

2.5A SURFACE MOUNT GLASS PASSIVATED BRIDGE RECTIFIER

Product Summary (@T_A = +25°C)

| V _{RRM} (V) | I _O (A) | V _F (V) | I _R (μA) |
|----------------------|--------------------|--------------------|---------------------|
| 1,000 | 2.5 | 1.0 | 5 |

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
- Surge Overload Rating to 80A Peak
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

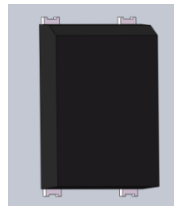
Description and Applications

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

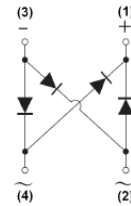
Mechanical Data

- Case: 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: 0.214 grams (Approximate)

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Top View



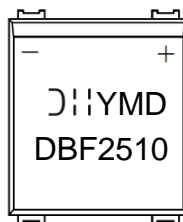
Internal Schematic

Ordering Information (Note 4)

| Part Number | Compliance | Case | Packaging |
|-------------|------------|------|-------------------|
| DBF2510-13 | Commercial | DBF | 3,000/Tape & Reel |

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
 2. See http://www.diodes.com/quality/lead_free.html 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



DBF2510 = Product Type Marking Code
 DII = Manufacturers' Code Marking
 YM = Date Code Marking
 Y = Last Digit of Year (ex: 8 = 2018)
 M = See Month/Code Table Below
 D = Day 1-9 = 1-9; Day 10-31 = A-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 (@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 | Value | Unit |
|--|--|-------|------------------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V _{RRM} V _{RWM} V _R | 1,000 | V |
| RMS Reverse Voltage | V _{R(RMS)} | 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} | 80 | A |
| I ² t Rating for Fusing (1ms < t < 8.3ms) | I ² t | 26.56 | A ² S |

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 |

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|--|--------------------|-------|--------------|-------------|------|---|
| Reverse Breakdown Voltage (Note 7) | V _{(BR)R} | 1,000 | — | — | V | I _R = 5μA |
| Forward Voltage (Per Element) | V _F | — | 0.85 0.93 | 0.95 1.0 | V | I _F = 1.25A, T _A = +25°C I _F = 2.5A, T _A = +25°C |
| Leakage Current (Note 7) (Per Element) | I _R | — | 0.03 15 | 5 500 | μA | V _R = 1,000V, T _A = +25°C V _R = 1,000V, T _A = +125°C |
| Total Capacitance (Per Element) | C _T | — | 30 | — | pF | V _R = 4V, f = 1.0MHz |

- Notes:
- 5. Device mounted on glass epoxy PC board with 1.3mm² solder pad.
 - 6. Device mounted on glass epoxy substrate with 1oz/ft², 30mmx30mm copper pad per pin.
 - 7. Short duration pulse test used to minimize self-heating effect.

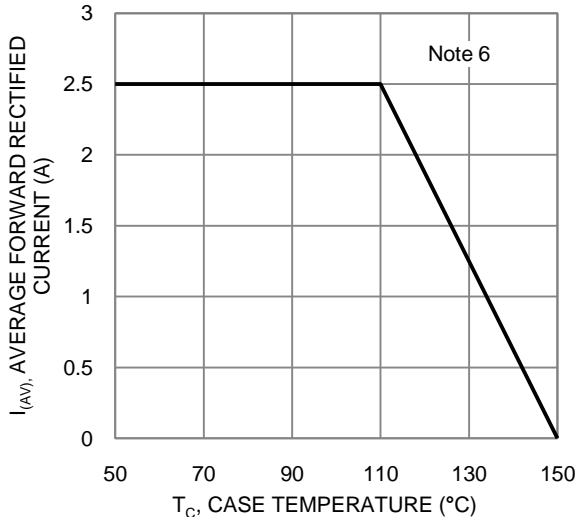


Figure 1. Output Current Derating Curve

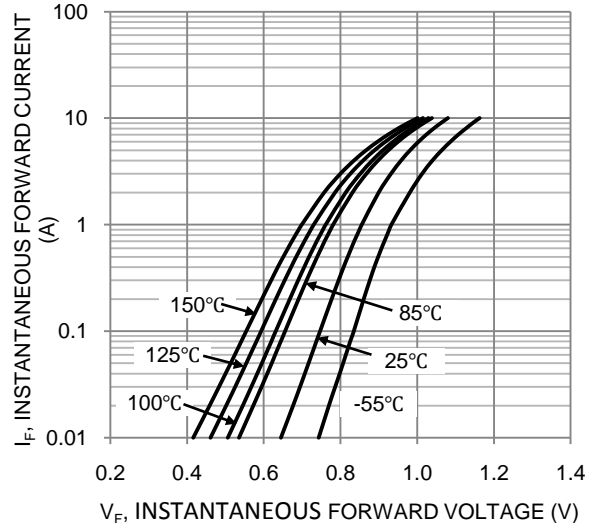


Figure 2. Typical Forward Characteristics (Per Leg)

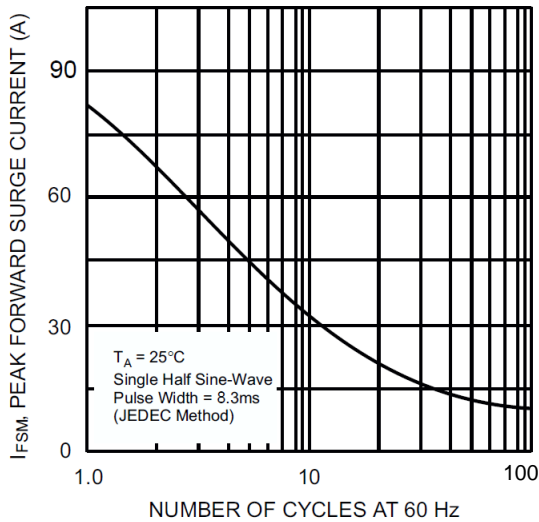


Figure 3. Maximum Peak Forward Surge Current (Per Leg)

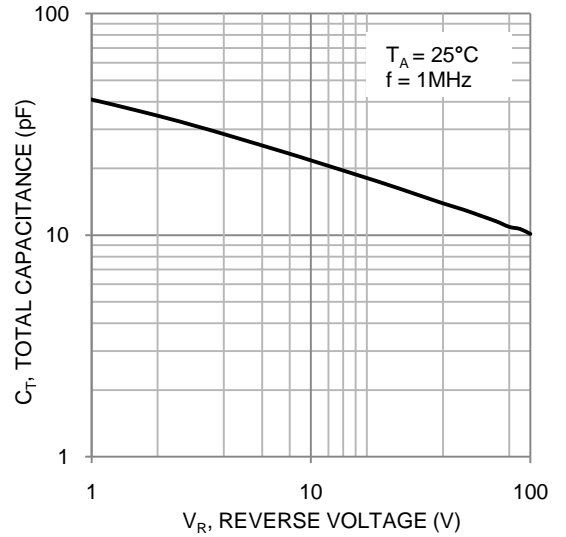


Figure 4. Typical Total Capacitance (Per Leg)

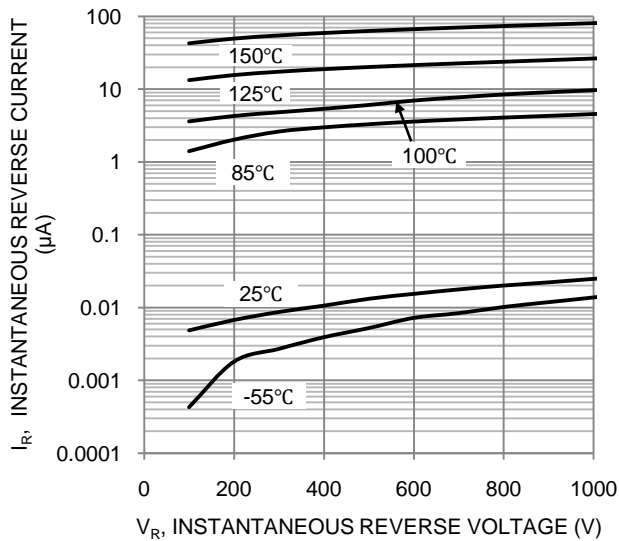


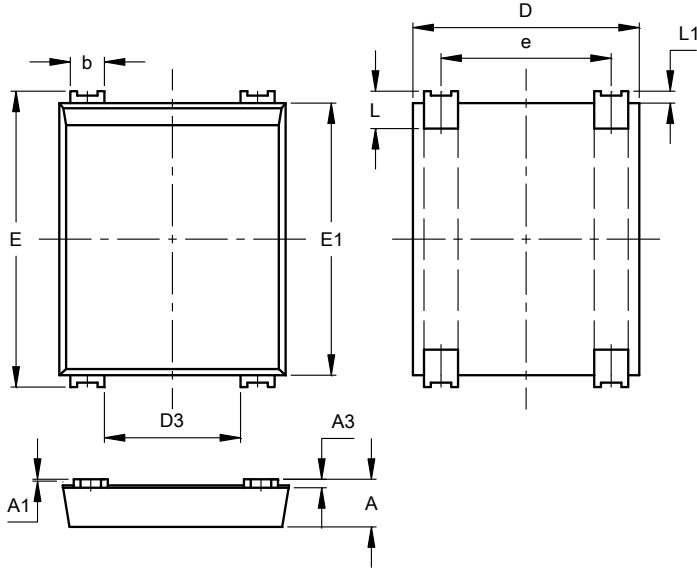
Figure 5. Typical Reverse Characteristics (Per Leg)

Package Outline Dimensions

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

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DBF

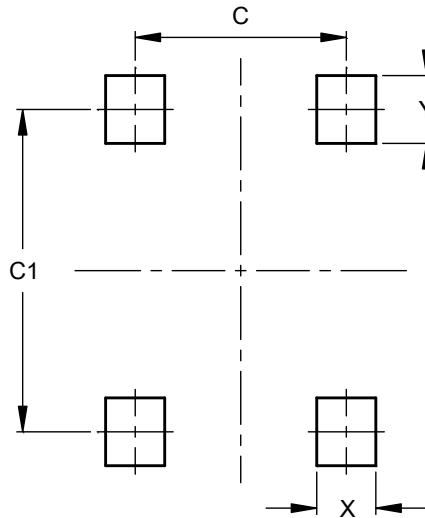


| DBF | | | |
|----------------------|------|------|-----|
| Dim | Min | Max | Typ |
| A | 1.30 | 1.50 | -- |
| A1 | 0.04 | 0.12 | -- |
| A3 | 0.15 | 0.35 | -- |
| b | 0.80 | 1.20 | -- |
| D | 6.45 | 6.85 | -- |
| D3 | 3.80 | 4.20 | -- |
| E | 8.50 | 8.90 | -- |
| E1 | 7.80 | 8.20 | -- |
| e | 4.80 |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