



**THE DATASHEET OF
RDBF310-13**



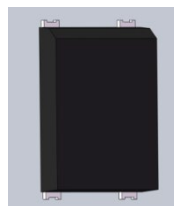
3.0A SURFACE MOUNT FAST BRIDGE RECTIFIER

Product Summary (@ T_A = +25°C)

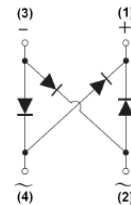
V _{RRM} (V)	I _O (A)	V _{FM} (V)	I _R (μA)
1000, 800, 600, 400, 200, 100	3.0	1.3	5

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.



Top View



Internal Schematic

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
- Fast Recovery Time for Higher Efficiency
- Surge Overload Rating to 100A 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](mailto:contact@diodes.com) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

Mechanical Data

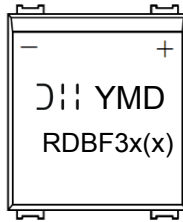
- Case: DBF
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 **(e3)**
- Polarity: As Marked on Body
- Weight: 0.02 grams (Approximate)

Ordering Information (Note 4)

Part Number	Compliance	Case	Packaging
RDBF310-13	Commercial	DBF	3,000/Tape & Reel
RDBF38-13	Commercial	DBF	3,000/Tape & Reel
RDBF36-13	Commercial	DBF	3,000/Tape & Reel
RDBF34-13	Commercial	DBF	3,000/Tape & Reel
RDBF32-13	Commercial	DBF	3,000/Tape & Reel
RDBF31-13	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



RDBF3x(x) = Product Type Marking Code
 D|| = 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	RDBF31	RDBF32	RDBF34	RDBF36	RDBF38	RDBF310	Unit
Peak Repetitive Reverse Voltage	V _{RRM}							
Working Peak Reverse Voltage	V _{RWM}	100	200	400	600	800	1000	V
DC Blocking Voltage	V _R							
RMS Reverse Voltage	V _{R(RMS)}	70	140	280	420	560	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}	100						A
I ² t Rating for Fusing (1ms < t < 8.3ms)	I ² t	41.5						A ² S
Maximum 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	I _R	5.0						μA
At Rated DC Blocking Voltage @T _A =+125°C		500						
Typical Total Capacitance (Per Element) (Note 8)	C _T	45						pF

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Ambient (Note 6) (Per Element)	R _{θJA}	15	°C/W
Typical Thermal Resistance, Junction to Case (Per Element)	R _{θJC}	5	°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 15mmx12mmx1.6mm Al pad attach 195mmx110mmx10mm steel plate.
 - Reverse recovery test conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A
 - Measured at 1.0MHz and applied reverse voltage of 4.0V D.C.

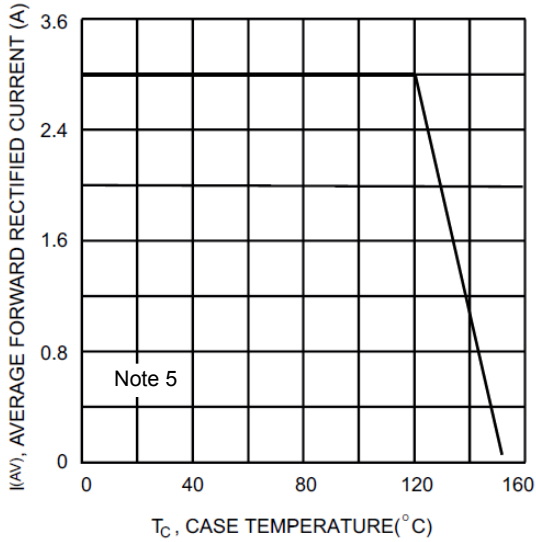


Fig. 1 Output Current Derating Curve

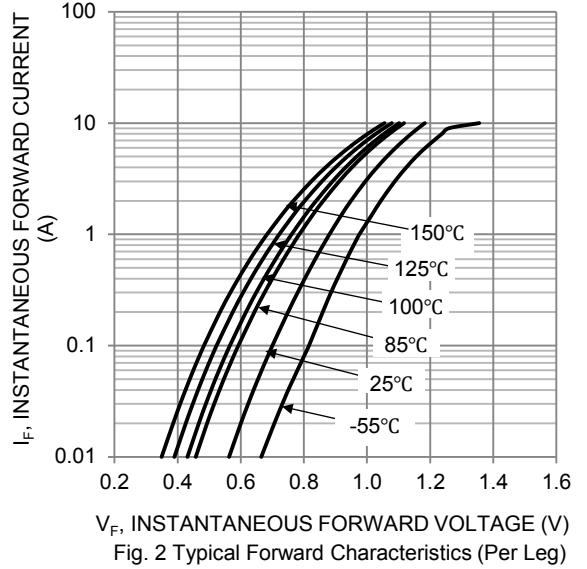


Fig. 2 Typical Forward Characteristics (Per Leg)

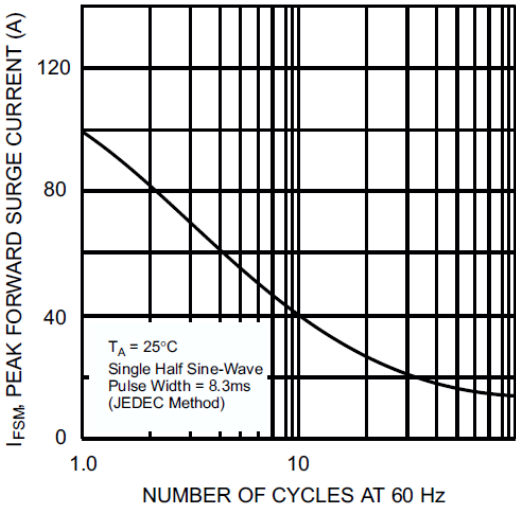


Fig.3 Maximum Non-Repetitive Surge Current

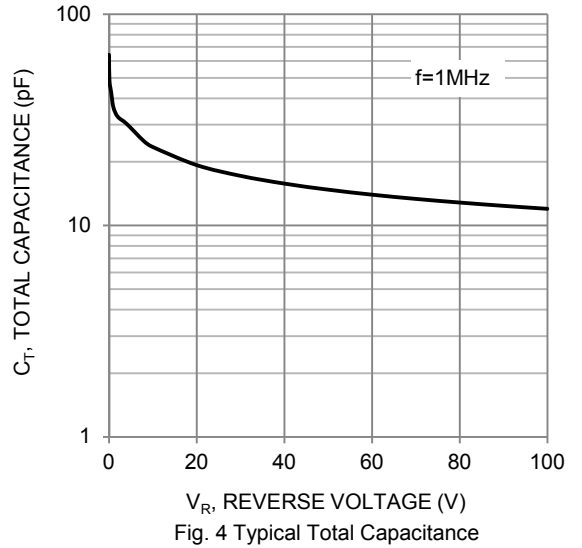


Fig. 4 Typical Total Capacitance

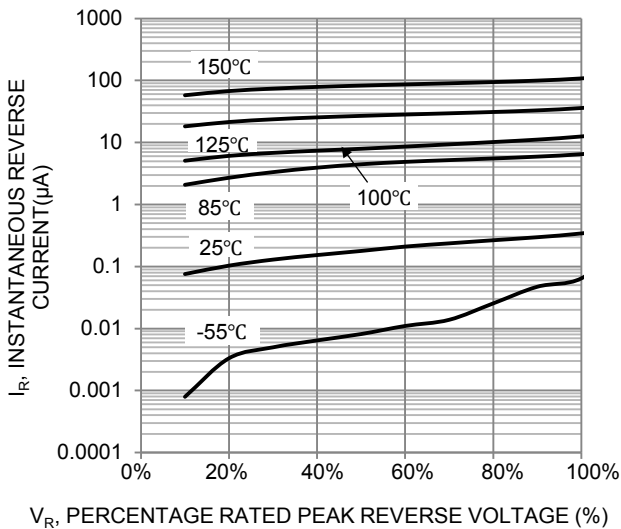
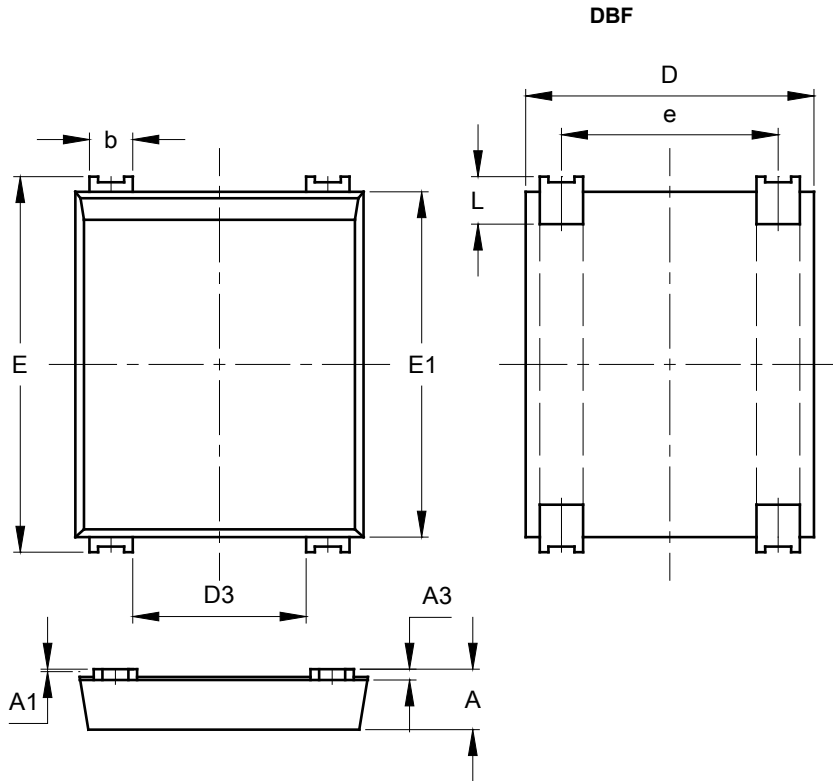


Fig.5 Typical Reverse Characteristics

Package Outline Dimensions

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

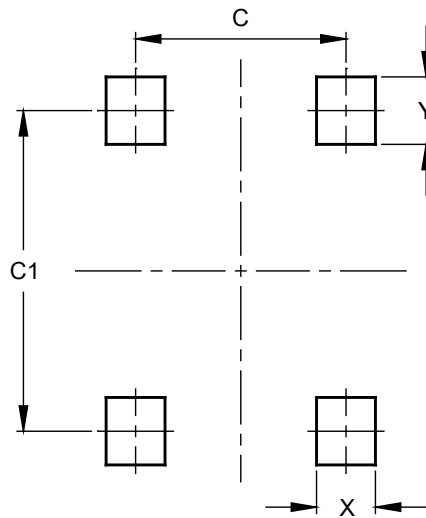


Dim	Min	Max
A	1.30	1.50
A1	0.04	0.12
A3	0.15	0.35
b	0.80	1.20
D	6.45	6.85
D3	3.80	4.20
E	8.50	8.90
E1	7.50	8.20
e	4.80	5.20
L	0.50	1.50
All dimensions in mm		

Suggested Pad Layout

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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