

**GBU2506 THRU GBU2510**

**BRIDGE RECTIFIERS**



<b>VOLTAGE</b>	600~1000 Volts	<b>CURRENT</b>	10.0 Amperes	<b>GBU</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 Cathode(-)</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 Anode(+)</td> </tr> </tbody> </table>		PIN	DISCRIPTION	1	Output Cathode(-)	2	Input Pin(AC1)	3	Input Pin(AC2)	4	Output Anode(+)
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2	Input Pin(AC1)														
3	Input Pin(AC2)														
4	Output Anode(+)														
<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><b>Remark:</b></p> <p>①. NH=niuhang trademark</p> <p>②. FF=Product line code,According to actual changes YWW=Data code,According to actual changes EDDKF=Inernal code,According to actual changes</p> <p>③. GBU25xx=Modle,xx=06,08,10</p> <p>④. "- AC +"=Polarity mark</p>											
<ul style="list-style-type: none"> <li>Case: GBU , 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	GBU2506	GBU2508	GBU2510	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)	$I_{F(AV)}$	with heatsink without heatsink		25 3.5	A
Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed On Rate Load (JEDEC Method)	$I_{FSM}$			300	A
Current Squared Time Per Diode(t<8.3ms)	$I^2 t$			373.50	A <sup>2</sup> sec

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

Parameter	Symbol	GBU2506	GBU2508	GBU2510	Unit
Maximum Forward Voltage Per Diode @12.5A (Note 1)	$V_{FM}$			1.0	V
Maximum DC Reverse Current at Rated DC Blocking Voltage (Note 2)	$I_{RRM}$	TC=25°C TC=125°C		5 300	uA
Typical Junction Capacitance Per Diode (Note 3)	$C_J$			96	pF

**Thermal Characteristics** (Ratings at 25°C ambient temperature unless otherwise specified )

Parameter	Symbol	GBU2506	GBU2508	GBU2510	Unit
Operating Junction Temperature Range	$T_J$			-55 to +150	°C
Storage Temperature Range	$T_{STD}$			-55 to +150	
Typical thermal resistance (Note 4)	$R_{\theta JA}$ $R_{\theta JC}$			23.0 2.0	°C/W

- Notes: 1. Pulse test: 300 μs pulse width,1% duty cycle  
 2. Pulse test: pulse width ≤40ms  
 3. Measured at 1 MHZ and applied reverse voltage of 4.0 VDC.  
 4. Device mounted on Device mounted on 75mm x 45mm x 4.5mm Aluminum Plate Heatsink.

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**RATING AND CHARACTERISTIC CURVES**

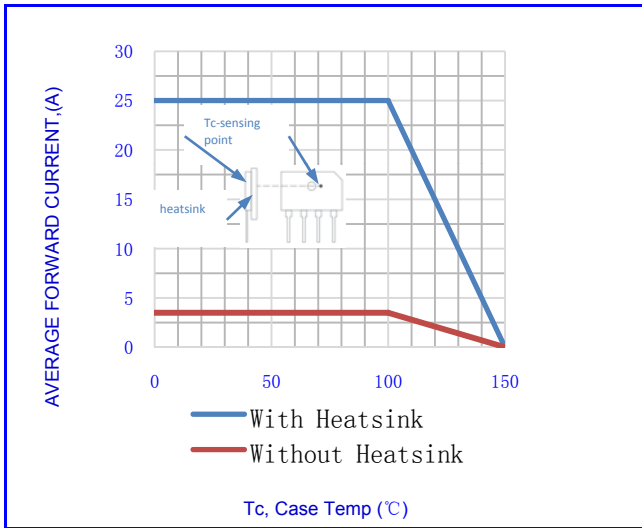


Fig.1-FORWARD CURRENT DERATING CURVE

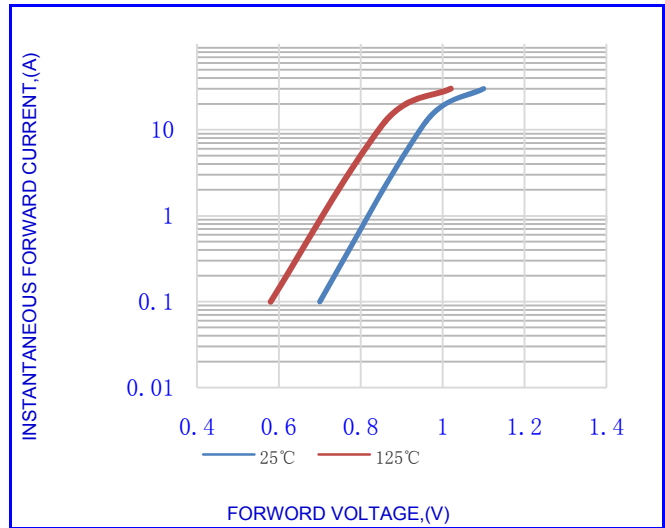


Fig.2- TYPICAL INSTANTANEOUS FORWARD

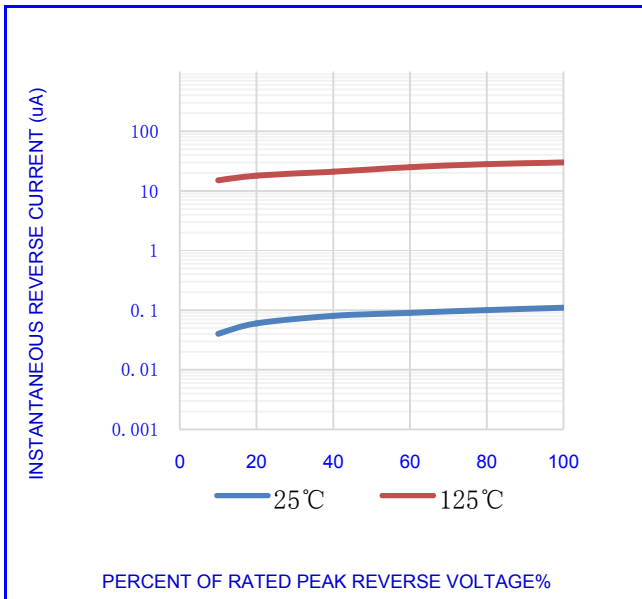


Fig.3- TYPICAL REVERSE CHARACTERISTICS

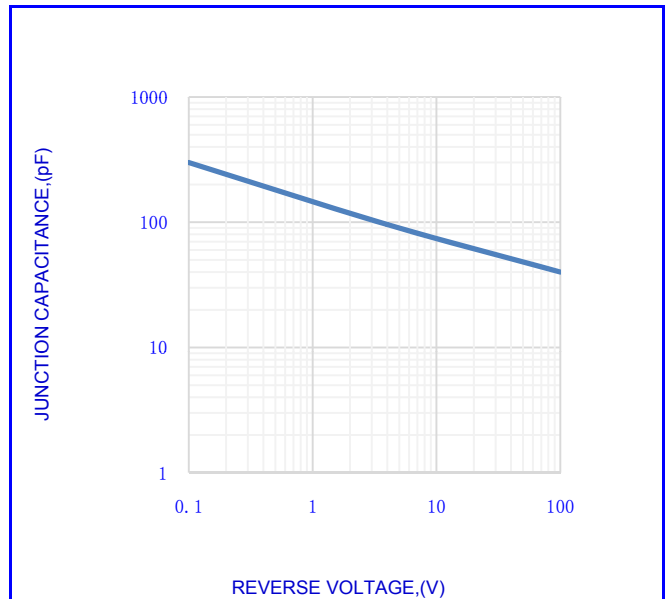


Fig.4- TYPICAL JUNCTION CAPACITANCE

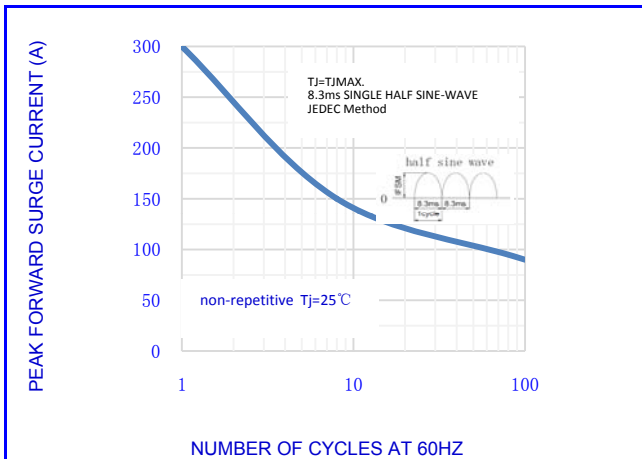


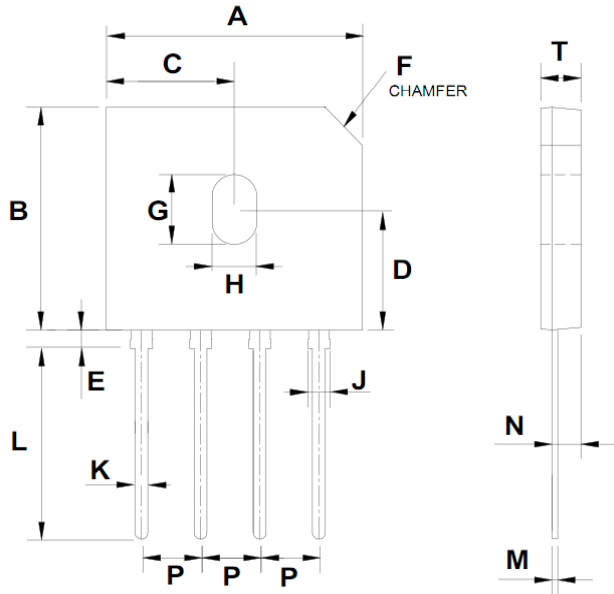
Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

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**OUTLINE DRAWINGS**



OUTLINE DIMENSIONS						
DIM	MILLIMETERS			INCHES		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	21.50	-	23.50	0.85	-	0.93
B	18.30	-	19.10	0.72	-	0.75
C	10.90	-	11.10	0.43	-	0.44
D	9.80	-	10.20	0.39	-	0.40
E	1.70	-	2.40	0.07	-	0.09
F	-	3.2°45°	-	-	3.2°45°	-
G	5.50	-	5.90	0.22	-	0.23
H	3.50	-	3.90	0.14	-	0.15
J	2.00	-	2.40	0.08	-	0.09
K	0.90	-	1.20	0.04	-	0.05
L	17.27	-	18.29	0.68	-	0.72
M	0.40	-	0.60	0.02	-	0.02
N	2.30	-	2.70	0.09	-	0.11
P	4.80	-	5.30	0.19	-	0.21
T	3.30	-	3.60	0.13	-	0.14

**GBU**

**Packing Information**

Package	Pack	Quantity (pcs/box)	Box Size L×W×H (mm)	Carton Size L×W×H (mm)	Quantity (box/carton)
GBU	B/P	250	230×45×120	380×240×190	12

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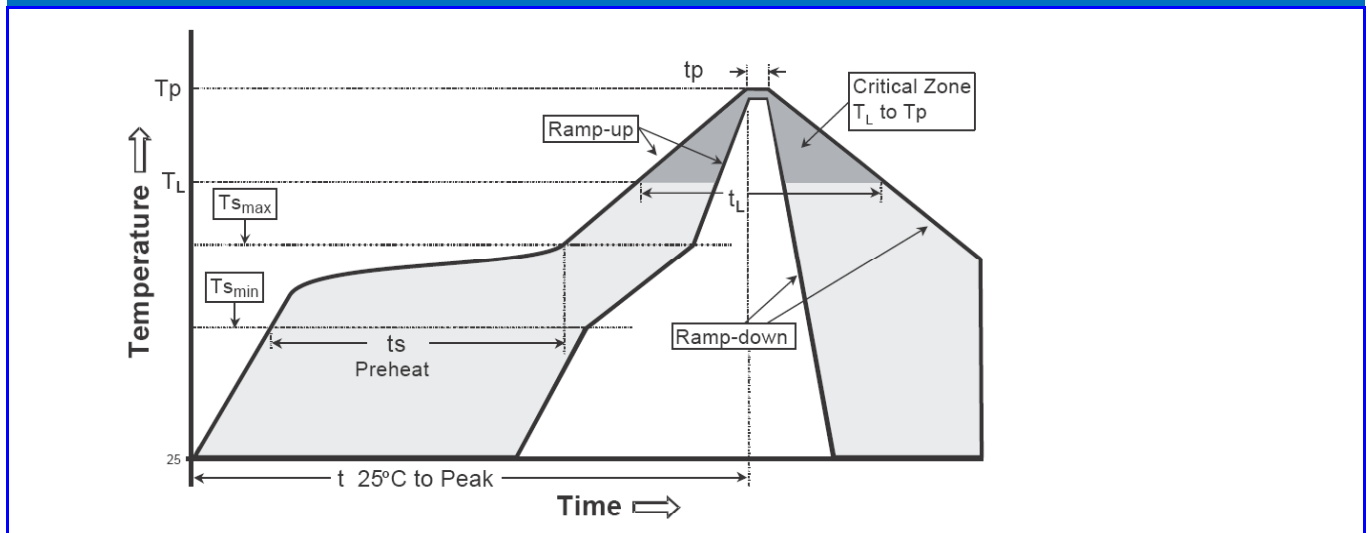
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**Recommended wave soldering condition**

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>s min</sub> ) -Temperature Max(T <sub>s max</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(tp)	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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