

GBL406 THRU GBL410
BRIDGE RECTIFIERS



VOLTAGE	600~1000 Volts	CURRENT	4.0 Amperes	GBL	Marking & Schematic diagram
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FEATURES

- Glass passivated die construction
- low forward voltage drop
- High current capability
- High surge current capability
- Plastic material-UL flammability 94V-0

MECHANICAL DATA

- Case: D3K , olded elastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: As Marked on Case
- Mounting Position: Any
- Marking: GBL40XX(XX=06,08,10)
- Lead Free: For RoHS / Lead Free Version

TYPICAL APPLICATIONS

- For use in low voltage ,high frequency inverters ,DC/DC converters,free wheeling ,and polarity protection applications

PIN	DISCRPTION
1	Output Cathode(+)
2	Input Pin(AC1)
3	Input Pin(AC2)
4	Output Anode(-)

Remark:

- ①.NH=niuhang trademark;
- ②.FF=Product line code,According to actual changes
YWW=Data code,According to actual changes
EDDKF=Internal control code,According to actual changes
- ③.GBL4XX=Modle,XX=06,08,10
- ④."+ AC -"=Polarity mark

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	GBL406	GBL408	GBL410	Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	1000	1000	1000	V
Maximum RMS Voltag	V_{RMS}	700	700	700	V
Maximum DC Blocking Voltage	V_{DC}	1000	1000	1000	V
Maximum Average Forward Rectified Current @ TC=100°C (see fig.1)	$I_{F(AV)}$	with heatsink 4 without heatsink 1.3			A
Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed On Rate Load (JEDEC Method)	I_{FSM}			135	A
Current Squared Time Per Diode(t<8.3ms)	$I^2 t$			75.63	A ² sec

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

Parameter	Symbol	GBL406	GBL408	GBL410	Unit
Maximum Forward Voltage Per Diode (Note 1)	V_{FM}	@4.0A 1.1 @2.0A 1.0			V
Maximum DC Reverse Current at Rated DC Blocking Voltage (Note 2)	I_{RRM}	TC=25°C 5 TC=150°C 500			uA
Typical Junction Capacitance(Note 3)	C_J			38	pF

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

Parameter	Symbol	GBL406	GBL408	GBL410	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 4.0	°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 75mmx75mmx1.6mm Cu Plate Heatsink.

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RATING AND CHARACTERISTIC CURVES

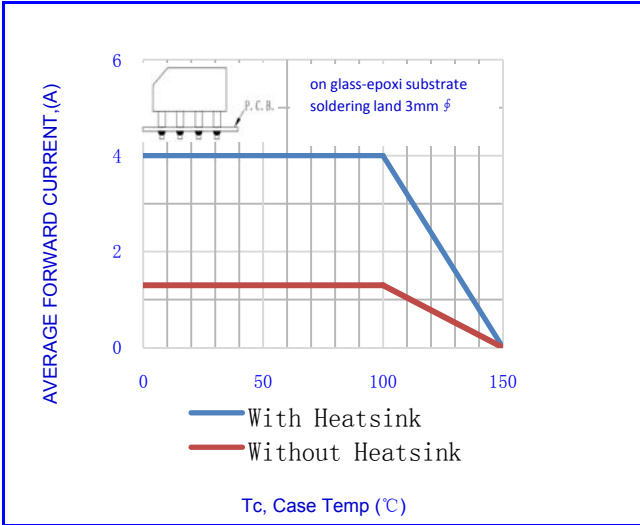


Fig.1-FORWARD CURRENT DERATING CURVE

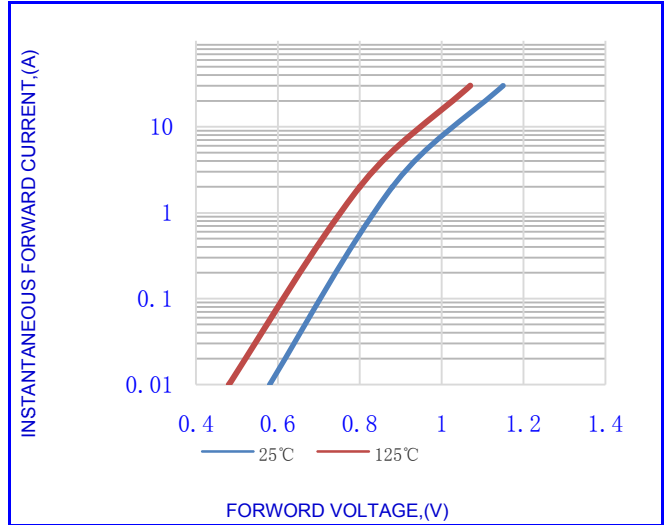


Fig.2- TYPICAL INSTANTANEOUS FORWARD

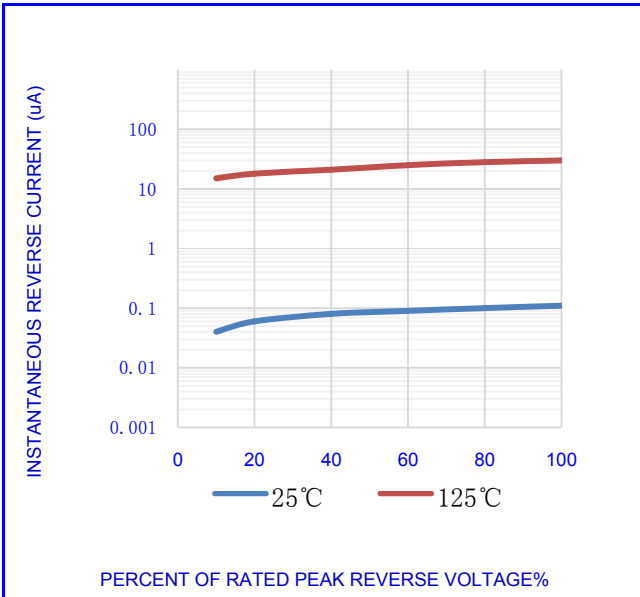


Fig.3- TYPICAL REVERSE CHARACTERISTICS

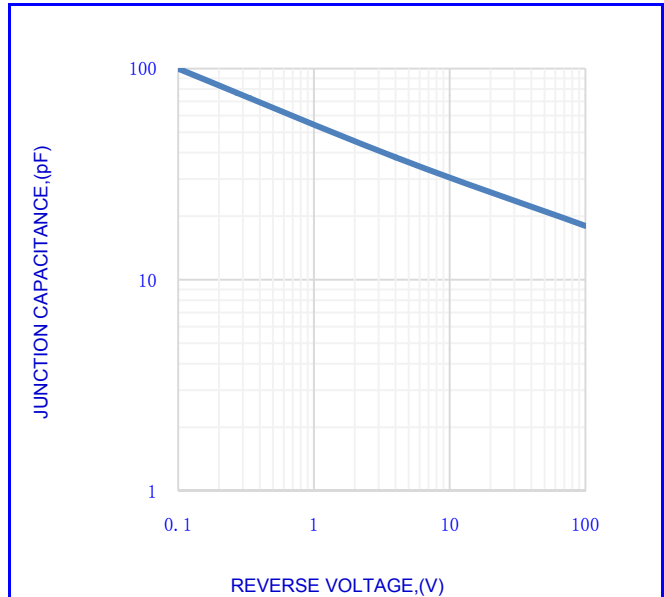


Fig.4- TYPICAL JUNCTION CAPACITANCE

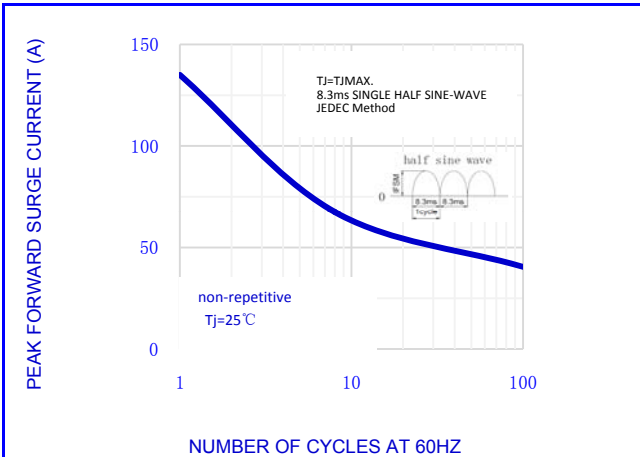


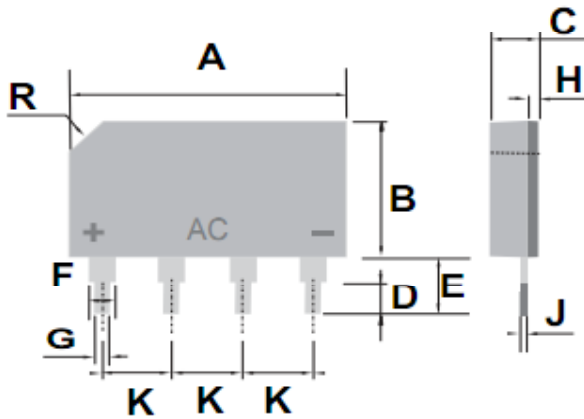
Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

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OUTLINE DRAWINGS



OUTLINE DIMENSIONS

DIM	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	19.80	-	20.20	0.780	-	0.795
B	10.80	-	11.20	0.425	-	0.441
C	3.30	-	3.70	0.130	-	0.146
D	3.00	3.50	4.00	0.118	0.138	0.157
E	5.10	-	6.50	0.201	-	0.256
F	1.50	-	2.09	0.059	-	0.082
G	0.95	-	1.15	0.037	-	0.045
J	0.40	-	0.60	0.016	-	0.024
K	4.88	-	5.28	0.192	-	0.208
H	0.60	-	1.05	0.024	-	0.041
R	-	2.50	-	-	0.098	-

GBL

Packing Information

Package	Pack	Quantity (pcs/box)	Box Size L×W×H(mm)	Carton Size L×W×H(mm)	Quantity (box/carton)
GBL	B/P	500	230*50*230	495*245*180	10

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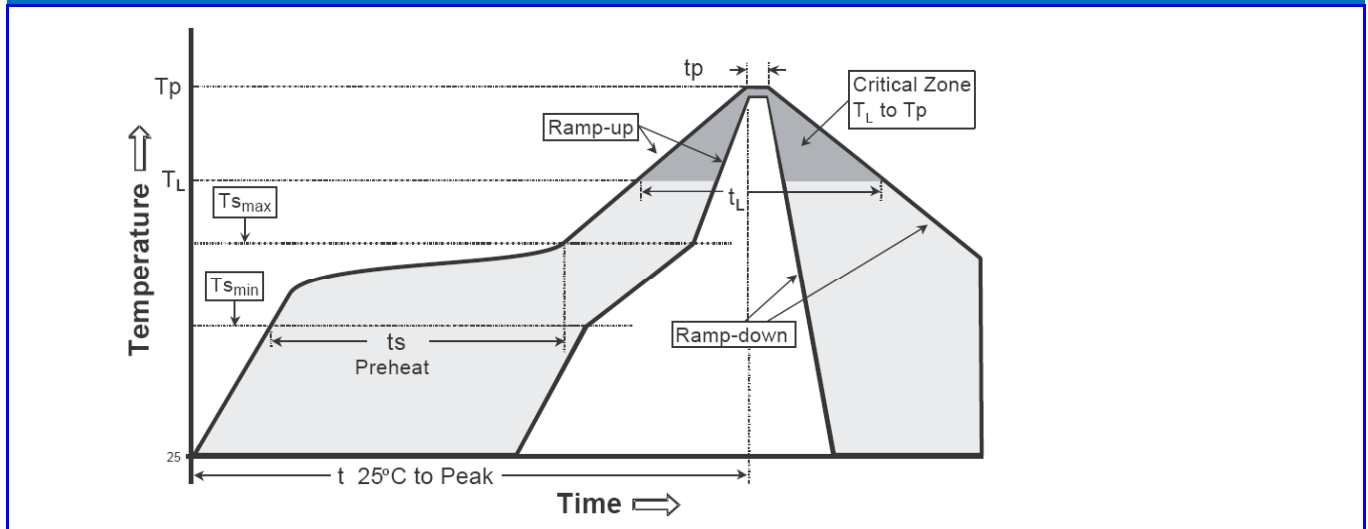
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Recommended wave soldering condition

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 _{smax} to T _p)	3°C/second max.	3°C/second max.
Preheat -Temperature Min(T _{S min}) -Temperature Max(T _{S max}) -Time(t _{s min} to t _{s max})	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (T _L) - Time (t _L)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(T _P)	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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