



# THE DATASHEET OF GBP310



## Product Summary

$V_{RRM}(V)$	$I_F(A)$	$V_F \text{ Max (V)}$ @ $I_F = 1.5A$	$I_R \text{ Max } (\mu A)$
600, 800, 1000	3	1.05	5

## Mechanical Data

- Case: GBP
- Case Material: plastic material, UL flammability classification 94V-0.(No Br, Sb, Cl)
- Terminals: Finish – Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 (e3)
- Polarity indicator: symbol molded on body.
- Weight: 1.33 grams (Approximate)



## Features

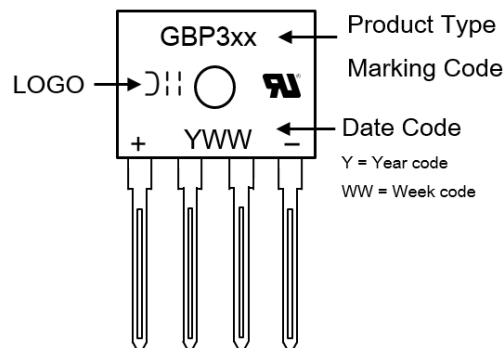
- Glass Passivated Die Construction
- Rating to 1000V PRV
- Ideal for printed circuit board
- Reliable construction utilizing molded plastic
- UL recognized file # E94661
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications 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](mailto:contact@diodes.com) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

## Ordering Information (Note 4)

Part Number	Qualification	Case	Packaging
GBP306	Commercial	GBP	35/Tube
GBP308	Commercial	GBP	35/Tube
GBP310	Commercial	GBP	35/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



**Maximum Ratings** (@  $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Characteristic	Symbol	GBP306	GBP308	GBP310	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	600	800	1000	V
Maximum DC blocking voltage	$V_{DC}$	600	800	1000	V
Maximum average rectified output current @ $T_C = +100^\circ\text{C}$	$I_{F(AV)}$		3.0 1.8		A
Peak forward surge current 8.3ms single half sine wave superimposed on rated load.	$I_{FSM}$		$T_J = +25^\circ\text{C}$	90	A
			$T_J = +125^\circ\text{C}$	72	
Peak forward surge current 1.0ms single half sine wave superimposed on rated load.	$I_{FSM}$		$T_J = +25^\circ\text{C}$	200	A
			$T_J = +125^\circ\text{C}$	160	
$I^2t$ rating for fusing ( $t = 8.3\text{ms}$ )	$I^2t$		33		$\text{A}^2\text{S}$
Operating temperature range	$T_J$		-55 to + 150		$^\circ\text{C}$
Storage temperature range	$T_{STG}$		-55 to + 150		$^\circ\text{C}$

**Electrical Characteristics**

Characteristic	Test Conditions	Symbol	Max	Unit
Forward voltage	$I_F = 1.5\text{A}$ $T_J = +25^\circ\text{C}$	$V_F$	1.05	V
Leakage current	$V_R$ at Rated $T_J = +25^\circ\text{C}$ $T_J = +125^\circ\text{C}$	$I_R$	5 500	$\mu\text{A}$
Typical junction capacitance (Note 5)		$C_J$	25	pF

**Thermal Characteristics**

Characteristic	Symbol	Typ.	Unit
Typical thermal resistance (Note 6)	$R_{thJC}$	9	$^\circ\text{C/W}$
	$R_{thJL}$	9	
	$R_{thJA}$	20	

Notes: 5. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.  
6. Thermal resistance junction to case, lead and ambient. Device mounted on 30mm x 30mm x 1mm Cu plate heatsink.

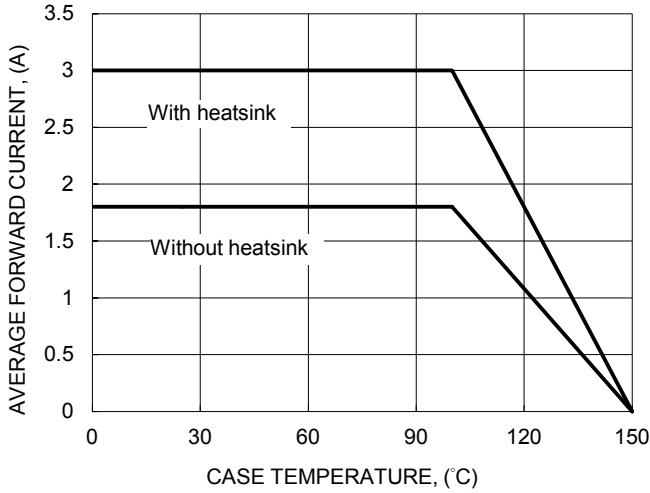


Figure 1. Forward Current Derating Curve

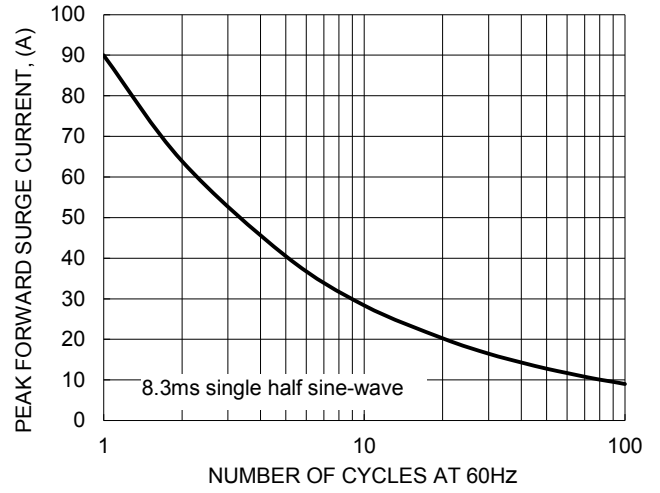


Figure 2. Maximum Non-repetitive Surge Current

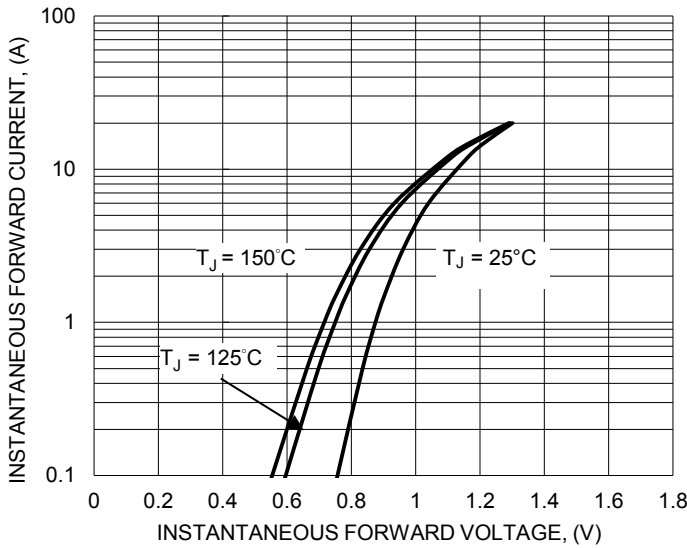


Figure 3. Typical Forward Characteristics

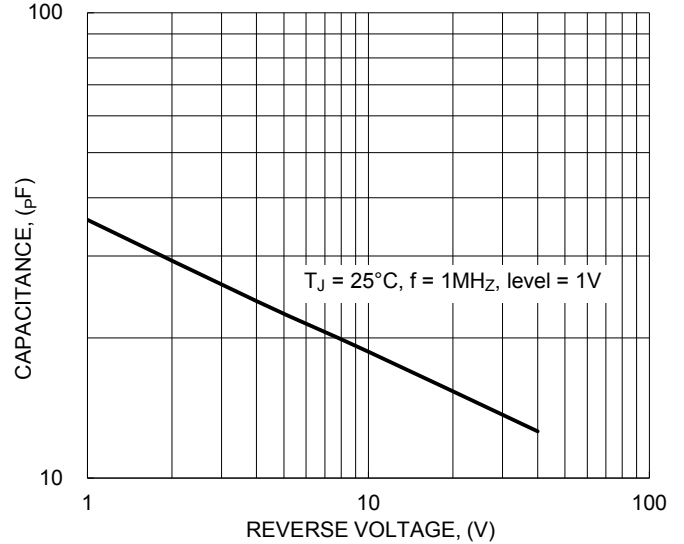


Figure 4. Typical Junction Capacitance

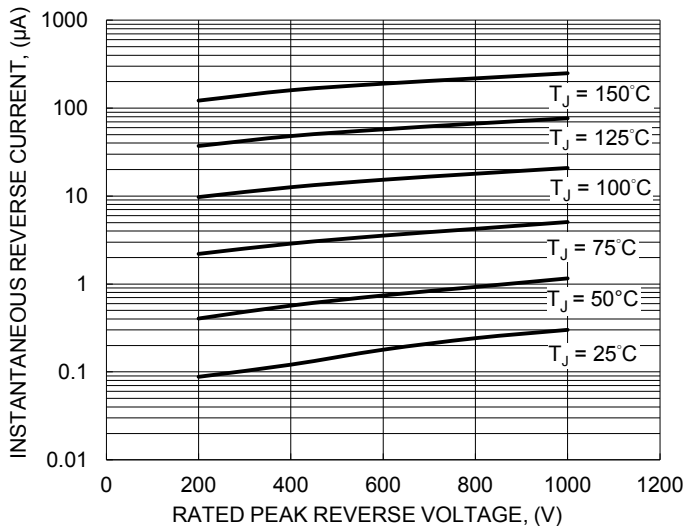


Figure 5. Typical Reverse Characteristics

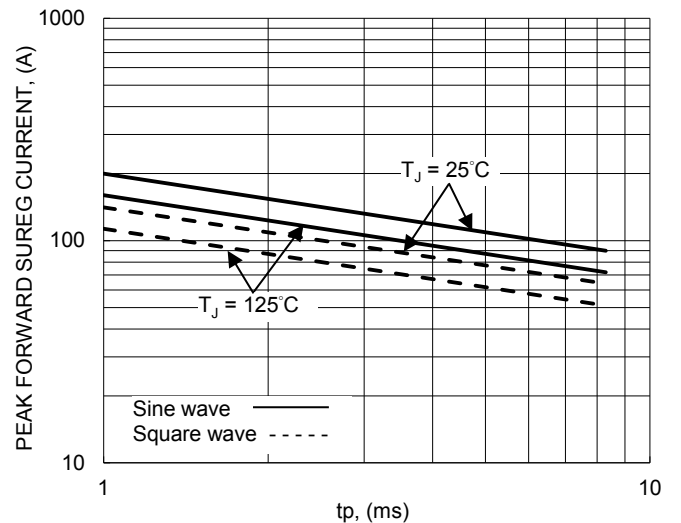
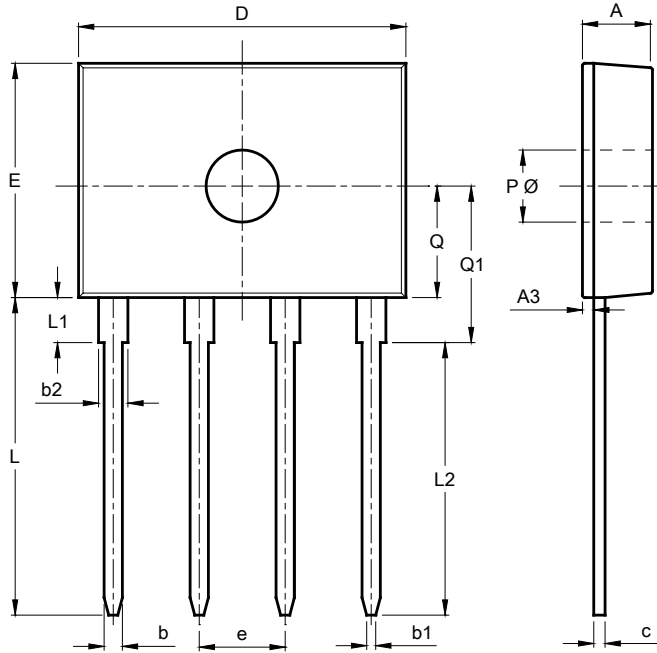


Figure 6. Non-repetitive Surge Current

**Package Outline Dimensions**

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



GBP			
Dim	Min	Max	TYP
A	2.90	3.30	3.10
A3	0.30	0.70	0.50
b	0.76	0.86	0.81
b1	0.35	0.45	0.40
b2	1.20	1.40	1.30
c	0.40	0.60	0.50
D	14.20	14.70	14.50
E	10.10	10.70	10.40
e	3.71	3.91	3.81
L	13.80	14.40	14.10
L1	1.80	2.20	2.00
L2	12.10 REF		
PØ	3.20 REF		
Q	4.65	5.25	4.95
Q1	6.65	7.25	6.95
<b>All Dimensions in mm</b>			

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