

### GBP306G THRU GBP310G

#### BRIDGE RECTIFIERS



<b>VOLTAGE</b>	600~1000 Volts	<b>CURRENT</b>	3.0 Amperes	<b>GBP</b>	<b>Marking &amp; Schematic diagram</b>										
<b>FEATURES</b>				<table border="1"> <thead> <tr> <th>PIN</th> <th>DISCRIPTION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Output Anode(+)</td> </tr> <tr> <td>2</td> <td>Input Pin(AC1)</td> </tr> <tr> <td>3</td> <td>Input Pin(AC2)</td> </tr> <tr> <td>4</td> <td>Output Cathode(-)</td> </tr> </tbody> </table>		PIN	DISCRIPTION	1	Output Anode(+)	2	Input Pin(AC1)	3	Input Pin(AC2)	4	Output Cathode(-)
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2	Input Pin(AC1)														
3	Input Pin(AC2)														
4	Output Cathode(-)														
<ul style="list-style-type: none"> <li>Glass passivated die construction</li> <li>low forward voltage drop</li> <li>High current capability</li> <li>High surge current capability</li> <li>Plastic material-UL flammability 94V-0</li> </ul>															
<b>MECHANICAL DATA</b>				<p>Remark:</p> <ol style="list-style-type: none"> <li>NH=niuhang trademark</li> <li>FF=Product line code,According to actual changes YWW=Data code,According to actual changes EDDKF=Inernal code,According to actual changes</li> <li>GBP3xxG=Modle,xx=06,08,10</li> <li>"+ AC -"=Polarity mark</li> </ol>											
<ul style="list-style-type: none"> <li>Case: GBP , olded lastic</li> <li>Terminals: Plated Leads Solderable per MIL-STD-202, Method 208</li> <li>Polarity: As Marked on Case</li> <li>Mounting Position: Any</li> <li>Lead Free: For RoHS / Lead Free Version</li> </ul>															
<b>TYPICAL APPLICATIONS</b>															
<ul style="list-style-type: none"> <li>For use in low voltage ,high frequency inverters ,DC/DC converters,free wheeling ,and polarity protection applications</li> </ul>															

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

#### Maximum Ratings (Ratings at 25°C ambient temperature unless otherwise specified)

Parameter	Symbol	GBP306G	GBP308G	GBP310G	Unit
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	600	800	1000	V
Maximum RMS Voltag	$V_{RMS}$	420	560	700	V
Maximum DC Blocking Voltage	$V_{DC}$	600	800	1000	V
Maximum Average Forward Rectified Current @ TC=100°C (see fig.1)	$I_{F(AV)}$	3.0 1.2			A
Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed On Rate Load (JEDEC Method)	$I_{FSM}$	80			A
Current Squared Time Per Diode(t<8.3ms)	$I^2 t$	26.56			A <sup>2</sup> sec

#### Electrical Characteristcs (Ratings at 25°C ambient temperature unless otherwise specified)

Parameter	Symbol	GBP306G	GBP308G	GBP310G	Unit
Maximum Forward Voltage Per Diode @3.0A (Note 1)	$V_{FM}$	1.0			V
Maximum DC Reverse Current at Rated DC Blocking Voltage (Note 2)	$I_{RRM}$	5 300			uA
Typical Junction Capacitance Per Diode (Note 3)	$C_J$	35			pF

#### Thermal Characteristcs (Ratings at 25°C ambient temperature unless otherwise specified)

Parameter	Symbol	GBP306G	GBP308G	GBP310G	Unit
Operating Junction Temperature Range	$T_J$	-55 to +150			°C
Storage Temperature Range	$T_{STD}$	-55 to +150			
Typical thermal resistance (Note 4)	$R_{\theta JA}$ $R_{\theta JL}$	34 15			°C/W

- Notes:
- Pulse test: 300 μs pulse width,1% duty cycle
  - Pulse test: pulse width ≤40ms
  - Measured at 1MHz and applied reverse voltage of 4.0V D.C.
  - Device mounted on 75mm x 45mm x 2.5mm Aluminum Plate Heatsink.

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**RATING AND CHARACTERISTIC CURVES**

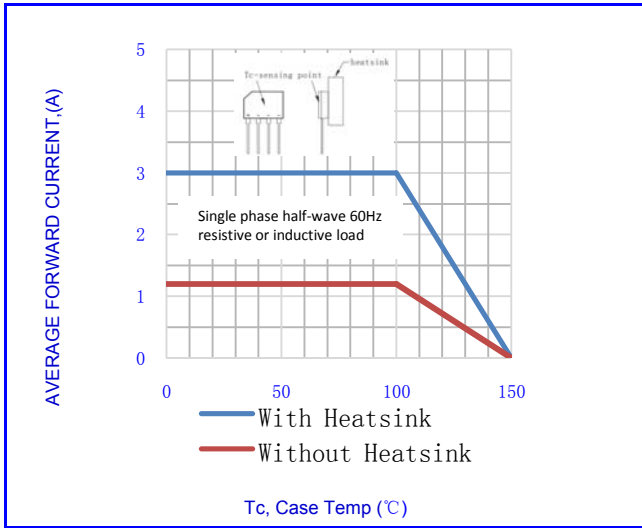


Fig.1-FORWARD CURRENT DERATING CURVE

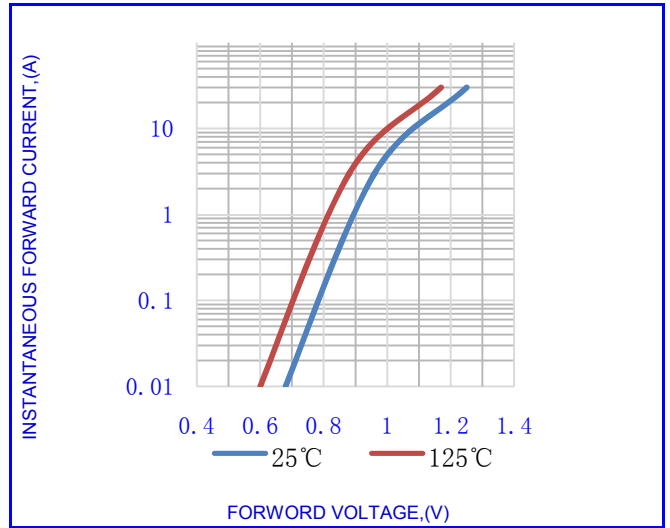


Fig.2- TYPICAL INSTANTANEOUS FORWARD

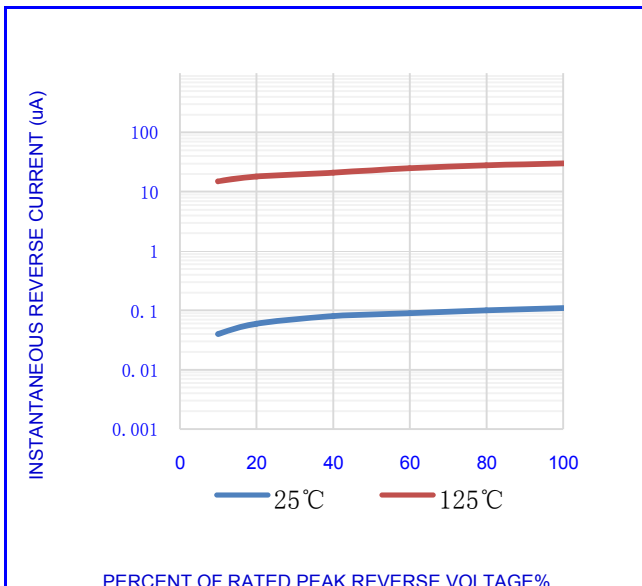


Fig.3- TYPICAL REVERSE CHARACTERISTICS

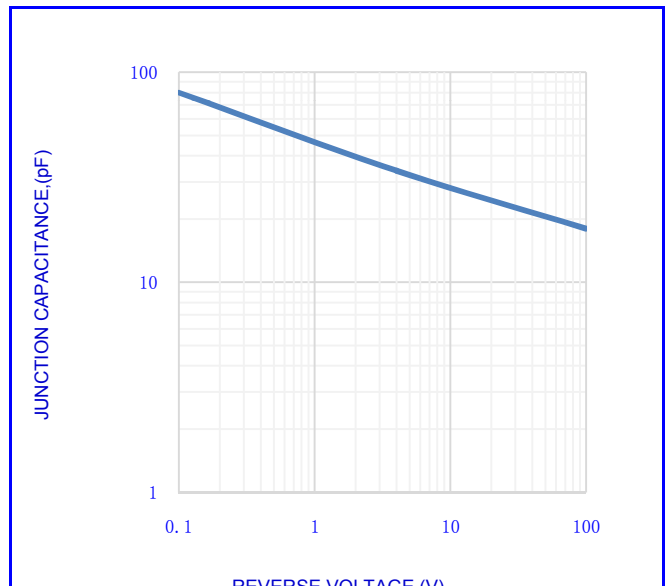


Fig.4- TYPICAL JUNCTION CAPACITANCE

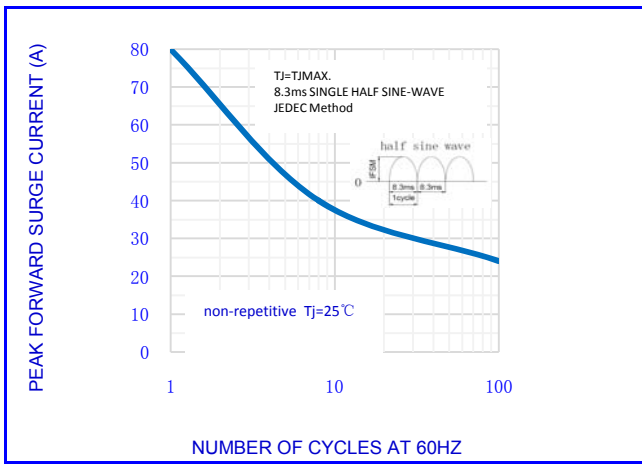


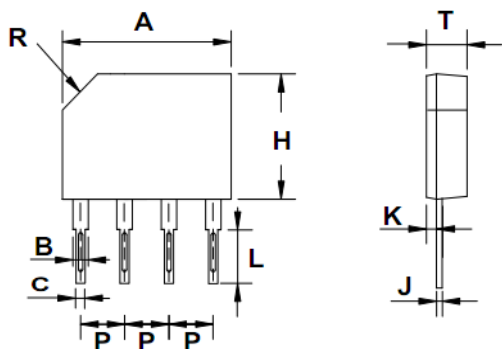
Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

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**OUTLINE DRAWINGS**



DIM	OUTLINE DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	14.30	-	14.70	0.563	-	0.579
B	1.25	-	1.55	0.049	-	0.061
C	0.65	-	0.95	0.026	-	0.037
H	10.40	-	10.80	0.409	-	0.425
L	3.50	-	4.00	0.138	-	0.157
P	3.60	-	4.00	0.142	-	0.157
T	3.00	-	3.40	0.118	-	0.134
K	0.80	-	1.20	0.031	-	0.047
J	0.30	-	0.50	0.012	-	0.020
R	-	135 °	-	-	135 °	-

GBP

**Packing Information**

Package	Pack	Quantity (pcs/box)	Box Size L×W×H (mm)	Carton Size L×W×H (mm)	Quantity (box/carton)
GBP	B/P	500	205×155×30	490×240×180	18

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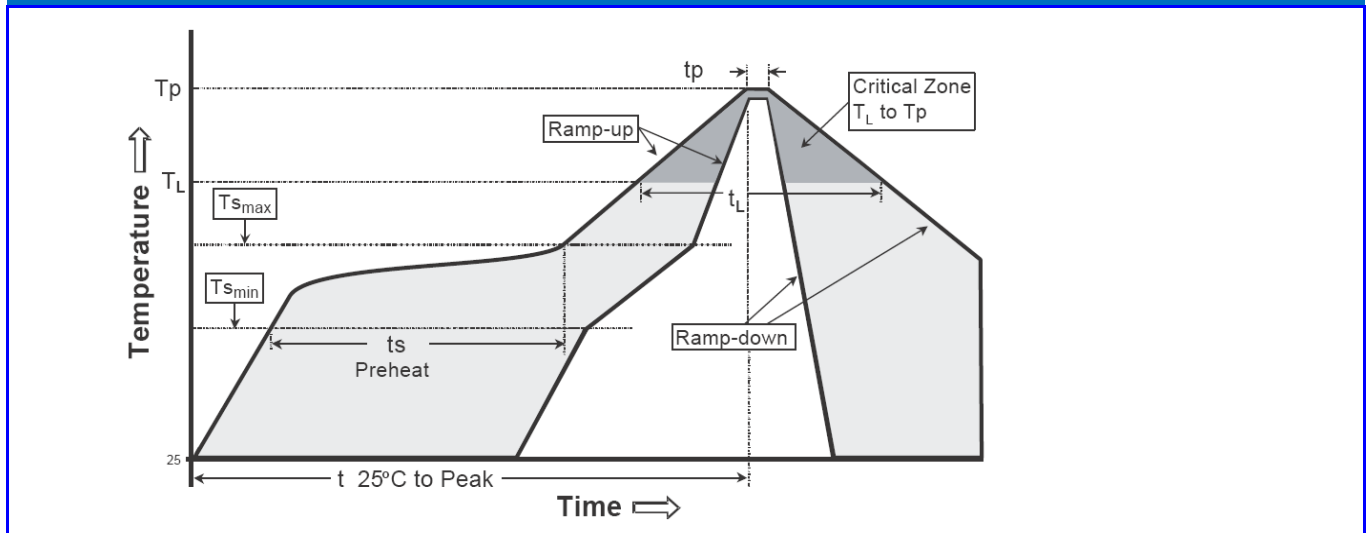
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**Recommended wave soldering condition**

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

**Recommended temperature profile for IR reflow**



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (T <sub>Smax</sub> to T <sub>p</sub> )	3°C/second max.	3°C/second max.
Preheat -Temperature Min(T <sub>Smin</sub> ) -Temperature Max(T <sub>Smax</sub> ) -Time(ts min to ts max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (T <sub>L</sub> ) - Time (t <sub>L</sub> )	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(T <sub>p</sub> )	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(t <sub>p</sub> )	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

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