

**1.5A SURFACE MOUNT GLASS PASSIVATED BRIDGE RECTIFIER**
**Product Summary** (@T<sub>A</sub> = +25°C)

V <sub>RRM</sub> (V)	I <sub>O</sub> (A)	V <sub>F</sub> (V)	I <sub>R</sub> (μA)
1,000	1.5	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 70A Peak
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

**Description and Applications**

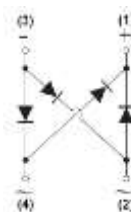
Suitable for AC to DC bridge full wave rectification for SMPS, LED lighting, adapter, battery charger, home appliances, office equipment, and telecommunication applications.

**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
- Polarity: As Marked on Body
- Weight: 0.214 grams (Approximate)



Top View



Internal Schematic

**Ordering Information** (Note 4)

Part Number	Compliance	Case	Packaging
DBF1510U-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](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 <http://www.diodes.com/products/packages.html>.

**Marking Information**


DBF1510U = Product Type Marking Code  
 = Manufacturers' Code Marking  
 YMD = Date Code Marking  
 Y = Last Digit of Year (ex: 7 = 2017)  
 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<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	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	1000	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	700	V
Average Rectified Output Current (Note 5) @ T <sub>C</sub> = +110°C	I <sub>O</sub>	1.5	A
Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	70	A
I <sup>2</sup> t Rating for Fusing (1ms < t < 8.3ms)	I <sup>2</sup> t	20.34	A <sup>2</sup> S

### Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Ambient (Note 6) (Per Element)	R <sub>θJA</sub>	50	°C/W
Typical Thermal Resistance, Junction to Case (Per Element)	R <sub>θJC</sub>	10	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

### Electrical Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	V <sub>(BR)R</sub>	1,000	—	—	V	I <sub>R</sub> = 5μA
Forward Voltage (Per Element)	V <sub>F</sub>	—	0.87 0.94	0.95 1.0	V	I <sub>F</sub> = 0.75A, T <sub>A</sub> = +25°C I <sub>F</sub> = 1.5A, T <sub>A</sub> = +25°C
Leakage Current (Note 7) (Per Element)	I <sub>R</sub>	—	0.03 11	5 500	μA	V <sub>R</sub> = 1,000V, T <sub>A</sub> = +25°C V <sub>R</sub> = 1,000V, T <sub>A</sub> = +125°C
Total Capacitance (Per Element)	C <sub>T</sub>	—	25	—	pF	V <sub>R</sub> = 4V, f = 1.0MHz

- Notes:
5. Device mounted on glass epoxy PC board with 1.3mm<sup>2</sup> solder pad.
  6. Device mounted on glass epoxy substrate with 1oz/ft<sup>2</sup>, 15mmx15mm copper pad per pin.
  7. Short duration pulse test used to minimize self-heating effect.

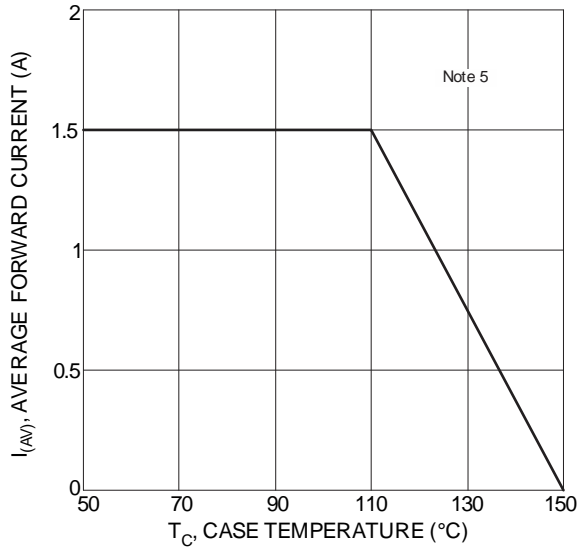


Figure 1 Output Current Derating Curve

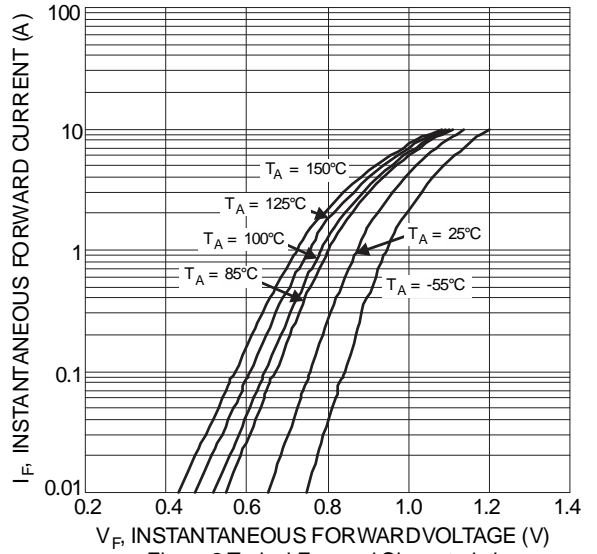


Figure 2 Typical Forward Characteristics

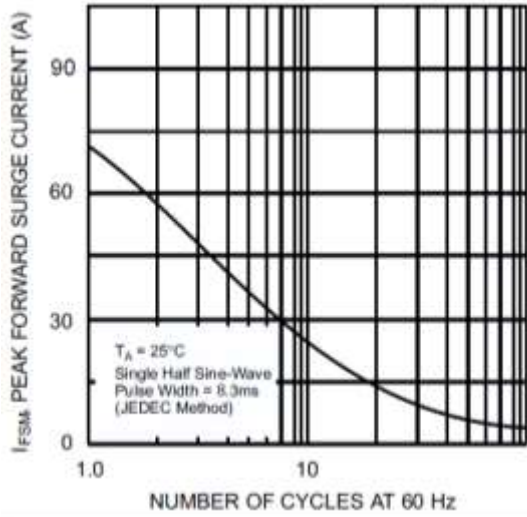


Figure 3 Maximum Peak Forward Surge Current (Per Leg)

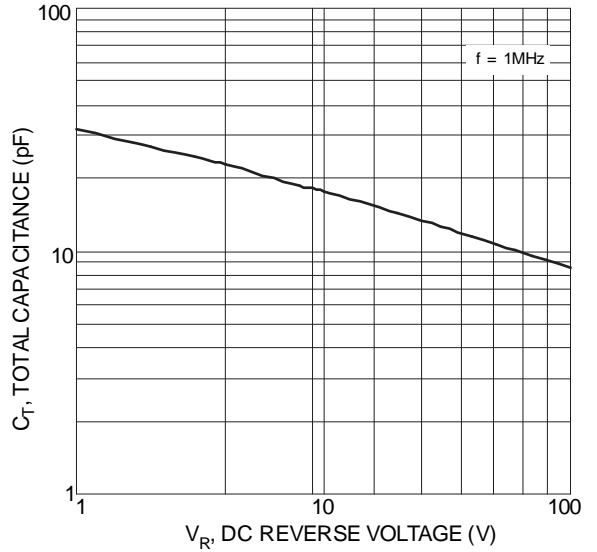


Figure 4 Total Capacitance vs. Reverse Voltage

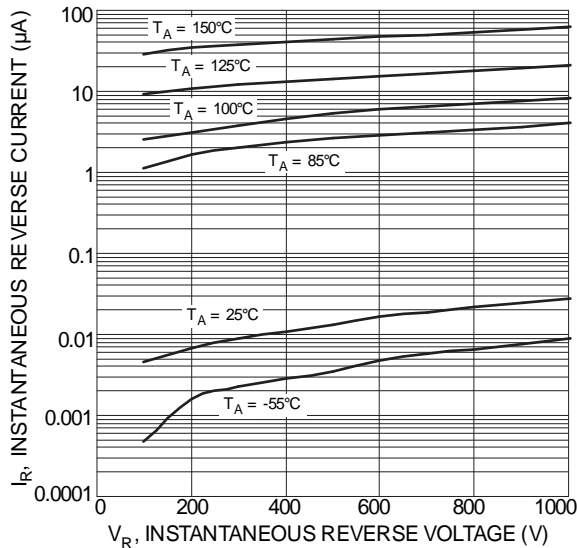
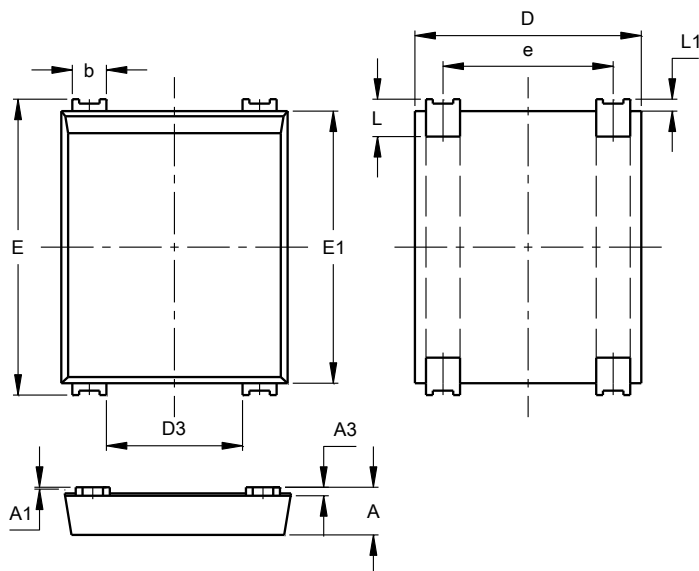


Figure 5 Typical Reverse Characteristics (Per Leg)

**Package Outline Dimensions**

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

DBF

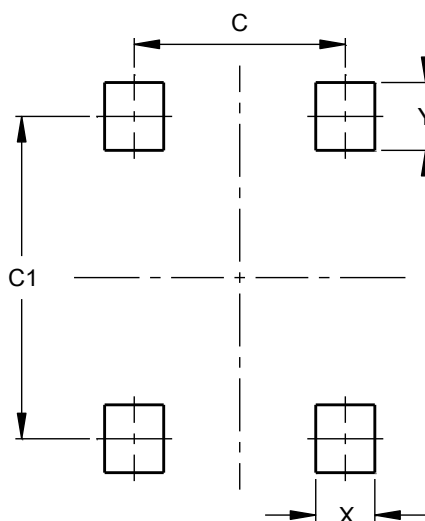


DBF			
Dim	Min	Max	Typ
A	1.30	1.50	--
A1	0.04	0.12	--
A3	0.15	0.35	--
b	0.80	1.20	--
D	6.45	6.85	--
D3	3.80	4.20	--
E	8.50	8.90	--
E1	7.80	8.20	--
e	4.80	5.20	--
L	0.80	1.40	--
L1	0.30	0.40	--
All Dimensions in mm			

**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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