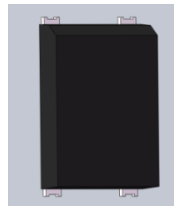


2.5A SURFACE MOUNT FAST GLASS PASSIVATED BRIDGE RECTIFIER
NEW PRODUCT
Product Summary (@ $T_A = +25^\circ\text{C}$)

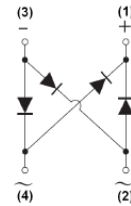
| V_{RRM} (V) | I_O (A) | V_{FM} (V) | I_R (μA) |
|------------------------------|-----------|--------------|-------------------------|
| 1000,800,600, 400,200,100 | 2.5 | 1.3 | 5 |

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



Internal Schematic

Features and Benefits

- Glass Passivated Die Construction
- Miniature Package Saves Space on PC Boards
- Fast Recovery Time for Higher Efficiency
- Low Leakage Current
- Ideal for SMT Manufacturing
- Low Forward Voltage Drop
- Surge Overload Rating to 75A Peak
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

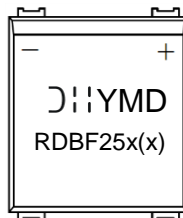
Mechanical Data

- 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 **(e3)**
- Polarity: As Marked on Body
- Weight: 0.02 grams (Approximate)

Ordering Information (Note 4)

| Part Number | Compliance | Case | Packaging |
|-------------|------------|------|-------------------|
| RDBF2510-13 | Commercial | DBF | 3,000/Tape & Reel |
| RDBF258-13 | Commercial | DBF | 3,000/Tape & Reel |
| RDBF256-13 | Commercial | DBF | 3,000/Tape & Reel |
| RDBF254-13 | Commercial | DBF | 3,000/Tape & Reel |
| RDBF252-13 | Commercial | DBF | 3,000/Tape & Reel |
| RDBF251-13 | 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


RDBF25x(x) = Product Type Marking Code
 J||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_A = +25°C, unless otherwise specified.)

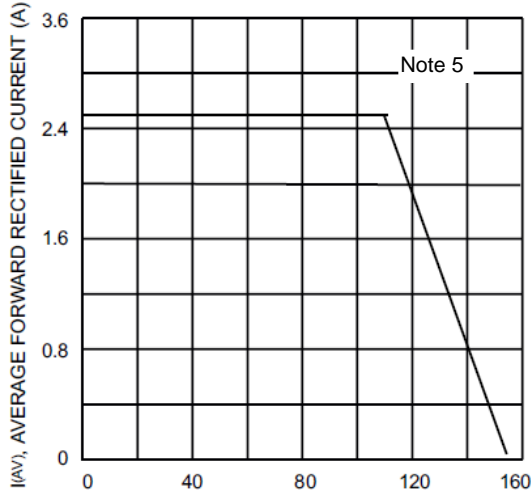
Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

| Characteristic | Symbol | RDBF251 | RDBF252 | RDBF254 | RDBF256 | RDBF258 | RDBF2510 | Unit |
|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|---------|---------|---------|---------|---------|----------|------------------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V _{RRM} V _{RWM} V _R | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| RMS Reverse Voltage | V _{R(RMS)} | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Average Rectified Output Current (Note 5) @ T _C = +110°C | I _O | 2.5 | | | | | | A |
| Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 75 | | | | | | A |
| I ² t Rating for Fusing (1ms < t < 8.3ms) | I ² t | 23.34 | | | | | | A ² S |
| Max 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 At Rated DC Blocking Voltage @T _A =+125°C (Note 8) | I _R | 5.0 | | | 500 | | | μA |
| Total Capacitance (Per Element) (Note 9) | C _T | 30 | | | | | | pF |

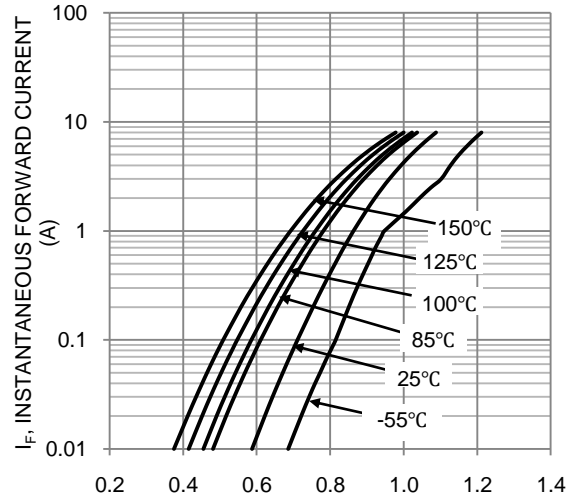
Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---------------------------------------------------------------------------|-----------------------------------|-------------|------|
| Typical Thermal Resistance, Junction to Ambient (Note 6) (Per Element) | R _{θJA} | 35 | °C/W |
| Typical Thermal Resistance, Junction to Case (Per Element) | R _{θJC} | 7.8 | °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 glass epoxy substrate with 1oz/ft², 30mmx30mm copper pad per pin.
 - Measured with I_F = 0.5A, I_R = 1.0A, I_{RR} = 0.25A.
 - Short duration pulse test used to minimize self-heating effect.
 - Measured with V_R = 4.0VDC, f = 1MHz



T_C , CASE TEMPERATURE ($^{\circ}C$)
Fig. 1 Output Current Derating Curve



V_F , INSTANTANEOUS FORWARD VOLTAGE (V)
Fig. 2 Typical Forward Characteristics (Per Leg)

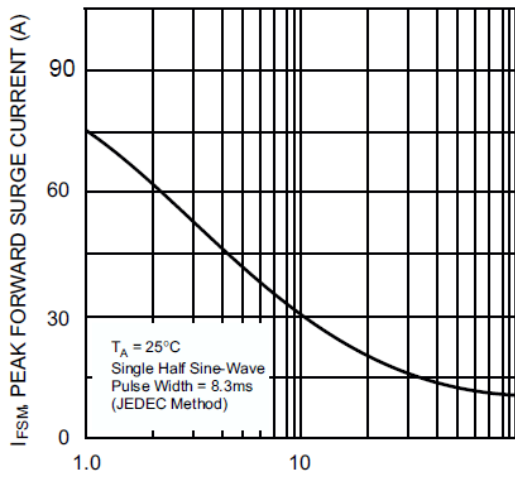


Fig. 3 Maximum Peak Forward Surge Current (per leg)

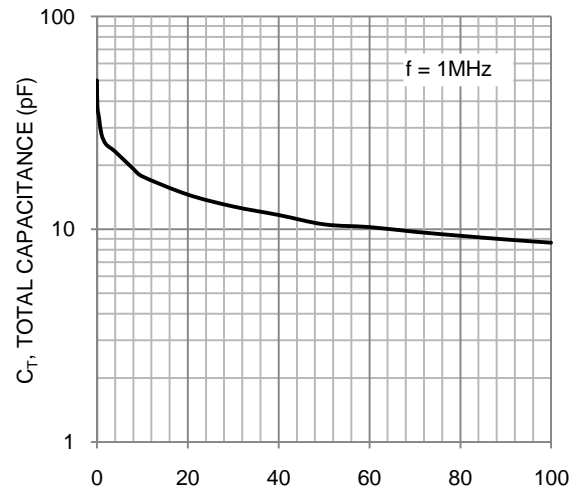


Fig. 4 Typical Junction Capacitance

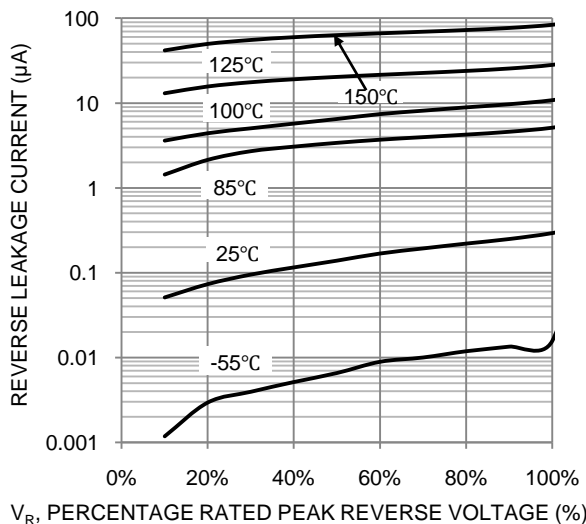


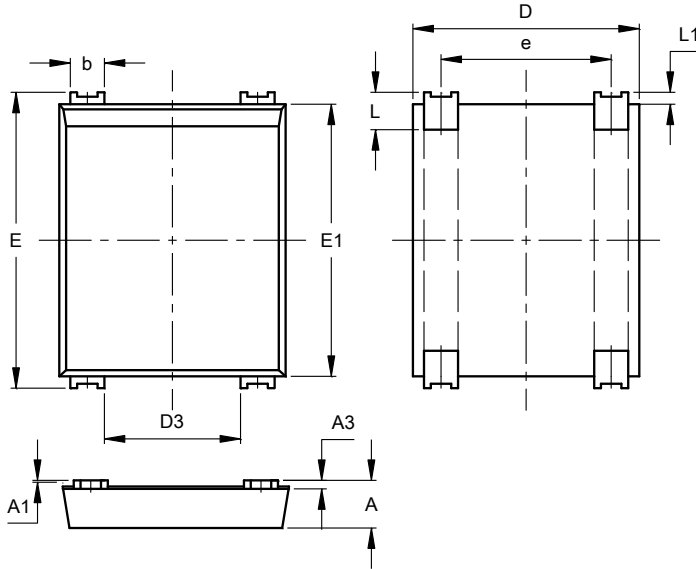
Fig.5 Typical Reverse Characteristics

Package Outline Dimensions

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

NEW PRODUCT

DBF

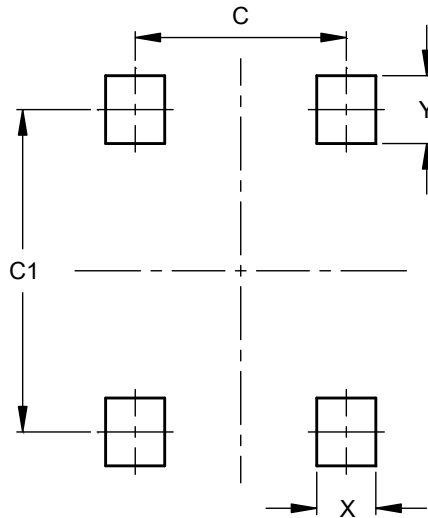


| DBF | | | |
|----------------------|------|------|-----|
| Dim | Min | Max | Typ |
| A | 1.30 | 1.50 | -- |
| A1 | 0.04 | 0.12 | -- |
| A3 | 0.15 | 0.35 | -- |
| b | 0.80 | 1.20 | -- |
| D | 6.45 | 6.85 | -- |
| D3 | 3.80 | 4.20 | -- |
| E | 8.50 | 8.90 | -- |
| E1 | 7.80 | 8.20 | -- |
| e | 4.80 |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