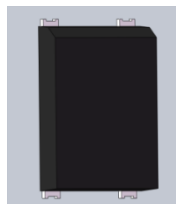


**3.0A SURFACE MOUNT FAST GLASS PASSIVATED BRIDGE RECTIFIER**
**Product Summary (@T<sub>A</sub> = +25°C)**

| V <sub>RRM</sub> (V)         | I <sub>O</sub> (A) | V <sub>FM</sub> (V) | I <sub>R</sub> (μA) |
|------------------------------|--------------------|---------------------|---------------------|
| 1000,800,600,<br>400,200,100 | 3.0                | 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.



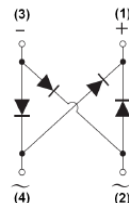
Top View

**Features and Benefits**

- Glass Passivated Die Construction
- Miniature Package Saves Space on PC Boards
- Low Leakage Current
- Ideal for SMT Manufacturing
- Low Forward Voltage Drop
- Fast Recovery Time for Higher Efficiency
- Surge Overload Rating to 100A Peak
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

**Mechanical Data**

- Case: DBF
- 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)

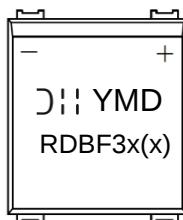


Internal Schematic

**Ordering Information (Note 4)**

| Part Number | Compliance | Case | Packaging         |
|-------------|------------|------|-------------------|
| RDBF310-13  | Commercial | DBF  | 3,000/Tape & Reel |
| RDBF38-13   | Commercial | DBF  | 3,000/Tape & Reel |
| RDBF36-13   | Commercial | DBF  | 3,000/Tape & Reel |
| RDBF34-13   | Commercial | DBF  | 3,000/Tape & Reel |
| RDBF32-13   | Commercial | DBF  | 3,000/Tape & Reel |
| RDBF31-13   | Commercial | DBF  | 3,000/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**


RDBF3x(x) = Product Type Marking Code  
 YMD = 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                                                 | RDBF31     | RDBF32 | RDBF34 | RDBF36 | RDBF38 | RDBF310 | 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> | 100        | 200    | 400    | 600    | 800    | 1000    | V                |
| RMS Reverse Voltage                                                                                        | V <sub>R(RMS)</sub>                                    | 70         | 140    | 280    | 420    | 560    | 700     | V                |
| Average Rectified Output Current (Note 5) @<br>T <sub>C</sub> = +120°C                                     | I <sub>O</sub>                                         | 3.0        |        |        |        |        |         | A                |
| Non-Repetitive Peak Forward Surge Current,<br>8.3ms<br>Single Half Sine-Wave Superimposed on<br>Rated Load | I <sub>FSM</sub>                                       | 100        |        |        |        |        |         | A                |
| I <sup>2</sup> t Rating for Fusing (1ms < t < 8.3ms)                                                       | I <sup>2</sup> t                                       | 41.5       |        |        |        |        |         | A <sup>2</sup> S |
| Maximum Forward Voltage (Per Element)<br>@I <sub>F</sub> =2.5A                                             | V <sub>FM</sub>                                        | 1.3        |        |        |        |        |         | V                |
| Maximum Reverse Recovery Time (Note 7)                                                                     | t <sub>RR</sub>                                        | 150        |        |        | 250    | 500    |         | ns               |
| Peak Reverse Current @T <sub>A</sub> =+25°C<br>At Rated DC Blocking Voltage @T <sub>A</sub> =+125°C        | I <sub>R</sub>                                         | 5.0<br>500 |        |        |        |        |         | μA               |
| Typical Total Capacitance (Per Element)<br>(Note 8)                                                        | C <sub>T</sub>                                         | 45         |        |        |        |        |         | pF               |

## Thermal Characteristics

| Characteristic                                                            | Symbol                            | Value       | Unit |
|---------------------------------------------------------------------------|-----------------------------------|-------------|------|
| Typical Thermal Resistance, Junction to Ambient (Note 6)<br>(Per Element) | R <sub>θJA</sub>                  | 15          | °C/W |
| Typical Thermal Resistance, Junction to Case (Per Element)                | R <sub>θJC</sub>                  | 5           | °C/W |
| Operating and Storage Temperature Range                                   | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 | °C   |

- Notes:
- Device mounted on glass epoxy PC board with 1.3mm<sup>2</sup> solder pad.
  - Device mounted on 15mmx12mmx1.6mm Al pad attach 195mmx110mmx10mm steel plate.
  - Reverse recovery test conditions: I<sub>F</sub> = 0.5A, I<sub>R</sub> = 1.0A, I<sub>RR</sub> = 0.25A
  - Measured at 1.0MHz and applied reverse voltage of 4.0V D.C.

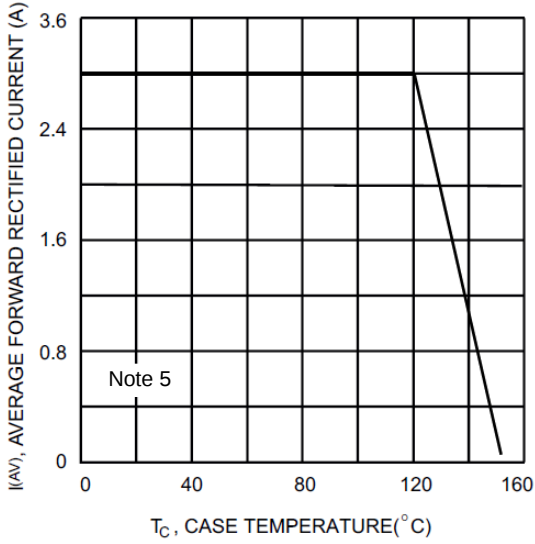


Fig. 1 Output Current Derating Curve

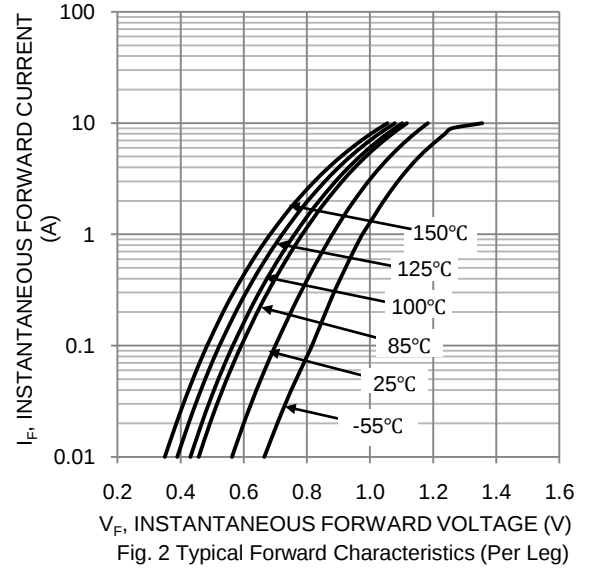


Fig. 2 Typical Forward Characteristics (Per Leg)

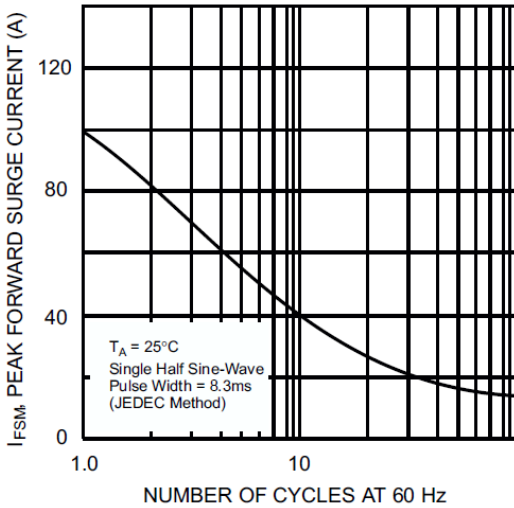


Fig.3 Maximum Non-Repetitive Surge Current

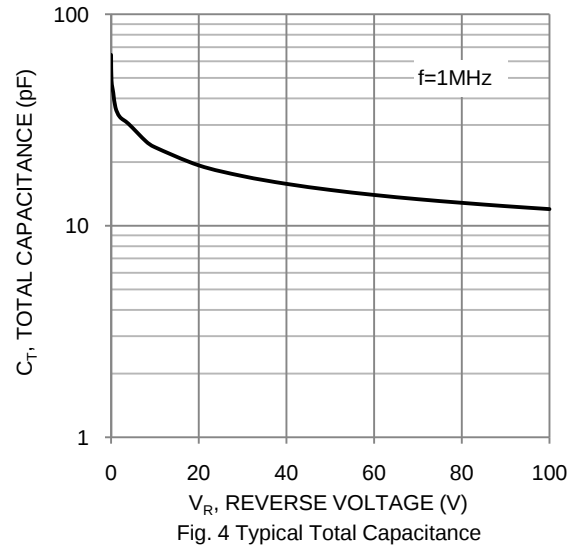


Fig. 4 Typical Total Capacitance

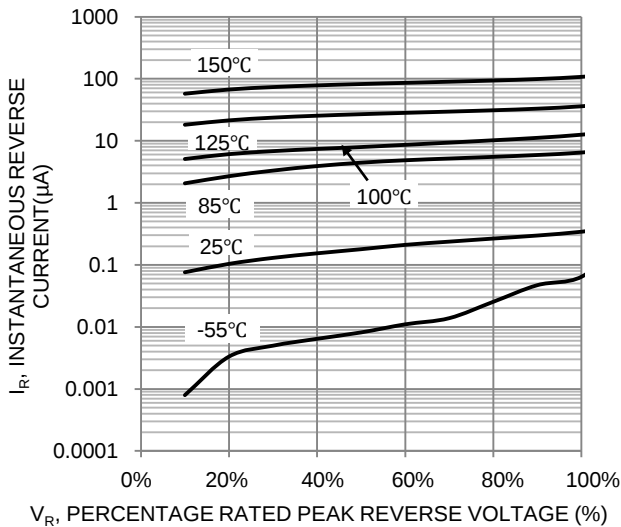
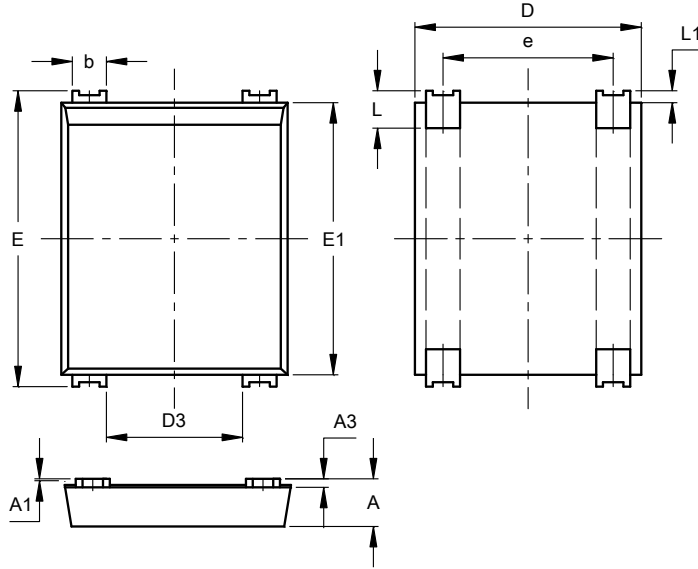


Fig.5 Typical Reverse Characteristics

## Package Outline Dimensions

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

**DBF**

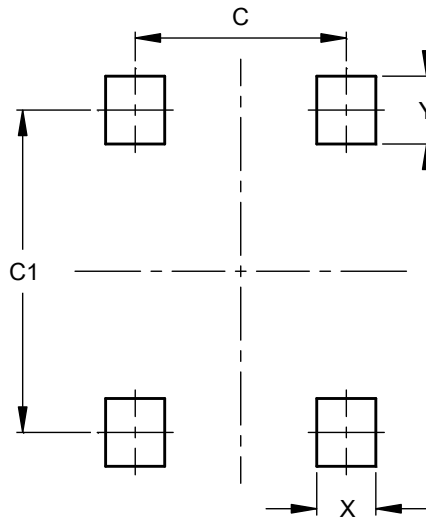


| DBF                  |      |      |     |
|----------------------|------|------|-----|
| Dim                  | Min  | Max  | Typ |
| A                    | 1.30 | 1.50 | --  |
| A1                   | 0.04 | 0.12 | --  |
| A3                   | 0.15 | 0.35 | --  |
| b                    | 0.80 | 1.20 | --  |
| D                    | 6.45 | 6.85 | --  |
| D3                   | 3.80 | 4.20 | --  |
| E                    | 8.50 | 8.90 | --  |
| E1                   | 7.80 | 8.20 | --  |
| e                    | 4.80 | 5.20 | --  |
| L                    | 0.80 | 1.40 | --  |
| L1                   | 0.30 | 0.40 | --  |
| All Dimensions in mm |      |      |     |

## Suggested Pad Layout

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

**DBF**



| Dimensions | Value (in mm) |
|------------|---------------|
| C          | 5.00          |
| C1         | 7.60          |
| X          | 1.40          |
| Y          | 1.60          |

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