

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

V <sub>RRM</sub> (V)	I <sub>O</sub> (A)	V <sub>F</sub> (V)	I <sub>R</sub> (μA)
1000	1.5	1.3	5

## 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.

## Features and Benefits

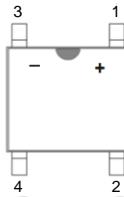
- Glass Passivated Die Construction
- Miniature Package Saves Space on PC Boards, Low Profile
- High Current Capability
- Ultrafast Recovery Time for Higher Efficiency
- Ideal for SMT Manufacturing
- Low Forward Voltage Drop
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony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

## Mechanical Data

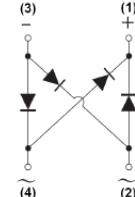
- Case: SOPA-4 (Type B)
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208③
- Polarity: As Marked on Body
- Weight: 0.089 grams (Approximate)



Top View



Pin Diagram



Internal Schematic

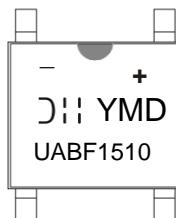
## Ordering Information (Note 4)

Part Number	Compliance	Case	Packaging
UABF1510-13	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 <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



UABF1510 = 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 (@ $T_A = +25^\circ\text{C}$ , 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	$V_{RRM}$		
Working Peak Reverse Voltage	$V_{RWM}$	1000	V
DC Blocking Voltage	$V_R$		
RMS Reverse Voltage	$V_R(\text{RMS})$	700	V
Average Rectified Output Current (Note 5) @ $T_C = +100^\circ\text{C}$	$I_O$	1.5	A
Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load	$I_{FSM}$	50	A
$I^2t$ Rating for Fusing (1ms < $t$ < 8.3ms)	$I^2t$	10.375	$\text{A}^2\text{s}$
Maximum Forward Voltage (Per Element) @ $I_F = 1.5\text{A}$	$V_{FM}$	1.3	V
Maximum Reverse Recovery Time (Note 6)	$t_{RR}$	160	ns
Peak Reverse Current @ $T_A = +25^\circ\text{C}$ At Rated DC Blocking Voltage (Note 7) @ $T_A = +125^\circ\text{C}$	$I_R$	5.0 200	$\mu\text{A}$
Typical Total Capacitance (Per Element) (Note 8)	$C_T$	17	pF

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Ambient (Note 5) (Per Element)	$R_{\theta JA}$	80	$^\circ\text{C}/\text{W}$
Typical Thermal Resistance, Junction to Lead (Per Element)	$R_{\theta JL}$	25	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

Notes: 5. Device mounted on aluminum substrate PC board with 1.3mm<sup>2</sup> solder pad.

6. Reverse Recovery Test Conditions:  $I_F = 0.5\text{A}$ ,  $I_R = 1.0\text{A}$ ,  $I_{RR} = 0.25\text{A}$ .

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.

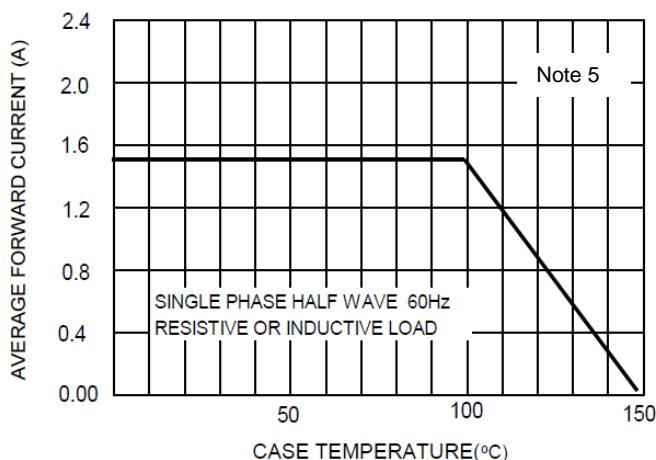


Figure 1. Forward Current Derating Curve

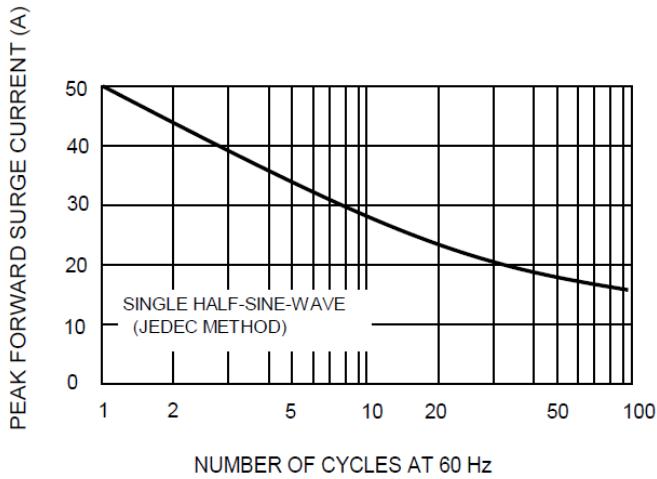


Figure 3. Maximum Non-Repetitive Surge Current

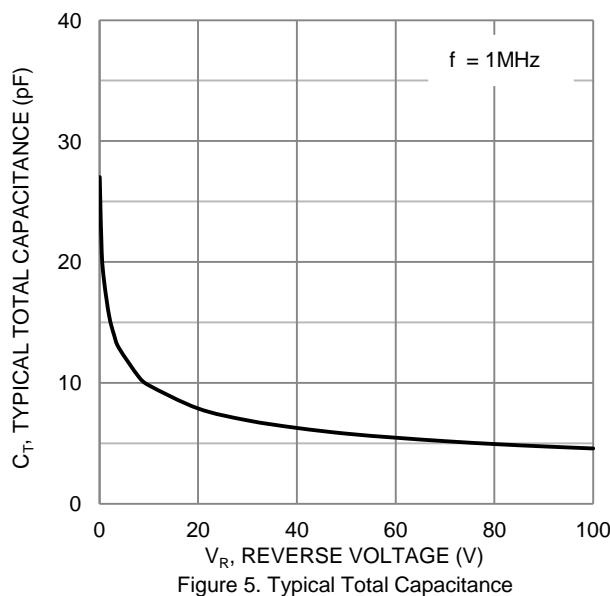


Figure 5. Typical Total Capacitance

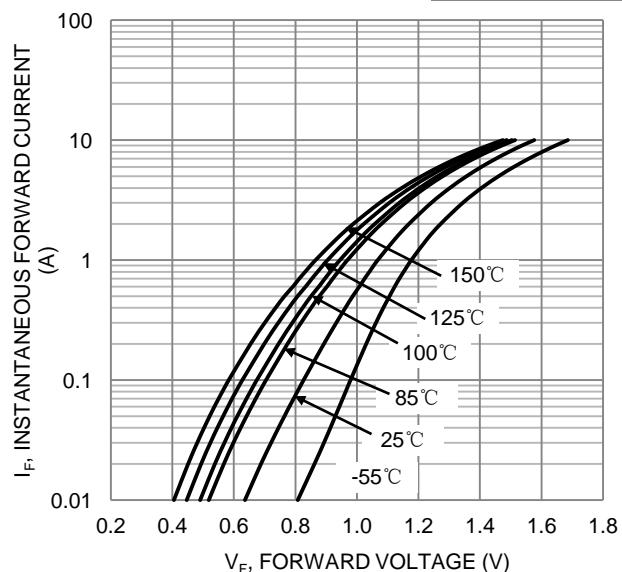


Figure 2. Typical Forward Characteristics

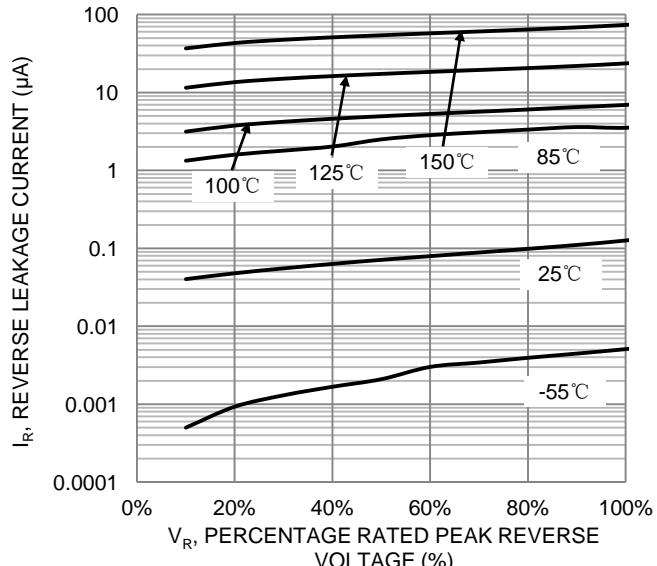
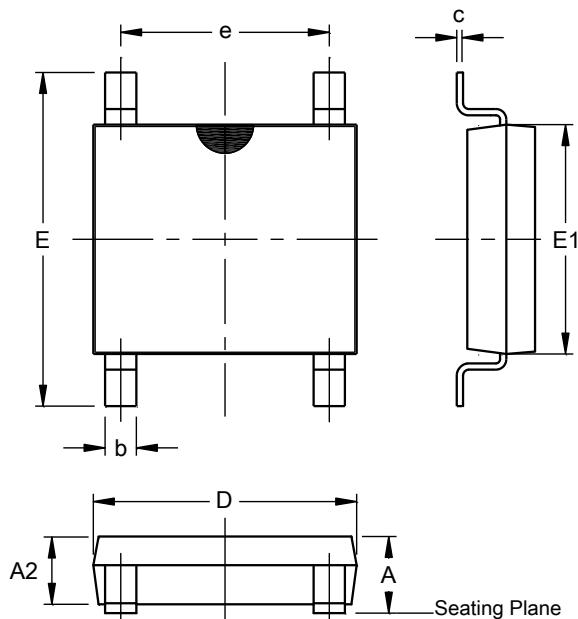


Figure 4. Typical Reverse Characteristics

## Package Outline Dimensions

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

**SOPA-4 (Type B)**



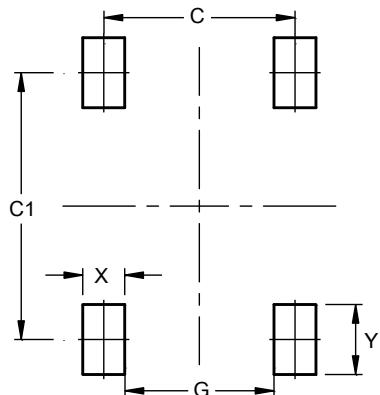
<b>SOPA-4 (Type B)</b>			
Dim	Min	Max	Typ
A	1.15	1.30	--
A2	1.00	1.25	--
b	0.50	0.70	--
c	0.15	0.25	--
D	4.80	5.30	--
E	6.00	6.80	--
E1	4.20	4.60	--
e	3.80	4.20	--

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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