3A SURFACE MOUNT BRIDGE RECTIFIER

Product Summary (@ T_A = +25°C)

V_{RRM} (V)	I_O (A)	V_F (V)	I_R (µA)
1,000	3	1.0	5

Features and Benefits

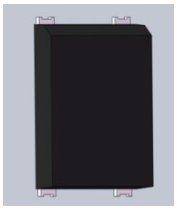
- Glass Passivated Die Construction
- Miniature Package Saves Space on PC Boards
- Low Leakage Current
- Ideal for SMT Manufacturing
- Low Forward Voltage Drop
- Surge Overload Rating to 110A Peak
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please contact us or your local Diodes representative. https://www.diodes.com/quality/product-definitions/**

Description and Applications

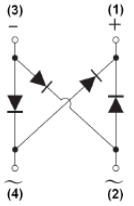
Suitable for AC to DC bridge full wave rectification for SMPS, LED lighting, adapters, battery chargers, home appliances, office equipment, and telecommunication applications.

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)



Top View



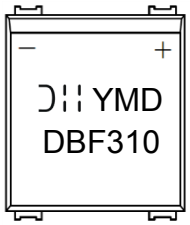
Internal Schematic

Ordering Information (Note 4)

Part Number	Compliance	Case	Packaging
DBF310-13	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



DBF310 = Product Type Marking Code
= Manufacturers' Code Marking
YM = 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_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 = +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}	110	A
I^2t Rating for Fusing (1ms < t < 8.3ms)	I^2t	50.2	A^2S

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Ambient (Note 6) (Per Element)	$R_{\theta JA}$	15	°C/W
Typical Thermal Resistance, Junction to Case (Per Element)	$R_{\theta JC}$	5	°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	— —	0.88 0.93	0.95 1.0	V	I_F = 1.5A, T_A = +25°C I_F = 3A, T_A = +25°C
Leakage Current (Note 7) (Per Element)	I_R	— —	0.07 25	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	—	35	—	pF	V_R = 4V, f = 1.0MHz

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

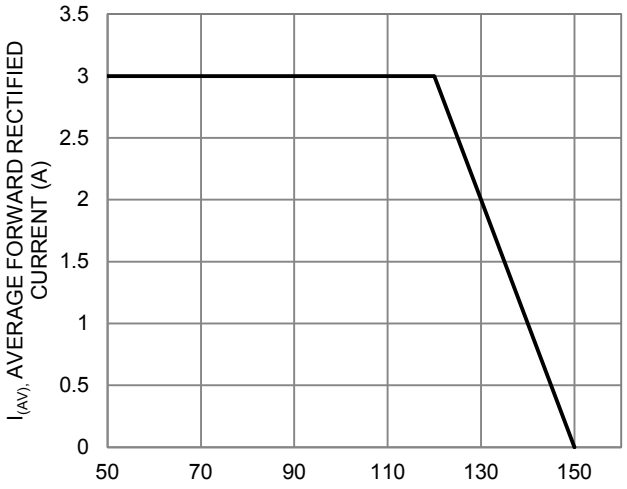


Figure 1. Output Current Derating Curve

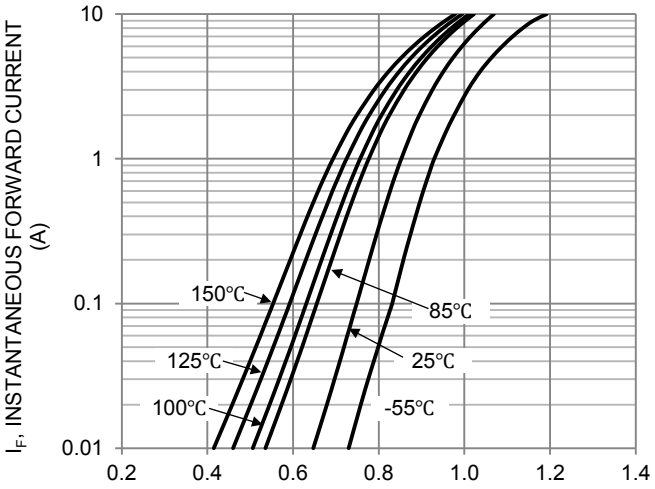


Figure 2. Typical Forward Characteristics (Per Leg)

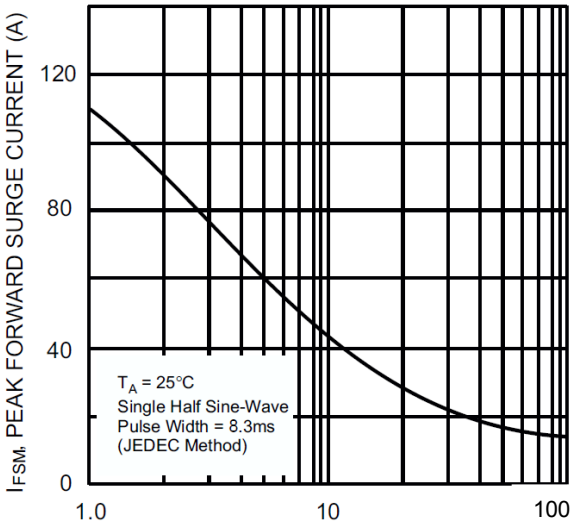


Figure 3. Maximum Peak Forward Surge Current (Per Leg)

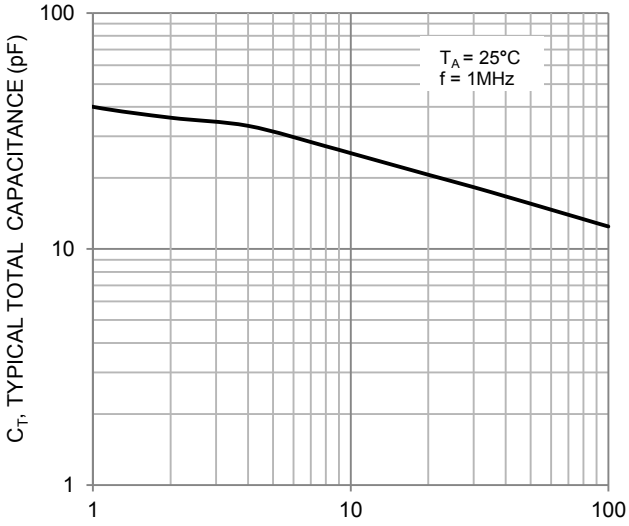


Figure 4. Typical Total Capacitance (Per Leg)

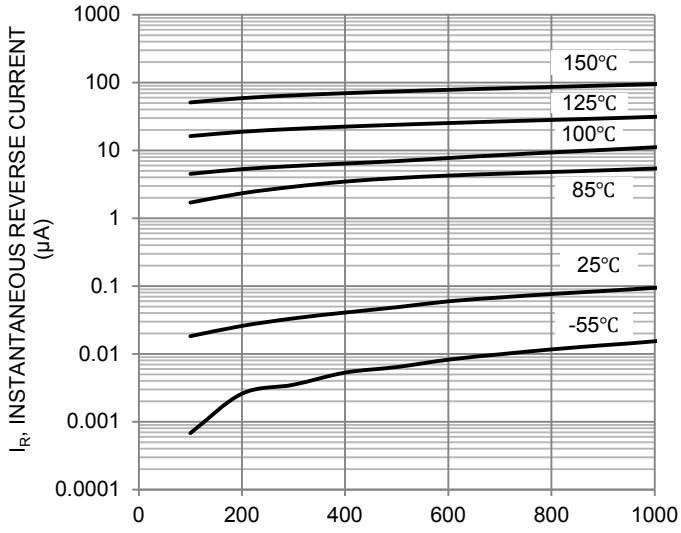
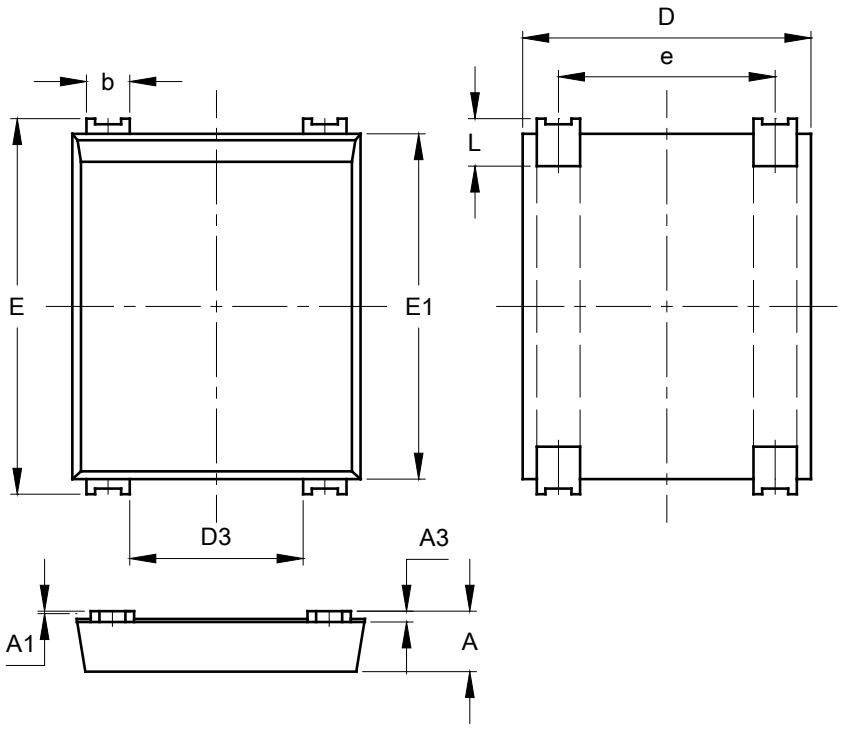


Figure 5. Typical Reverse Characteristics

Package Outline Dimensions

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

DBF



Dim	Min	Max
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	7.50	8.20
e	4.80	5.20
L	0.50	1.50
All dimensions in mm		

Suggested Pad Layout

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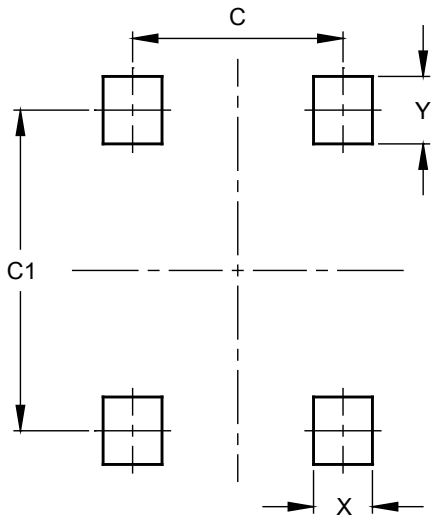

Dimensions	Value (in mm)
C	5.00
C1	7.60
X	1.40
Y	1.60

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