



**THE DATASHEET OF  
RABF1510-13**



**Product Summary** (@T<sub>A</sub> = +25°C)

Part Number	V <sub>RRM</sub> (V)	I <sub>O</sub> (A)	V <sub>F</sub> (V)	I <sub>R</sub> (μA)
RABF152-13	200	1.5	1.3	5
RABF154-13	400	1.5	1.3	5
RABF156-13	600	1.5	1.3	5
RABF158-13	800	1.5	1.3	5
RABF1510-13	1000	1.5	1.3	5

**Features and Benefits**

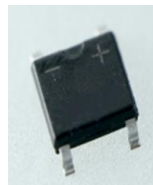
- Glass Passivated Die Construction
- Miniature Package Saves Space on PC Boards
- High Current Capability
- Fast Recovery Time for Higher Efficiency
- Ideal for SMT Manufacturing
- Low Forward Voltage Drop
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

**Description and Applications**

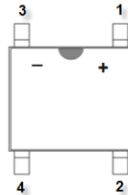
Suitable for AC to DC bridge full wave rectification for SMPS, LED lighting, adapter, battery charger, home appliances, office equipment, and telecommunication applications.

**Mechanical Data**

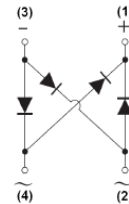
- Case: SOPA-4 (Type B)
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 Ⓔ3
- Polarity: As Marked on Body
- Weight: 0.02 grams (Approximate)



Top View



Pin Diagram

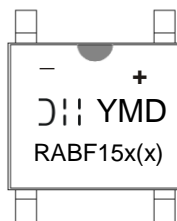


Internal Schematic

**Ordering Information** (Note 4)

Part Number	Compliance	Case	Packaging
RABF1510-13	Commercial	SOPA-4 (Type B)	5,000/Tape & Reel
RABF158-13	Commercial	SOPA-4 (Type B)	5,000/Tape & Reel
RABF156-13	Commercial	SOPA-4 (Type B)	5,000/Tape & Reel
RABF154-13	Commercial	SOPA-4 (Type B)	5,000/Tape & Reel
RABF152-13	Commercial	SOPA-4 (Type B)	5,000/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 [http://www.diodes.com/quality/lead\\_free/](http://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**


RABF15x(x)= Product Type Marking Code  
 DII= 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<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	RABF152	RABF154	RABF156	RABF158	RABF1510	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	200	400	600	800	1000	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	140	280	420	560	700	V
Average Rectified Output Current (Note 5) @ T <sub>C</sub> = +100°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>	50					A
I <sup>2</sup> t Rating for Fusing (1ms < t < 8.3ms)	I <sup>2</sup> t	10.375					A <sup>2</sup> s
Maximum Forward Voltage (Per Element) @ I <sub>F</sub> =1.5A	V <sub>FM</sub>	1.3					V
Maximum Reverse Recovery Time (Note 6)	t <sub>RR</sub>	150	150	250	500	500	ns
Peak Reverse Current @ T <sub>A</sub> =+25°C	I <sub>R</sub>	5.0					μA
At Rated DC Blocking Voltage (Note 7) @ T <sub>A</sub> =+125°C		200					
Typical Total Capacitance (Per Element) (Note 8)	C <sub>T</sub>	17					ns

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Ambient (Note 5) (Per Element)	R <sub>θJA</sub>	80	°C/W
Typical Thermal Resistance, Junction to Lead (Per Element)	R <sub>θJL</sub>	25	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

- Notes:
5. Device mounted on aluminum substrate PC board with 1.3mm<sup>2</sup> solder pad.
  6. Reverse Recovery Test Conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A.
  7. Short duration pulse test used to minimize self-heating effect.
  8. Measured at 1.0MHz and applied reverse voltage of 4.0V D.C.

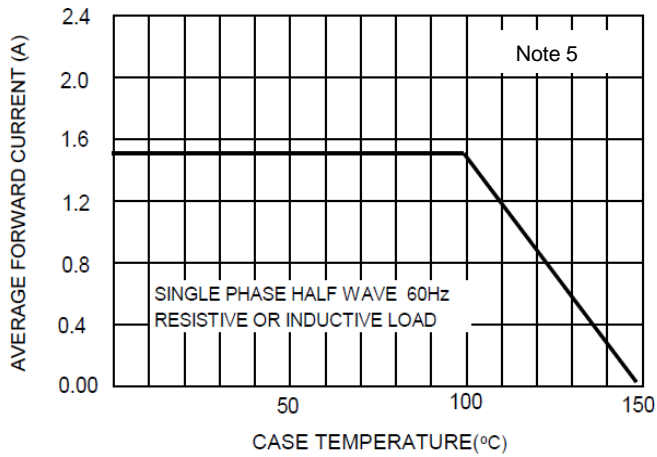


Figure 1. FORWARD CURRENT DERATING

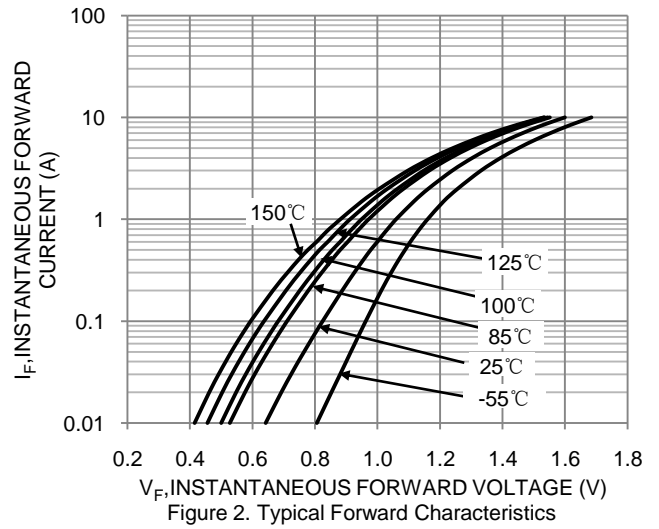


Figure 2. Typical Forward Characteristics

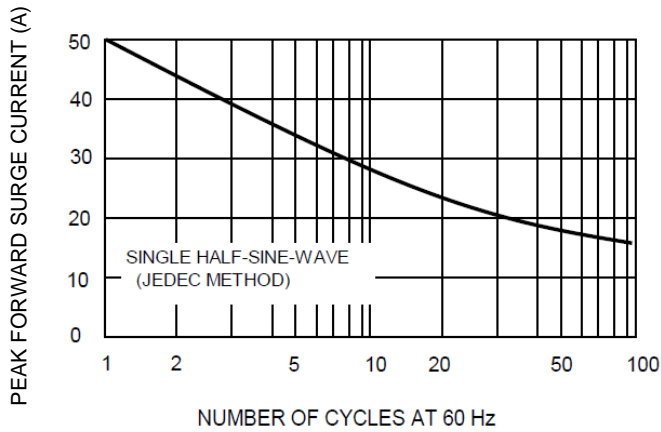


Figure 3. MAXIMUM NON-REPETITIVE SURGE CURRENT

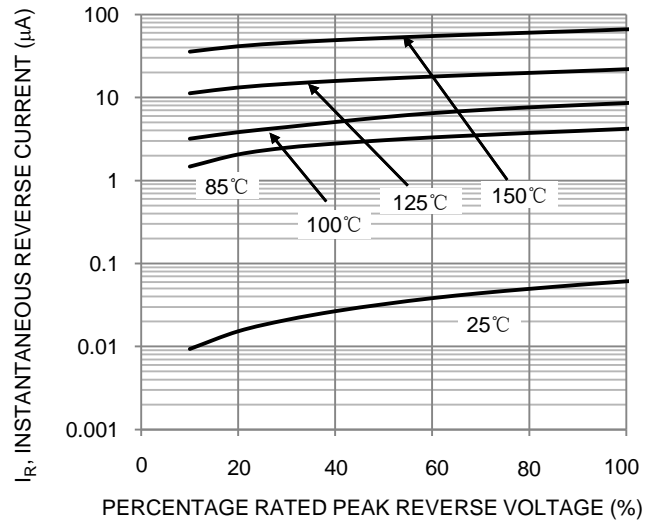


Figure 4. Typical Reverse Characteristics

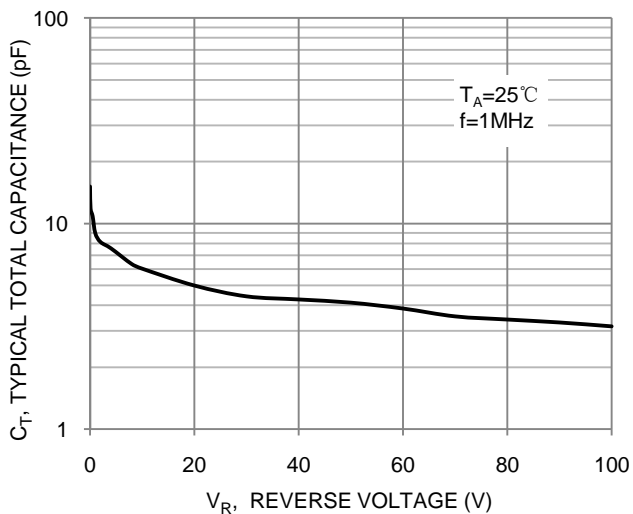
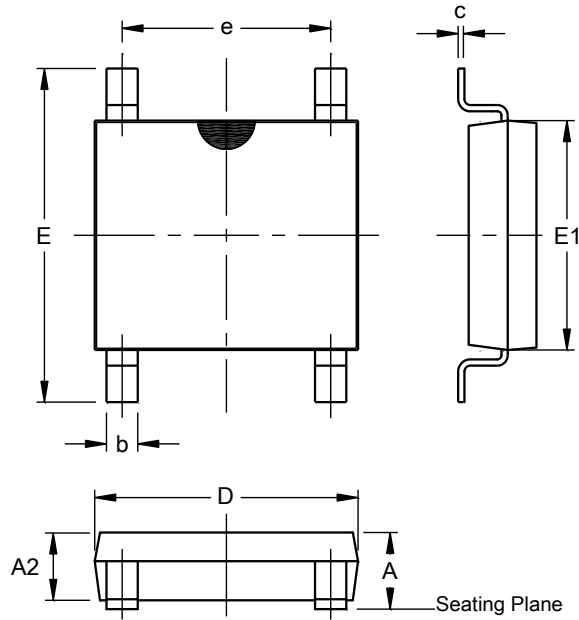


Figure 5. Typical Total Capacitance (Per Element)

**Package Outline Dimensions**

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

SOPA-4 (Type B)

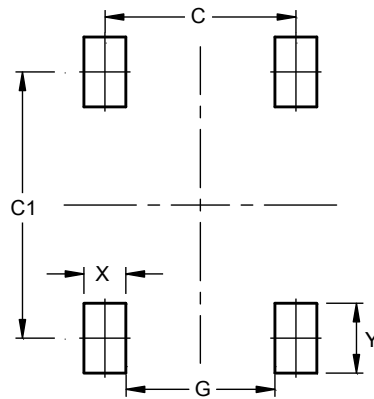


SOPA-4 (Type B)			
Dim	Min	Max	Typ
A	1.15	1.30	--
A2	1.00	1.25	--
b	0.50	0.70	--
c	0.15	0.25	--
D	4.80	5.30	--
E	6.00	6.80	--
E1	4.20	4.60	--
e	3.80	4.20	--
All Dimensions in mm			

**Suggested Pad Layout**

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

SOPA-4 (Type B)



Dimensions	Value (in mm)
C	4.10
C1	5.72
G	3.20
X	0.90
Y	1.50

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