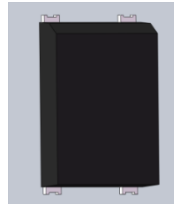


3.0A SURFACE MOUNT FAST GLASS PASSIVATED BRIDGE RECTIFIER
NEW PRODUCT
Product Summary (@T_A = +25°C)

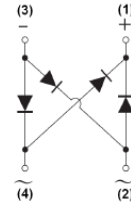
| V _{RRM} (V) | I _O (A) | V _{FM} (V) | I _R (µA) |
|------------------------------|--------------------|---------------------|---------------------|
| 1000,800,600, 400,200,100 | 3.0 | 1.3 | 5 |

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



Internal Schematic

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)**

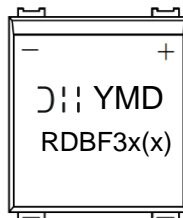
Mechanical Data

- 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)

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
 011 = 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 | RDBF31 | RDBF32 | RDBF34 | RDBF36 | RDBF38 | RDBF310 | Unit |
|--|---------------------|--------|--------|--------|--------|--------|---------|------------------|
| Peak Repetitive Reverse Voltage | V _{RRM} | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Working Peak Reverse Voltage | V _{RWM} | | | | | | | |
| DC Blocking Voltage | V _R | | | | | | | |
| RMS Reverse Voltage | V _{R(RMS)} | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Average Rectified Output Current (Note 5) @ T _C = +120°C | I _O | 3.0 | | | | | | A |
| Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 100 | | | | | | A |
| I ² t Rating for Fusing (1ms < t < 8.3ms) | I ² t | 41.5 | | | | | | A ² S |
| Maximum Forward Voltage (Per Element) @ I _F =2.5A | V _{FM} | 1.3 | | | | | | V |
| Maximum Reverse Recovery Time (Note 7) | t _{RR} | 150 | | | 250 | 500 | | ns |
| Peak Reverse Current @ T _A =+25°C | I _R | 5.0 | | | | | | μA |
| At Rated DC Blocking Voltage @ T _A =+125°C | | 500 | | | | | | |
| Typical Total Capacitance (Per Element) (Note 8) | C _T | 45 | | | | | | pF |

Thermal Characteristics

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

- Notes:
- Device mounted on glass epoxy PC board with 1.3mm² solder pad.
 - Device mounted on 15mmx12mmx1.6mm Al pad attach 195mmx110mmx10mm steel plate.
 - Reverse recovery test conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A
 - Measured at 1.0MHz and applied reverse voltage of 4.0V D.C.

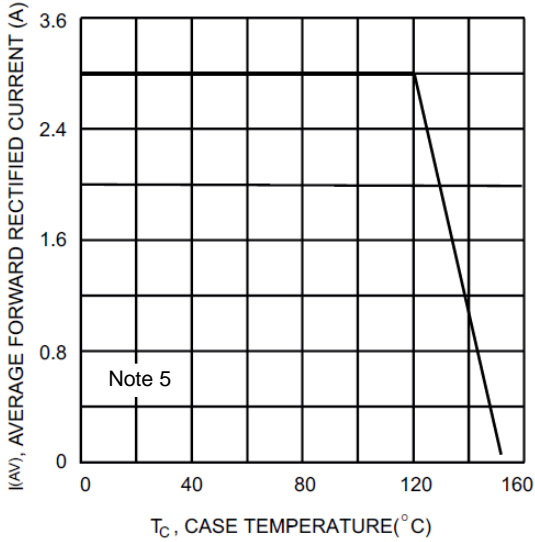


Fig. 1 Output Current Derating Curve

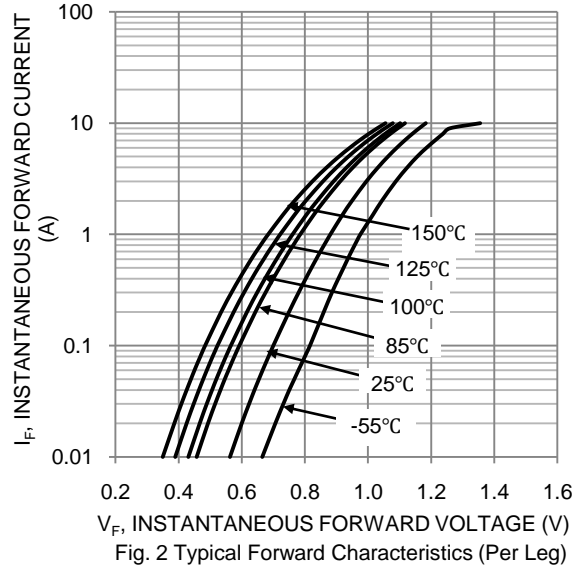


Fig. 2 Typical Forward Characteristics (Per Leg)

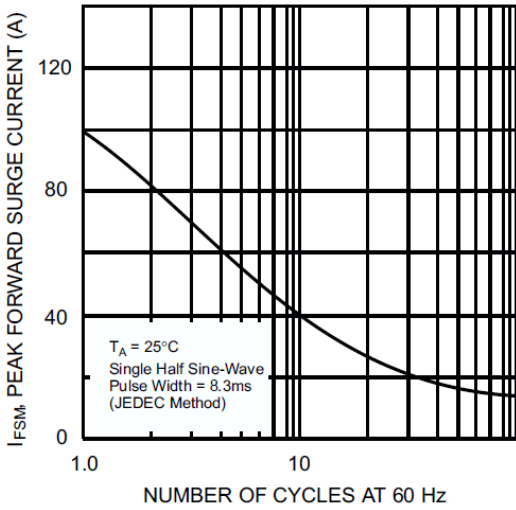


Fig.3 Maximum Non-Repetitive Surge Current

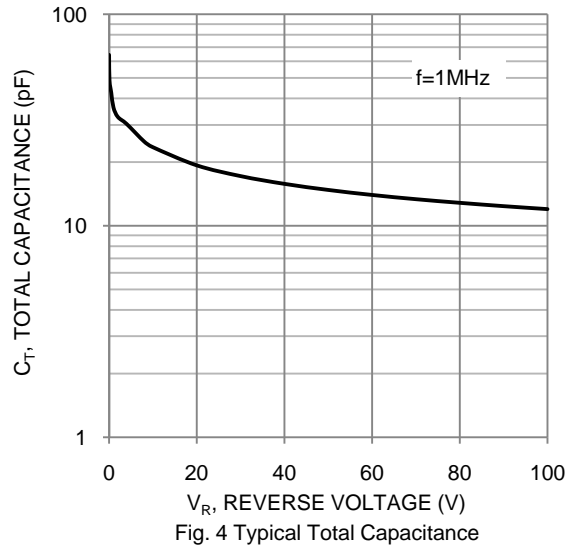


Fig. 4 Typical Total Capacitance

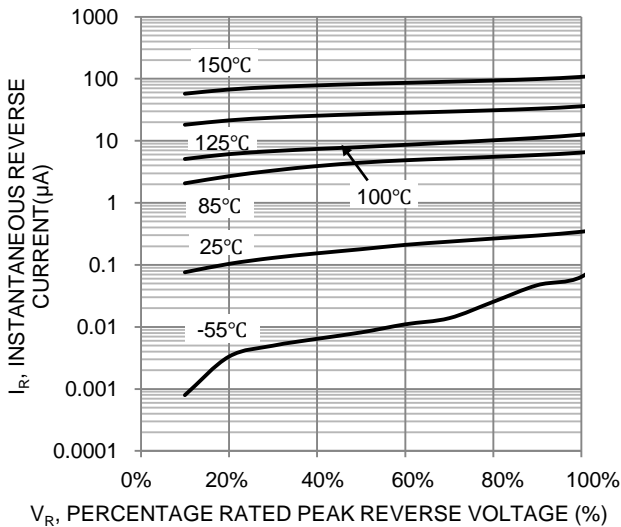
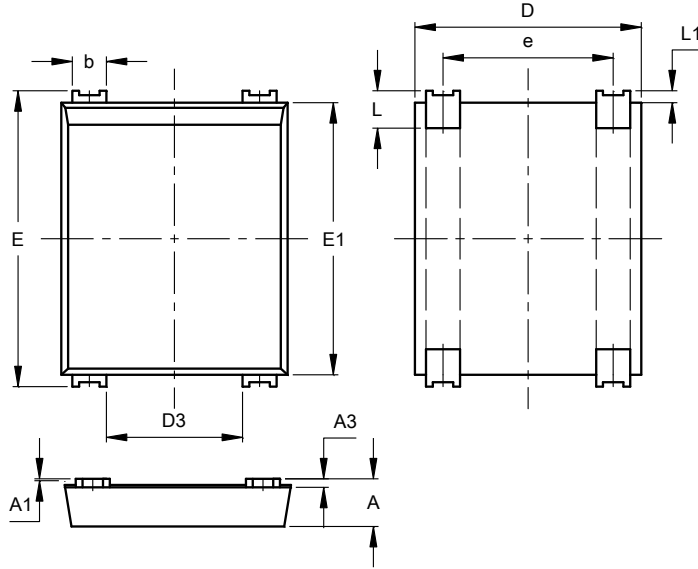


Fig.5 Typical Reverse Characteristics

Package Outline Dimensions

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

DBF

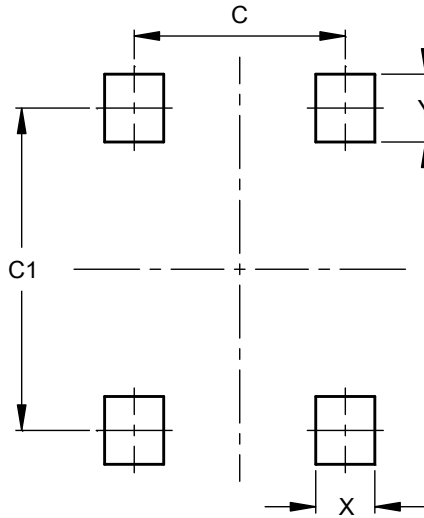


| DBF | | | |
|----------------------|------|------|-----|
| Dim | Min | Max | Typ |
| A | 1.30 | 1.50 | -- |
| A1 | 0.04 | 0.12 | -- |
| A3 | 0.15 | 0.35 | -- |
| b | 0.80 | 1.20 | -- |
| D | 6.45 | 6.85 | -- |
| D3 | 3.80 | 4.20 | -- |
| E | 8.50 | 8.90 | -- |
| E1 | 7.80 | 8.20 | -- |
| e | 4.80 | 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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Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

moschip.ru_6

moschip.ru_9