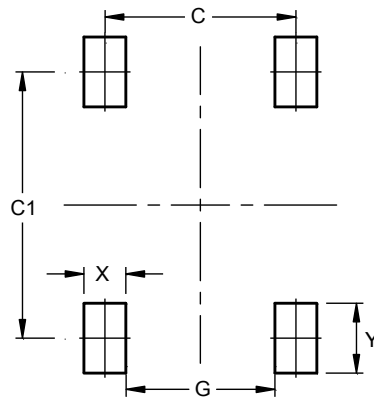


| SOPA-4 (Type B)      |      |      |     |
|----------------------|------|------|-----|
| Dim                  | Min  | Max  | Typ |
| A                    | 1.15 | 1.30 | --  |
| A2                   | 1.00 | 1.25 | --  |
| b                    | 0.50 | 0.70 | --  |
| c                    | 0.15 | 0.25 | --  |
| D                    | 4.80 | 5.30 | --  |
| E                    | 6.00 | 6.80 | --  |
| E1                   | 4.20 | 4.60 | --  |
| e                    | 3.80 | 4.20 | --  |
| All Dimensions in mm |      |      |     |

## Suggested Pad Layout

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

**SOPA-4 (Type B)**



| Dimensions | Value (in mm) |
|------------|---------------|
| C          | 4.10          |
| C1         | 5.72          |
| G          | 3.20          |
| X          | 0.90          |
| Y          | 1.50          |

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