THE RDBF251-RDBF2510 IS OBSOLETE.
PLEASE USE THE MSB30TM.

RDBF251-RDBF2510

2.5A 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	2.5	1.3	5

Features and Benefits

- Glass Passivated Die Construction
- Miniature Package Saves Space on PC Boards
- Fast Recovery Time for Higher Efficiency
- Low-Leakage Current
- Ideal for SMT Manufacturing
- Low-Forward Voltage Drop
- Surge Overload Rating to 75A 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/**

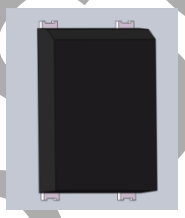
Description and Applications

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

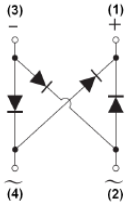
Mechanical Data

- 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 e3
- Polarity: As Marked on Body
- Weight: 0.02 grams (Approximate)

DBF



Top View



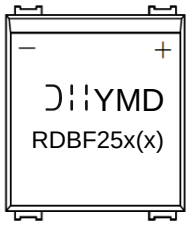
Internal Schematic

Ordering Information (Note 4)

Orderable Part Number	Package	Packing	
		Qty.	Carrier
RDBF2510-13	DBF	3,000	Tape & Reel
RDBF258-13	DBF	3,000	Tape & Reel
RDBF256-13	DBF	3,000	Tape & Reel
RDBF254-13	DBF	3,000	Tape & Reel
RDBF252-13	DBF	3,000	Tape & Reel
RDBF251-13	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



RDBF25x(x) = Product Type Marking Code
= 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 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	RDBF251	RDBF252	RDBF254	RDBF256	RDBF258	RDBF2510	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	100	200	400	600	800	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	70	140	280	420	560	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}	75						A
I^2t Rating for Fusing (1ms < t < 8.3ms)	I^2t	23.34						A^2S
Max 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 At Rated DC Blocking Voltage (Note 8) @T_A=+125°C	I_R	5.0 500						µA
Total Capacitance (Per Element) (Note 9)	C_T	30						pF

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Ambient (Note 6) (Per Element)	$R_{\theta JA}$	35	°C/W
Typical Thermal Resistance, Junction to Case (Per Element)	$R_{\theta JC}$	7.8	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

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, 30mm x 30mm copper pad per pin.
7. Measured with I_F = 0.5A, I_R = 1.0A, I_{RR} = 0.25A.
8. Short duration pulse test used to minimize self-heating effect.
9. Measured with V_R = 4.0VDC, f = 1MHz.

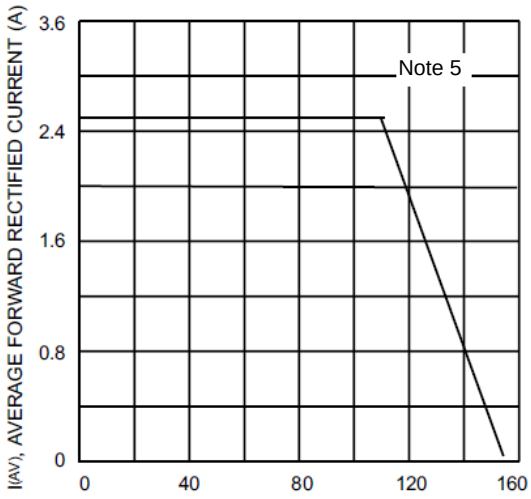


Fig. 1 Output Current Derating Curve

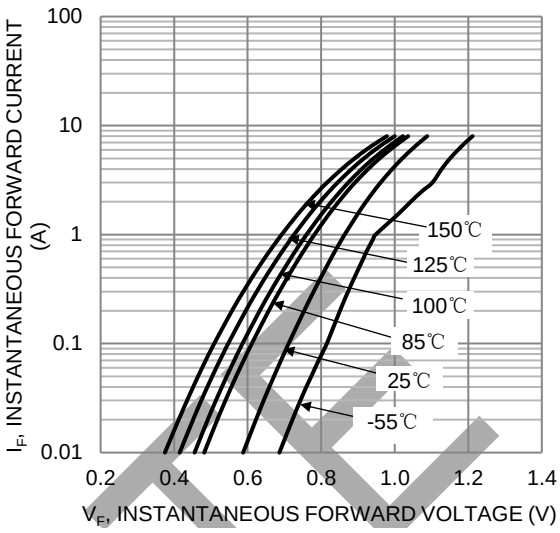


Fig. 2 Typical Forward Characteristics (Per Leg)

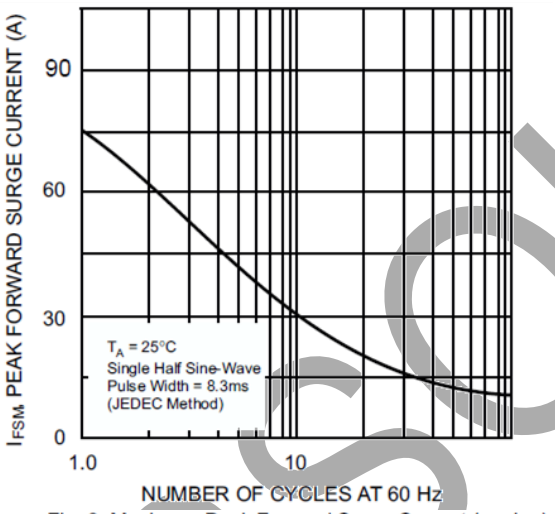


Fig. 3 Maximum Peak Forward Surge Current (per leg)

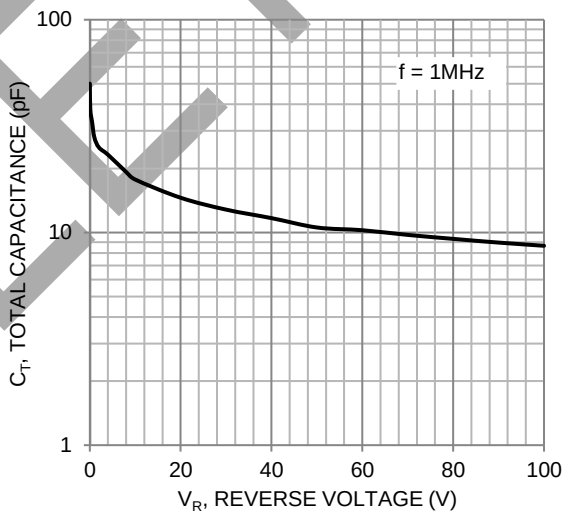


Fig. 4 Typical Junction Capacitance

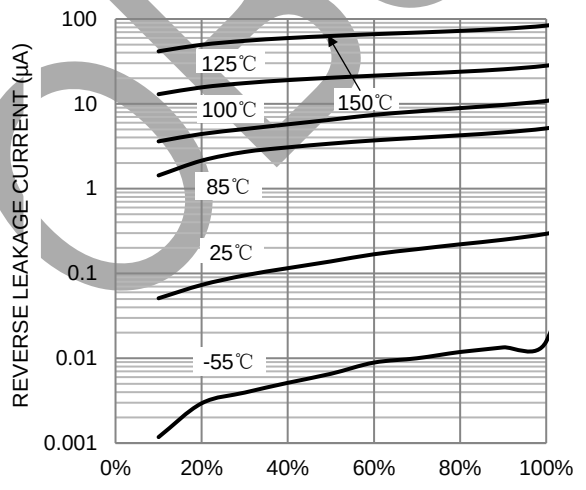
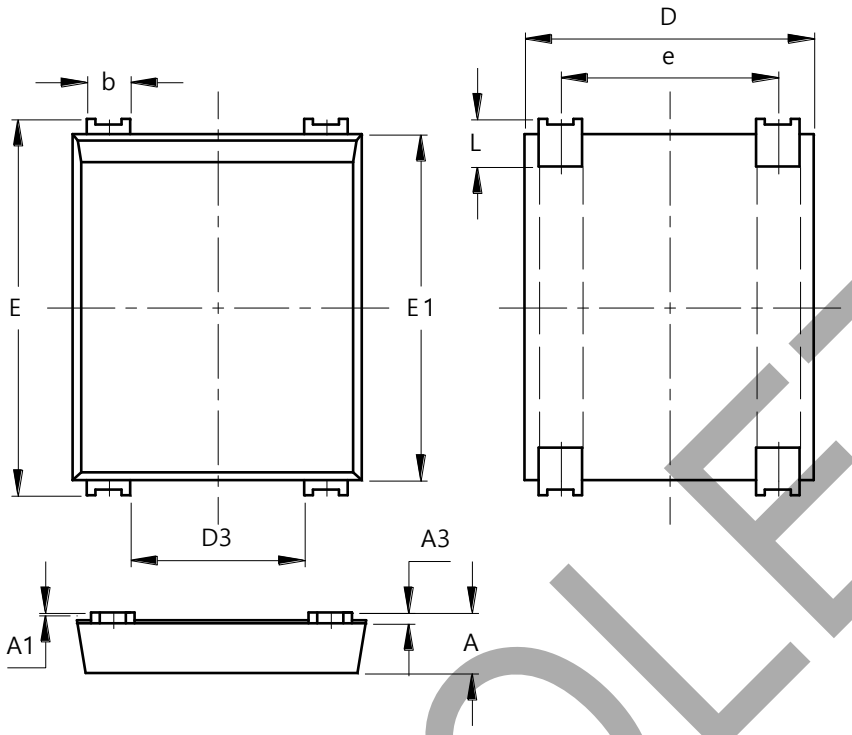


Fig.5 Typical Reverse Characteristics

Package Outline Dimensions

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

DBF

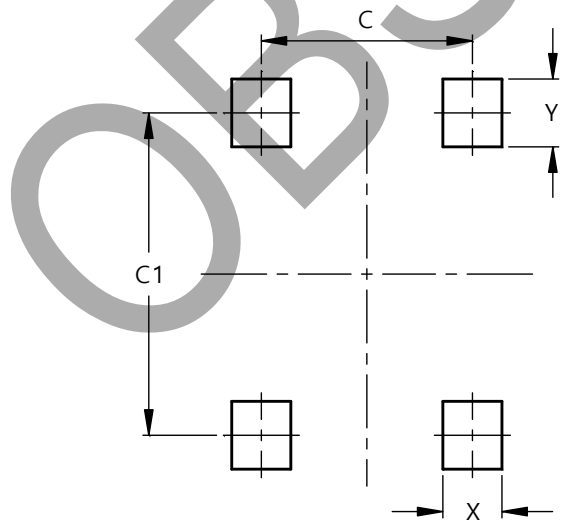


Dim	Min	Max
A	1.30	1.50
A1	0.04	0.12
A3	0.15	0.35
b	0.80	1.20
D	6.45	6.85
D3	3.80	4.20
E	8.50	8.90
E1	7.50	8.20
e	4.80	5.20
L	0.50	1.50
All dimensions in mm		

Suggested Pad Layout

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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