

## 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	4	1.3	5

## Features and Benefits

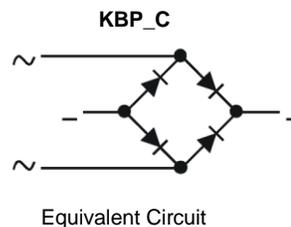
- Glass Passivated Die Construction
- Filter Rectifier with EMI Design Friendly
- Rated at 1000V PRV
- Low Reverse Leakage Current
- Surge Overload Rating to 100A Peak
- Ideal for Printed Circuit Board Applications
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" 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 AC-DC power supply, LED lighting, home appliances, office equipment, and telecommunication applications.

## Mechanical Data

- Case: KBP\_C
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Terminals: Finish – Tin. Plated Leads, Solderable per MIL-STD-202, Method 208 (Ⓢ)
- Polarity: Marked on Body
- Weight: 1.265 grams (Approximate)

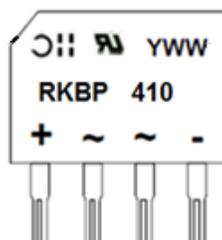


## Ordering Information (Note 4)

Part Number	Compliance	Case	Packaging
RKBP410	Commercial	KBP_C	35 Pieces per Tube

- 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



RKBP410 = Product Type Marking Code  
 311 = Manufacturer's Code Marking  
 YWW = Date Code Marking  
 Y = Last Digit of Year (ex: 1 = 2021)  
 WW = Week Code (01 to 53)

## Maximum Ratings (@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	Value	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	1000	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
Average Rectified Output Current @T <sub>C</sub> = +105°C	I <sub>O</sub>	4	A
Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	100	A
I <sup>2</sup> t Rating for Fusing (3ms ≤ t ≤ 8.3ms)	I <sup>2</sup> t	41.5	A <sup>2</sup> s

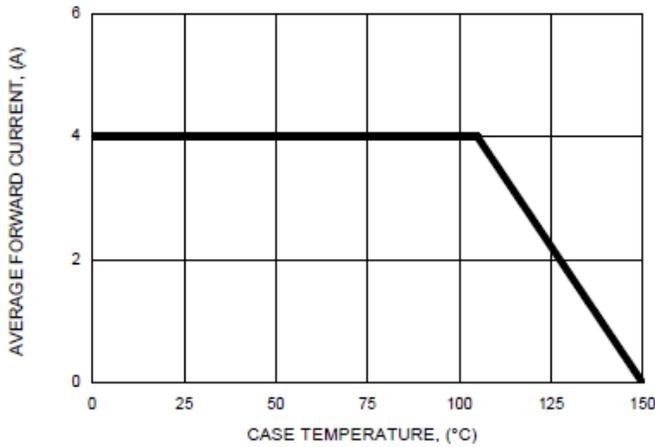
## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Case (Note 5)	R <sub>θJC</sub>	5	°C/W
Typical Thermal Resistance, Junction to Lead (Note 5)	R <sub>θJL</sub>	7	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

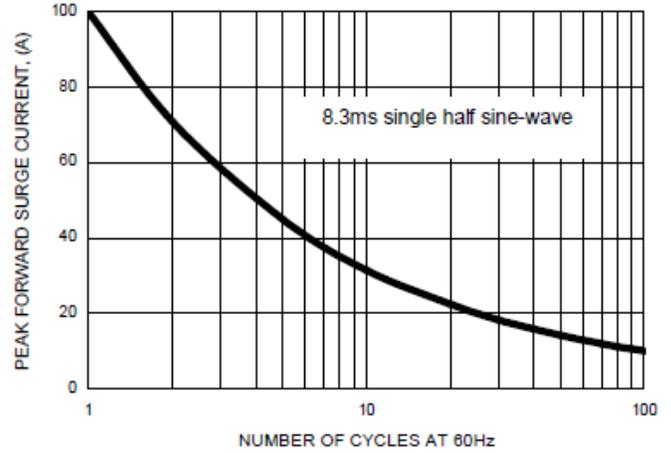
## Electrical Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	V <sub>(BR)R</sub>	1,000	—	—	V	I <sub>R</sub> = 5μA
Forward Voltage Drop per Element (Note 7)	V <sub>F</sub>	—	— 1.0	1.3 —	V	I <sub>F</sub> = 4A, T <sub>J</sub> = +25°C I <sub>F</sub> = 4A, T <sub>J</sub> = +125°C
Leakage Current (Note 6)	I <sub>R</sub>	—	— 61	5 200	μA	V <sub>R</sub> = 1000V, T <sub>J</sub> = +25°C V <sub>R</sub> = 1000V, T <sub>J</sub> = +125°C
Reverse Recovery Time	t <sub>RR</sub>	—	—	250	ns	I <sub>F</sub> = 0.5A, I <sub>RR</sub> = 0.25A, I <sub>R</sub> = 1.0A
Total Capacitance per Element	C <sub>T</sub>	—	40	—	pF	V <sub>R</sub> = 4V <sub>DC</sub> , f = 1MHz

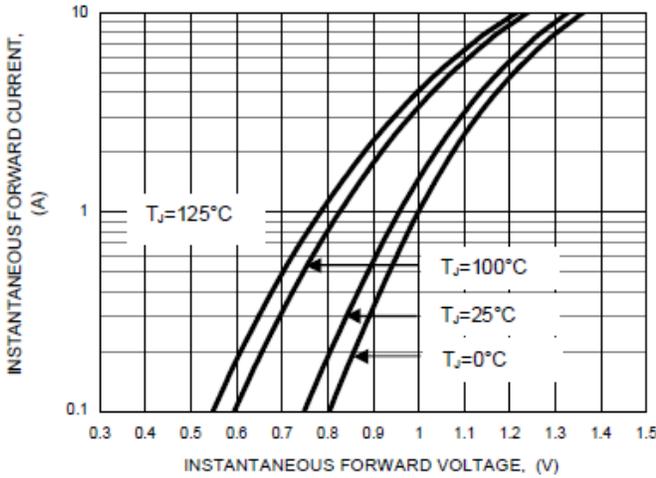
Notes: 5. Thermal resistance per element. The unit mounted on fin-type heatsink (40mm x 23mm x 15.9mm).  
6. Short duration pulse test used to minimize self-heating effect.  
7. 300μs pulse width, 2% duty cycle.



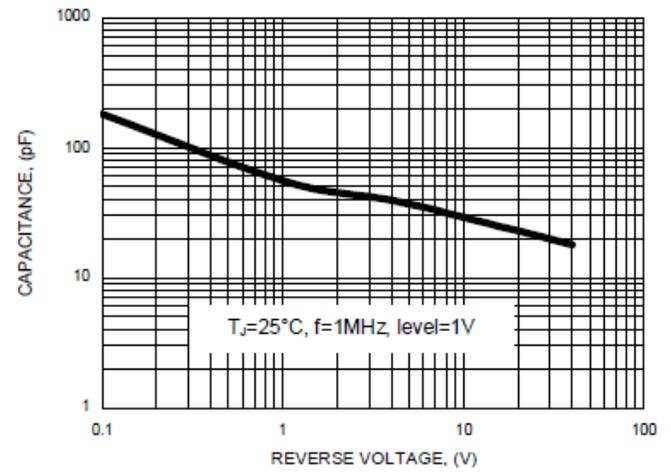
**FIG.1-FORWARD CURRENT DERATING CURVE**



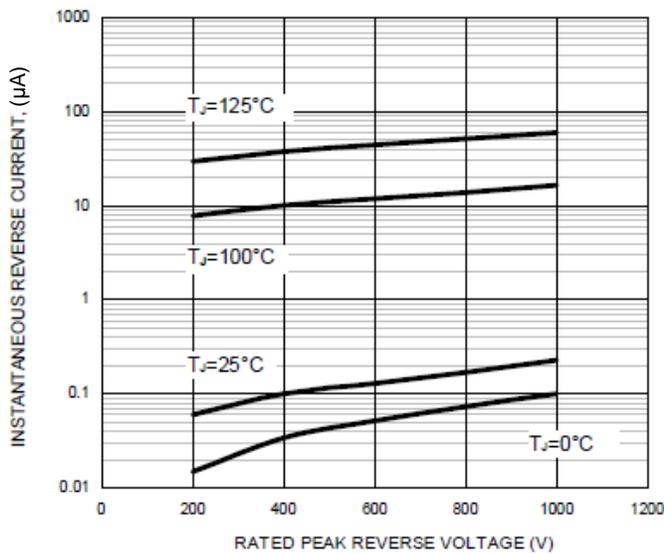
**FIG.2-MAXIMUM NON-REPETITIVE SURGE CURRENT**



**FIG.3-TYPICAL FORWARD CHARACTERISTICS**



**FIG.4-TYPICAL JUNCTION CAPACITANCE**



**FIG.5-TYPICAL REVERSE CHARACTERISTICS**



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