

2.0A SURFACE MOUNT FAST GLASS PASSIVATED BRIDGE RECTIFIER

NEW PRODUCT

Product Summary (@T_A = +25°C)

| V _{RRM} (V) | I _O (A) | V _F (V) | I _R (μA) |
|--------------------------------|--------------------|--------------------|---------------------|
| 200, 400, 600, 800, 1000 | 2.0 | 1.3 | 5 |

Features and Benefits

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

Description and Applications

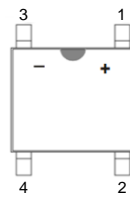
Suitable for AC to DC bridge full wave rectification for SMPS, LED lighting, adapter, battery charger, home appliances, office equipment, and telecommunication applications.

Mechanical Data

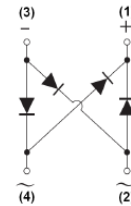
- Case: SOPA-4 (Type B)
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 Ⓔ3
- Polarity: As marked on Body
- Weight: 0.089 grams (Approximate)



Top View



Pin Diagram



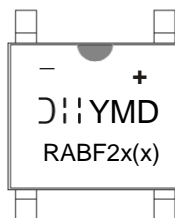
Internal Schematic

Ordering Information (Note 4)

| Part Number | Compliance | Case | Packaging |
|-------------|------------|-----------------|-------------------|
| RABF210-13 | Commercial | SOPA-4 (Type B) | 5,000/Tape & Reel |
| RABF28-13 | Commercial | SOPA-4 (Type B) | 5,000/Tape & Reel |
| RABF26-13 | Commercial | SOPA-4 (Type B) | 5,000/Tape & Reel |
| RABF24-13 | Commercial | SOPA-4 (Type B) | 5,000/Tape & Reel |
| RABF22-13 | 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 <https://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



RABF2x(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_A = +25°C, unless otherwise specified.)

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

| Characteristic | Symbol | RABF22 | RABF24 | RABF26 | RABF28 | RABF210 | Unit |
|--|--|------------|--------|--------|--------|---------|------------------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V _{RRM} V _{RWM} V _R | 200 | 400 | 600 | 800 | 1000 | V |
| RMS Reverse Voltage | V _{R(RMS)} | 140 | 280 | 420 | 560 | 700 | V |
| Average Rectified Output Current (Note 5) @ T _C = +100°C | I _O | 2.0 | | | | | A |
| Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 60 | | | | | A |
| I ² t Rating for Fusing (1ms < t < 8.3ms) | I ² t | 14.94 | | | | | A ² S |
| Maximum Forward Voltage (Per Element) @ I _F = 2.0A | V _{FM} | 1.3 | | | | | V |
| Maximum Reverse Recovery Time (Note 6) | t _{RR} | 150 | 250 | 500 | | | ns |
| Peak Reverse Current @ T _A = +25°C At Rated DC Blocking Voltage (Note 7) @ T _A = +125°C | I _R | 5.0 200 | | | | | μA |
| Typical Total Capacitance (Per Element) (Note 8) | C _T | 17 | | | | | ns |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Typical Thermal Resistance, Junction to Ambient (Note 5) (Per Element) | R _{θJA} | 63 | °C/W |
| Typical Thermal Resistance, Junction to Lead (Per Element) | R _{θJL} | 25 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -55 to +150 | °C |

- Notes:
5. Device mounted on aluminum substrate PC board with 1.3mm² solder pad.
 6. Reverse Recovery Test Conditions: I_F = 0.5A, I_R = 1.0A, I_{RR} = 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.

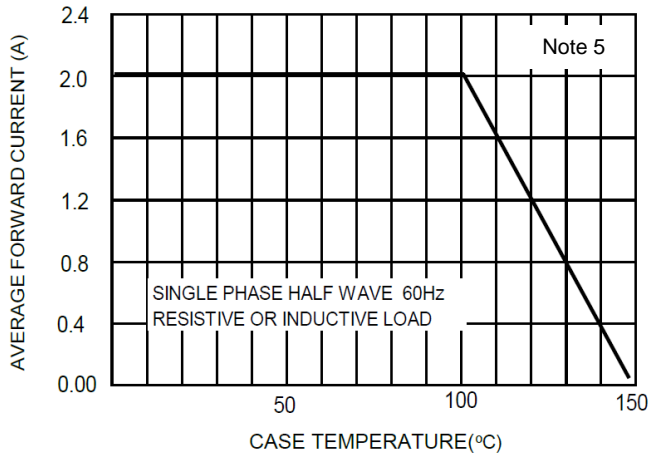


Figure 1. Forward Current Derating

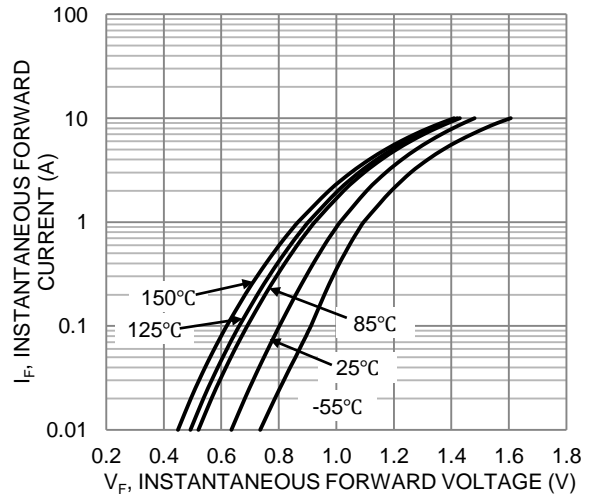


Figure 2. Typical Forward Characteristics

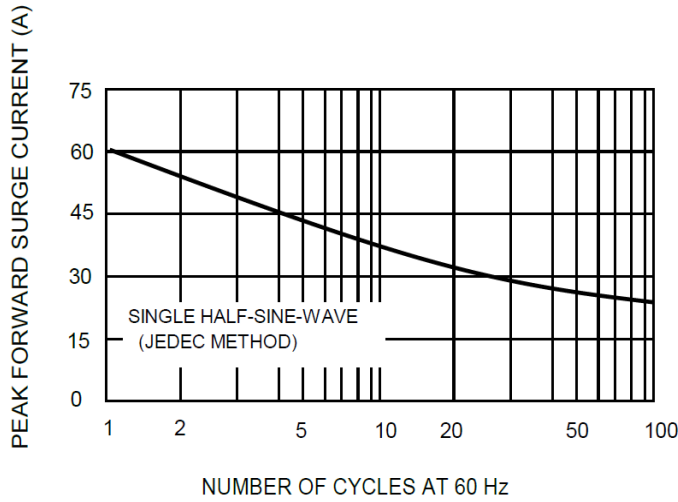


Figure 3. Maximum Non-Repetitive Forward Surge Current

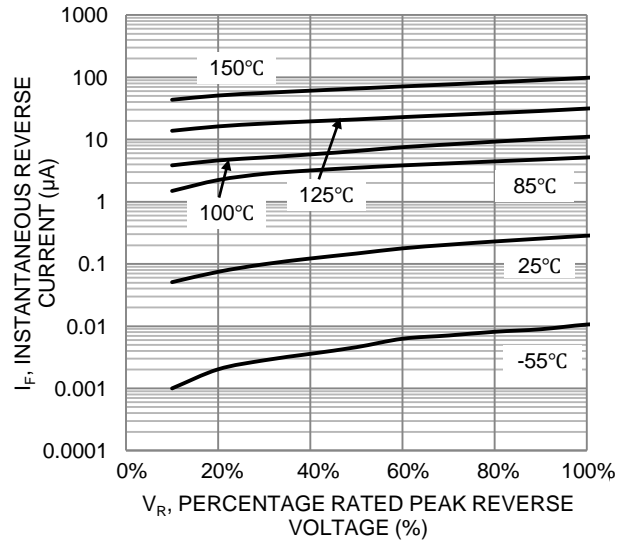


Figure 4. Typical Reverse Characteristics

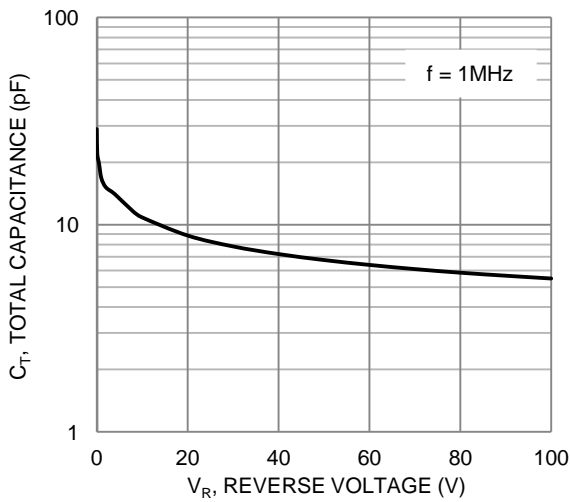
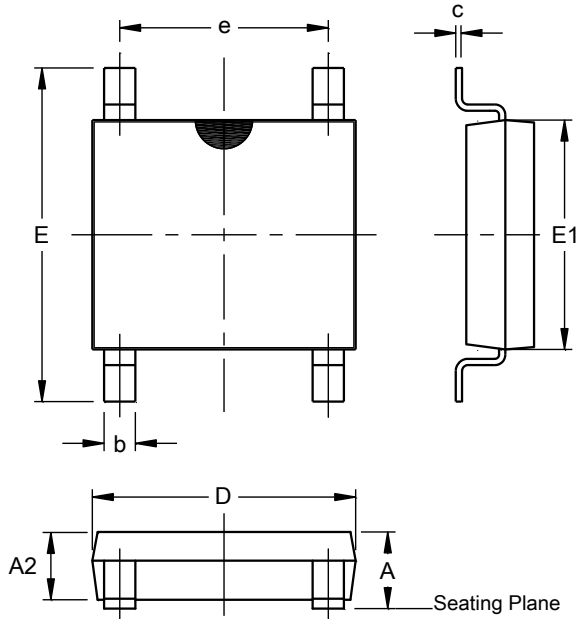


Figure 5. Typical Total Capacitance

Package Outline Dimensions

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

SOPA-4 (Type B)

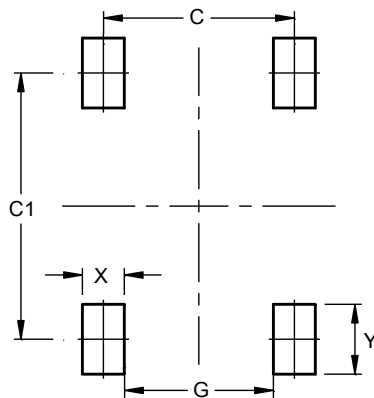


| SOPA-4 (Type B) | | | |
|----------------------|------|------|-----|
| Dim | Min | Max | Typ |
| A | 1.15 | 1.30 | -- |
| A2 | 1.00 | 1.25 | -- |
| b | 0.50 | 0.70 | -- |
| c | 0.15 | 0.25 | -- |
| D | 4.80 | 5.30 | -- |
| E | 6.00 | 6.80 | -- |
| E1 | 4.20 | 4.60 | -- |
| e | 3.80 | 4.20 | -- |
|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