

Product Summary (@T_A = +25°C)

V _{RRM} (V)	I _{o Max} (A)	V _{F Max} (V)	I _{R Max} (μA)
400, 600, 800, 1000	3	1.1	5

Features and Benefits

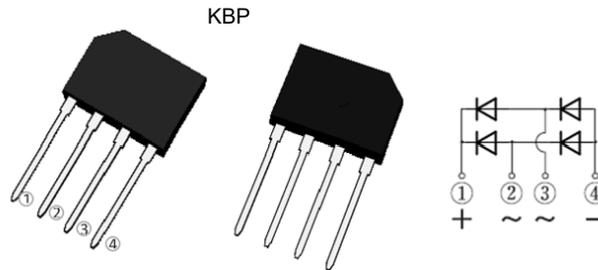
- Glass Passivated Die Construction
- High Case Dielectric Strength of 1000 PRV
- Low Reverse Leakage Current
- Surge Overload Rating to 90A Peak
- Ideal for Printed Circuit Board Applications
- UL Recognized File # E95060
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **For automotive applications 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](mailto:contact@diodes.com) 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

- Package: KBP
- Package Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Terminals: Finish – Tin. Plated Leads, Solderable per MIL-STD-202, Method 208 Ⓢ3
- Polarity: Marked on Body
- Weight: 1.52 grams (Approximate)

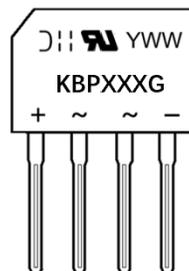


Ordering Information (Note 3)

Orderable Part Number	Package	Packing	
		Qty.	Carrier
KBP304G	KBP	35pcs	Tube
KBP306G	KBP	35pcs	Tube
KBP308G	KBP	35pcs	Tube
KBP310G	KBP	35pcs	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. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



KBPXXXG = Product Type Marking Code, ex: KBP304G, KBP306G, KBP308G, KBP310G
 Ⓜ = Manufacturer's Code Marking
 YWW = Date Code Marking
 Y = Last Digit of Year (ex: 5 = 2025)
 WW = Week Code (01 to 53)

Maximum Ratings (@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	KBP304G	KBP306G	KBP308G	KBP310G	Unit
Peak Repetitive Reverse Voltage	V _{RRM}					
Working Peak Reverse Voltage	V _{RWM}	400	600	800	1000	V
DC Blocking Voltage	V _{RM}					
RMS Reverse Voltage	V _{R(RMS)}	280	420	560	700	V
Average Rectified Output Current @T _C = +105°C	(With Heatsink)	3.0				A
	(Without Heatsink)	1.9				
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine Wave Superimposed on Rated Load	T _J = +25°C	90				A
	T _J = +125°C	80				
Non-Repetitive Peak Forward Surge Current 1.0ms Single Half Sine Wave Superimposed on Rated Load	T _J = +25°C	180				A
	T _J = +125°C	160				
I ² t Rating for Fusing (3ms ≤ t ≤ 8.3ms)	I ² t	26.5				A ² s

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Case (Note 4)	R _{θJC}	10	°C/W
Typical Thermal Resistance, Junction to Lead (Note 4)	R _{θJL}	12	°C/W
Typical Thermal Resistance, Junction to Ambient (Note 4)	R _{θJA}	30	°C/W
Typical Thermal Resistance, Junction to Case (Note 5)	R _{θJC}	12	°C/W
Typical Thermal Resistance, Junction to Lead (Note 5)	R _{θJL}	18	°C/W
Typical Thermal Resistance, Junction to Ambient (Note 5)	R _{θJA}	40	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition	
Reverse Breakdown Voltage (Note 6)	V _{(BR)R}	1,000	—	—	V	I _R = 5μA	
		800					KBP310G
		600					KBP308G
		400					KBP306G
Forward Voltage Drop per Element	V _F	—	0.91	1.1	V	I _F = 3A, T _J = +25°C	
Leakage Current (Note 6)	I _R	—	—	5	μA	V _R = V _{RRM} , T _J = +25°C	
		—	—	500		V _R = V _{RRM} , T _J = +125°C	
Total Capacitance per Element	C _T	—	35	—	pF	V _R = 4.0V _{DC} , f = 1MHz	

- Notes:
4. Thermal resistance from junction to case per element. Device mounted on 30mm x 30mm x 1mm Cu plate heatsink.
 5. Thermal resistance from junction to case per element without heat sink.
 6. Short duration pulse test used to minimize self-heating effect.

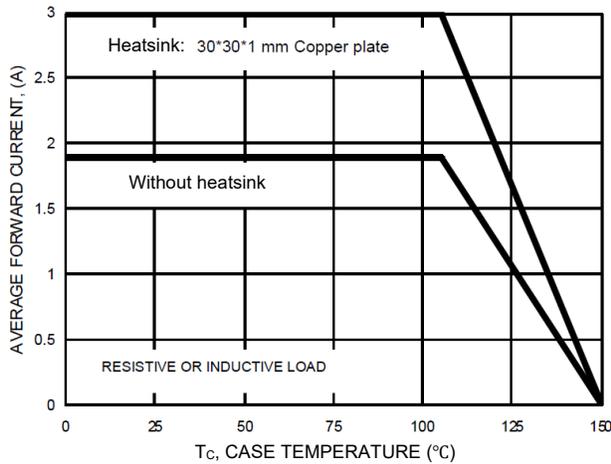


Figure 1. Forward Current Derating Curve

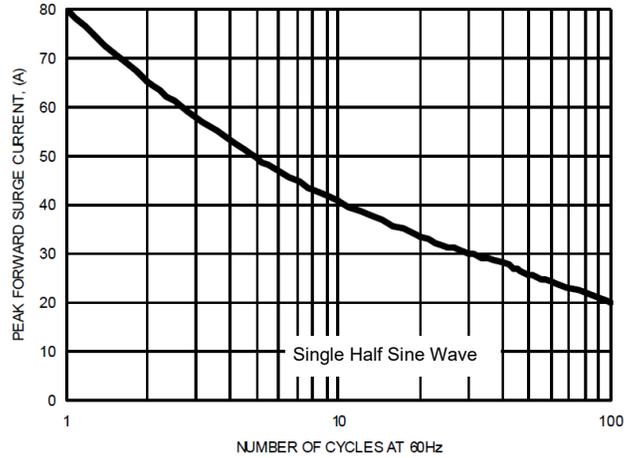


Figure 2. Maximum Non-Repetitive Surge Current

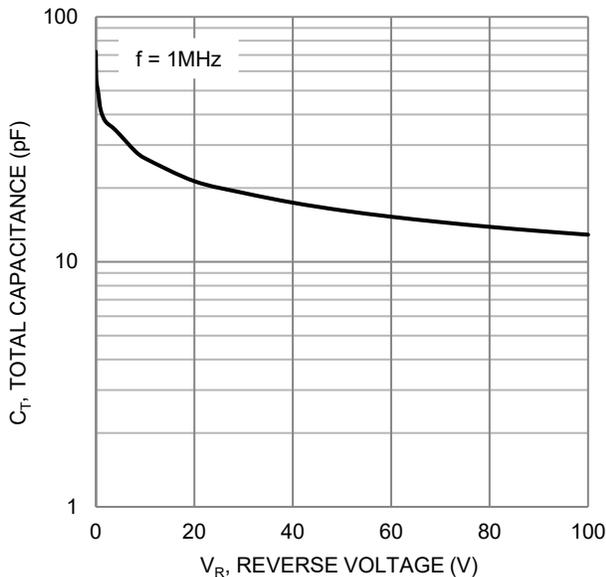


Figure 3. Typical Total Capacitance (Per Element)

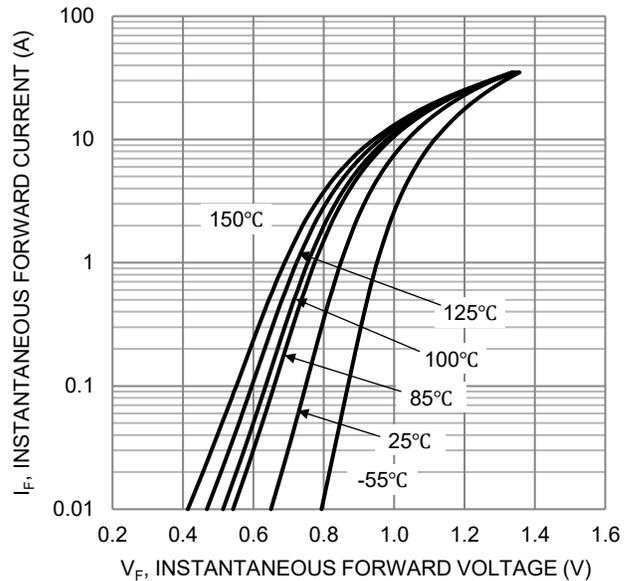


Figure 4. Typical Forward Characteristics

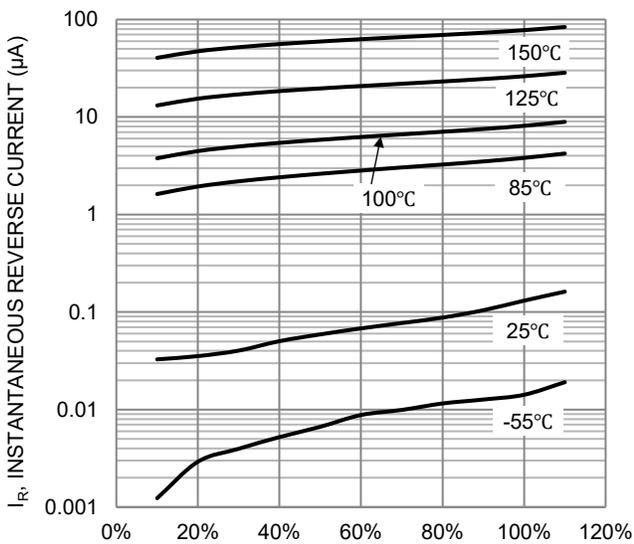


Figure 5. Typical Reverse Characteristics

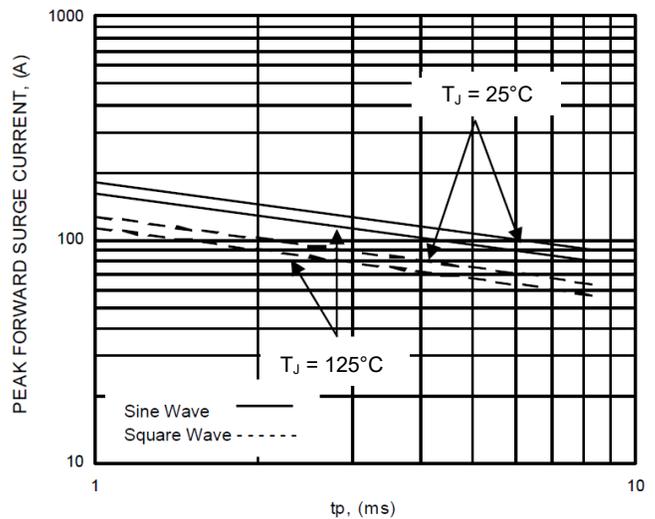


Figure 6. Non-Repetitive Surge Current

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