



# THE DATASHEET OF KBP210G



## Features and Benefits

- Glass Passivated Die Construction
- High Case Dielectric Strength of 1,500 V<sub>RMS</sub>
- Low Reverse Leakage Current
- Surge Overload Rating to 65A Peak
- Ideal for Printed Circuit Board Applications
- UL Listed Under Recognized Component Index, File Number E94661
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**

## Mechanical Data

- Case: KBP
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Tin Plated Leads. Solderable per MIL-STD-202, Method 208
- Polarity: Marked on Body
- Marking: Type Number
- Weight: 1.52 grams (Approximate)

KBP

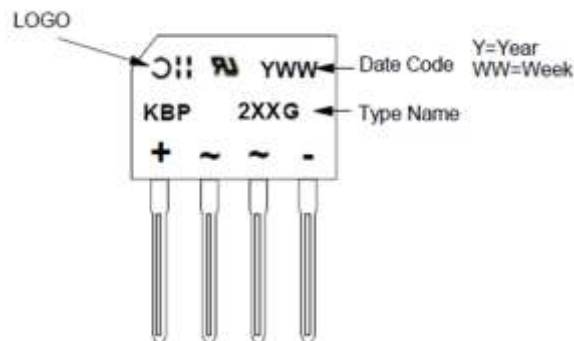


## Ordering Information (Note 3)

Part Number	Compliance	Case	Packaging
KBP2005G	Commercial	KBP	35 Pieces per Tube
KBP201G	Commercial	KBP	35 Pieces per Tube
KBP202G	Commercial	KBP	35 Pieces per Tube
KBP204G	Commercial	KBP	35 Pieces per Tube
KBP206G	Commercial	KBP	35 Pieces per Tube
KBP208G	Commercial	KBP	35 Pieces per Tube
KBP210G	Commercial	KBP	35 Pieces per Tube

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) 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 <http://www.diodes.com/products/packages.html>.

## Marking Information



**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitance load, derate current by 20%.

Characteristic	Symbol	KBP2005G	KBP201G	KBP202G	KBP204G	KBP206G	KBP208G	KBP210G	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>								
Working Peak Reverse Voltage	V <sub>RWM</sub>	50	100	200	400	600	800	1,000	V
DC Blocking Voltage	V <sub>RM</sub>								
RMS Reverse Voltage	V <sub>R(RMS)</sub>	35	70	140	280	420	560	700	V
Average Rectified Output Current @T <sub>C</sub> = +105°C	I <sub>O</sub>	2.0							A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	65							A
I <sup>2</sup> t Rating for Fusing (3ms ≤ t ≤ 8.3ms)	I <sup>2</sup> t	17.5							A <sup>2</sup> s

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Case (Note 4)	R <sub>θJC</sub>	14	°C/W
Typical Thermal Resistance, Junction to Lead	R <sub>θJL</sub>	18	°C/W
Typical Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	40	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 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 5)	V <sub>(BR)R</sub>	KBP210G 1,000 KBP208G 800 KBP206G 600 KBP204G 400 KBP202G 200 KBP201G 100 KBP2005G 50	—	—	V	I <sub>R</sub> = 5μA
Forward Voltage Drop per Element	V <sub>F</sub>	—	—	1.1	V	I <sub>F</sub> = 2A, T <sub>J</sub> = +25°C
Leakage Current (Note 5)	I <sub>R</sub>	—	—	5 500	μA	V <sub>R</sub> = V <sub>RRM</sub> , T <sub>C</sub> = +25°C V <sub>R</sub> = V <sub>RRM</sub> , T <sub>C</sub> = +125°C
Total Capacitance per Element	C <sub>T</sub>	—	25	—	pF	V <sub>R</sub> = 4.0V <sub>DC</sub> , f = 1MHz

Notes: 4. Thermal resistance from junction to case per element. Device mounted on 75mm x 75mm x 1.6mm Cu Plate Heatsink.  
5. Short duration pulse test used to minimize self-heating effect.

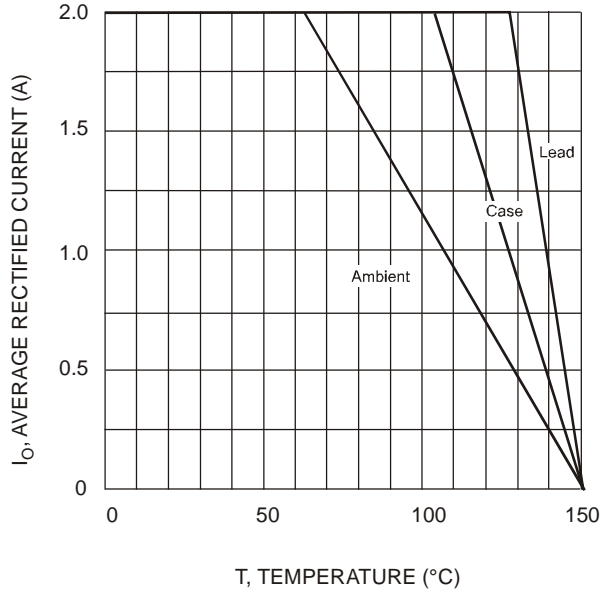


Fig. 1 Forward Current Derating Curve

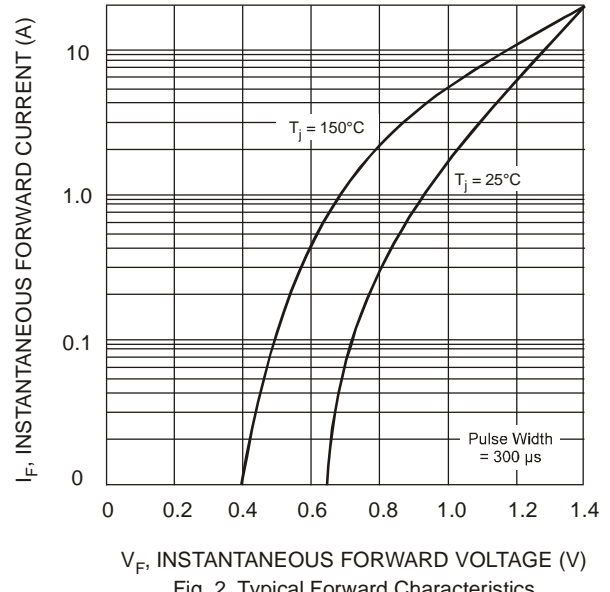


Fig. 2 Typical Forward Characteristics

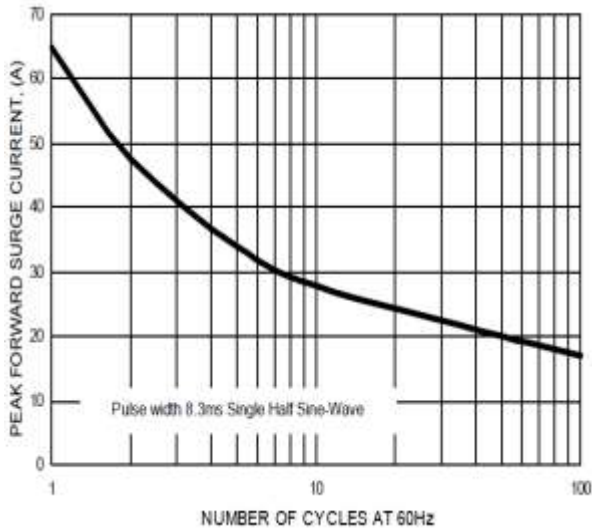


Fig. 3 Maximum Non-Repetitive Surge Current

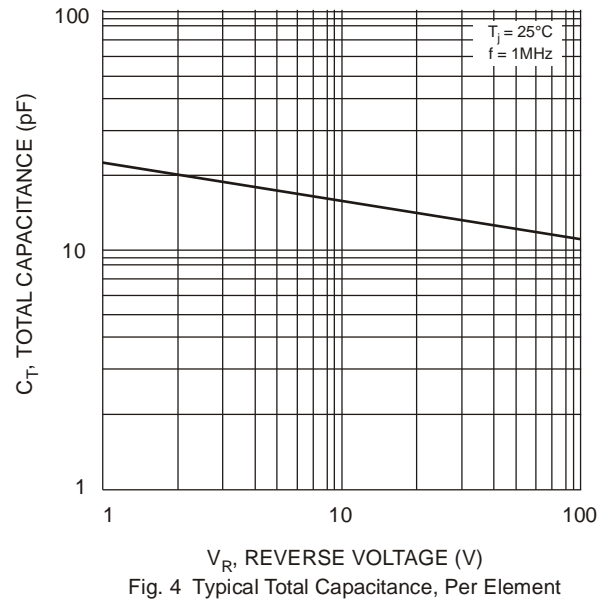


Fig. 4 Typical Total Capacitance, Per Element

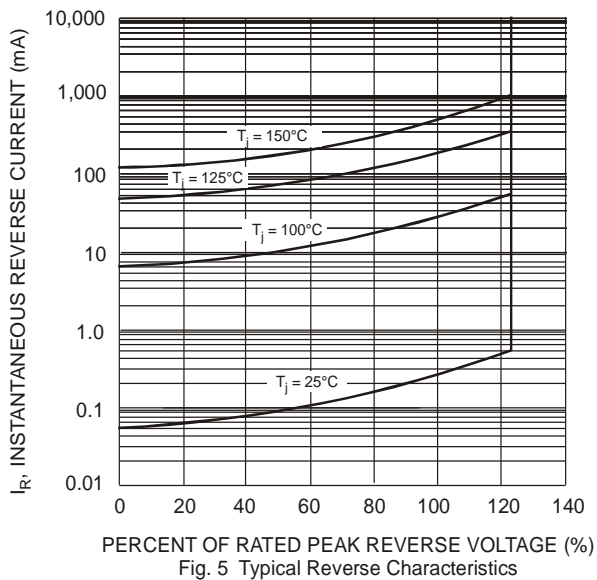


Fig. 5 Typical Reverse Characteristics

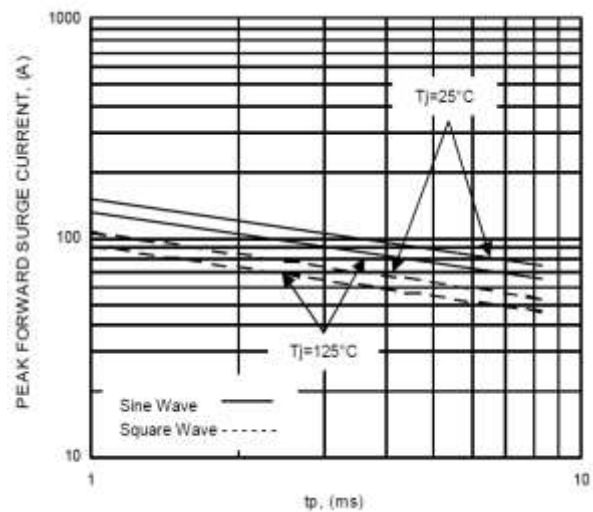
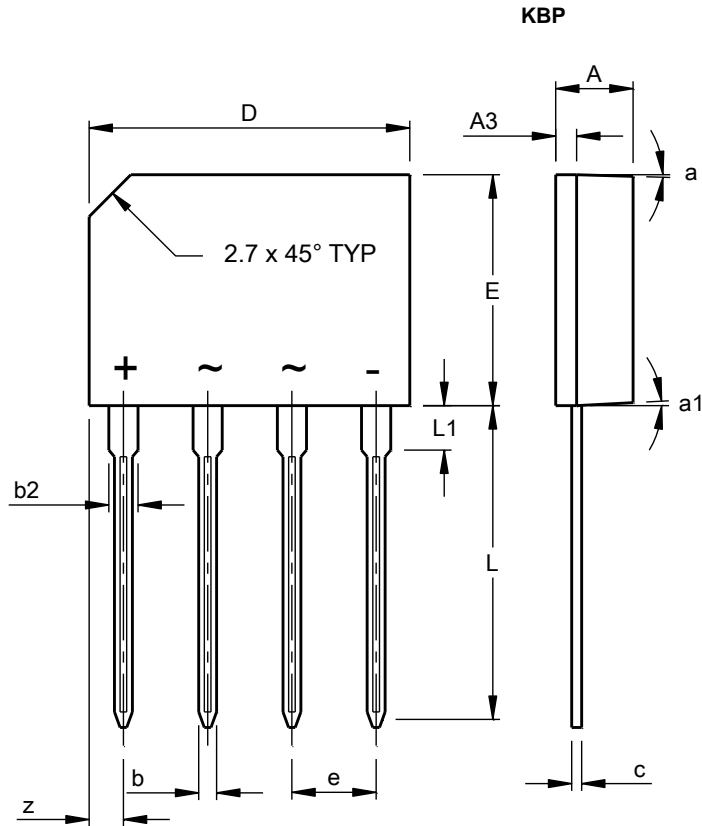


Fig. 6 Non-Repetitive Surge Current

**Package Outline Dimensions**

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



KBP			
Dim	Min	Max	Typ
A	3.35	3.65	-
A3	0.80	1.10	-
b	0.76	0.86	-
b2	1.22	1.42	-
c	0.35	0.55	-
D	14.25	14.75	-
E	10.20	10.60	-
e	3.56	4.06	-
L	14.25	14.73	-
L1	1.80	2.20	-
z	1.40	1.70	-
a	-	-	3°
a1	-	-	2°
All Dimensions in mm			

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