

Product Summary (@ T_A = +25°C)

V _{RRM} (V)	I _O (A)	V _F (V)	I _R (μA)
1,000	1.5	1.0	5

Description and Applications

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

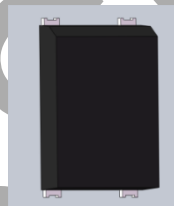
Features and Benefits

- 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)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](#) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

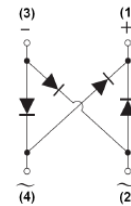
Mechanical Data

- Package: DBF
- Package 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: 0.214 grams (Approximate)

DBF



Top View



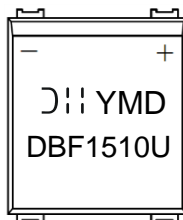
Internal Schematic

Ordering Information (Note 4)

Orderable Part Number	Package	Packing	
		Qty.	Carrier
DBF1510U-13	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



DBF1510U = Product Type Marking Code
 011 = Manufacturers' Code Marking
 YMD = Date Code Marking
 Y = Last Digit of Year (ex: 5 = 2025)
 M = See Month/Code Table Below
 D = Day 1 to 9 = 1 to 9; Day 10 to 31 = A to V

Date Code Key

Year	2016	-	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Code	6	-	5	6	7	8	9	0	1	2	3	4

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	V _{RRM}	1000	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _R		
RMS Reverse Voltage	V _{R(RMS)}	700	V
Average Rectified Output Current (Note 5) @ T _c = +110°C	I _O	1.5	A
Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	70	A
I ² t Rating for Fusing (1ms < t < 8.3ms)	I ² t	20.34	A ² S

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Ambient (Note 6) (Per Element)	R _{θJA}	50	°C/W
Typical Thermal Resistance, Junction to Case (Per Element)	R _{θJC}	10	°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	—	0.87 0.94	0.95 1.0	V	I _F = 0.75A, T _A = +25°C I _F = 1.5A, T _A = +25°C
Leakage Current (Note 7) (Per Element)	I _R	—	0.03 11	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	—	25	—	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, 15mmx15mm copper pad per pin.
 7. Short duration pulse test used to minimize self-heating effect.

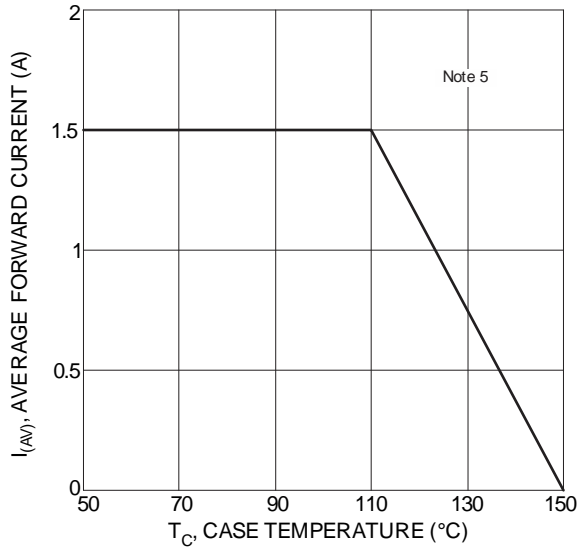


Figure 1 Output Current Derating Curve

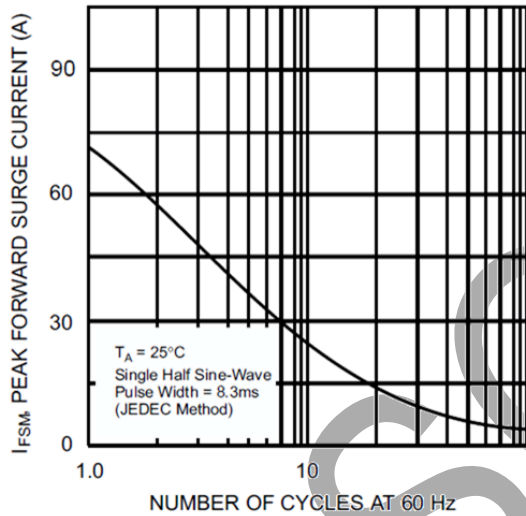


Figure 3 Maximum Peak Forward Surge Current (Per Leg)

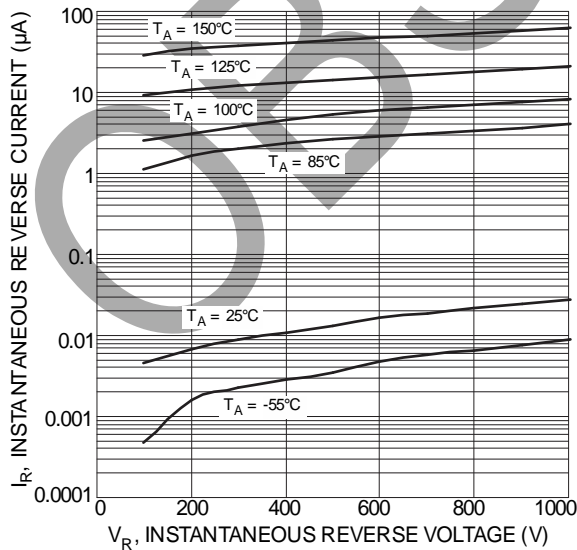


Figure 5 Typical Reverse Characteristics

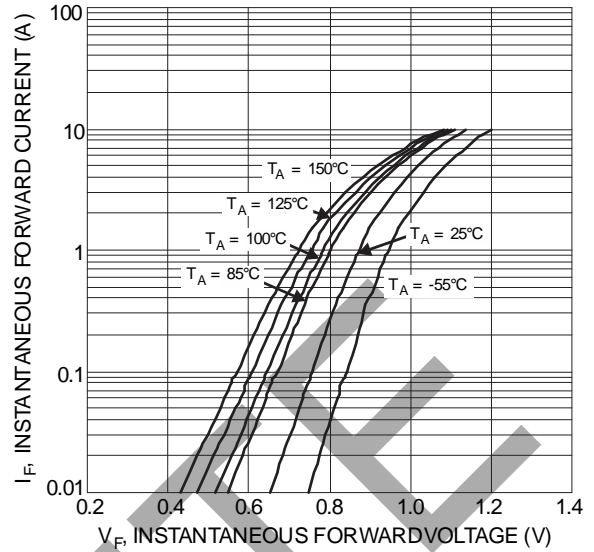


Figure 2 Typical Forward Characteristics

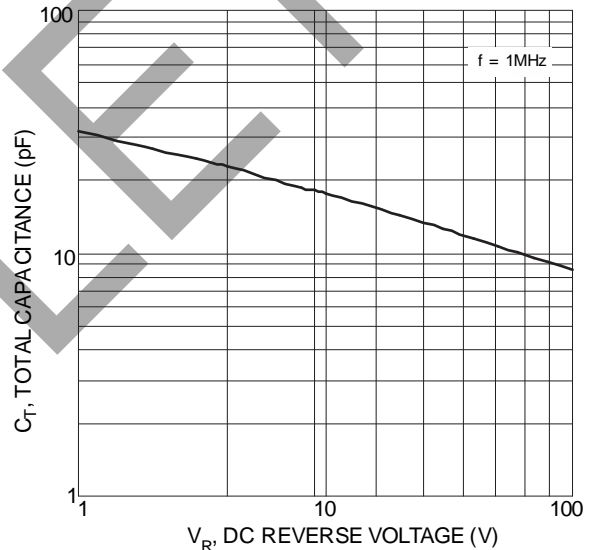
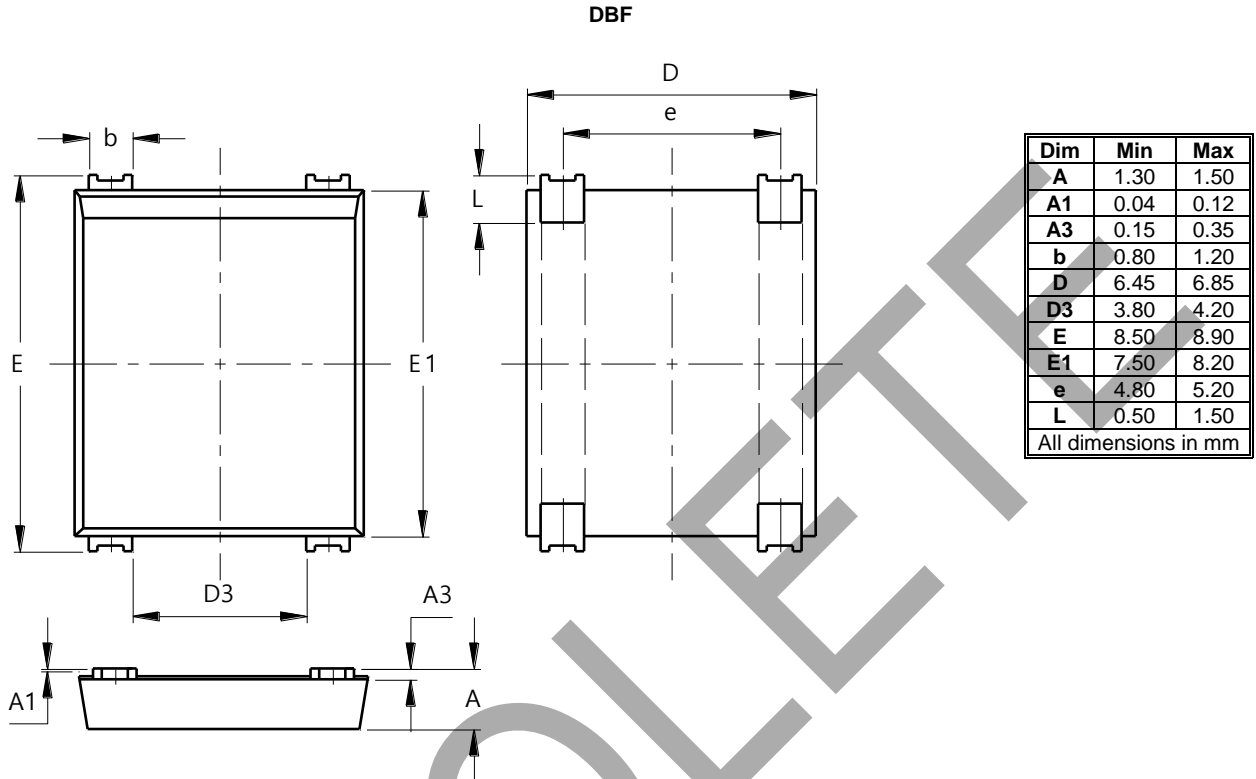


Figure 4 Total Capacitance vs. Reverse Voltage

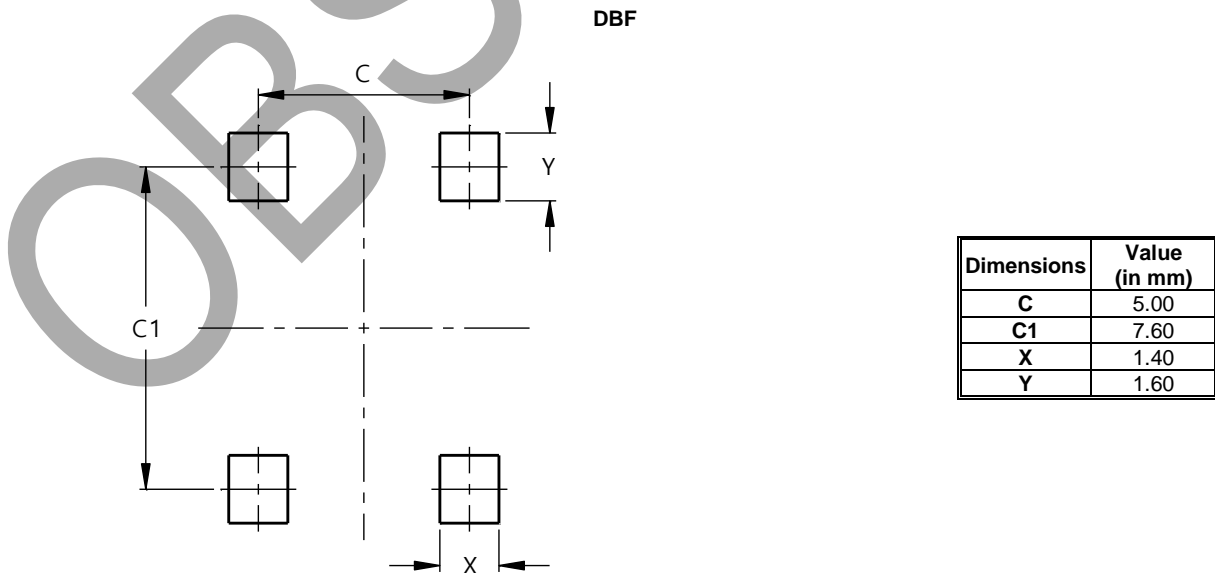
Package Outline Dimensions

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



Suggested Pad Layout

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