GBP406G THRU GBP410G

BRIDGE RECTIFIERS

VOLTAGE	600~1000 Volts	CURRENT	4.0 Ampers

FEATURES

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

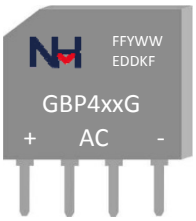
MECHANICAL DATA

- Case: GBP , olded lastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: As Marked on Case
- Mounting Position: Any
- Lead Free: For RoHS / Lead Free Version

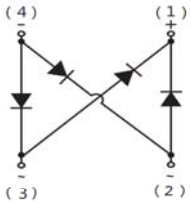
TYPICAL APPLICATIONS

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

GBP — Marking & Schematic diagram



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



Remark:

①. NH=niuhang trademark

②. FF=Product line code,According to actual changes
YWW=Data code,According to actual changes
EDDKF=Inernal code,According to actual changes

③. GBP4xxG=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℃ ambient temperature unless otherwise specified)

Parameter		Symbol	GBP406G	GBP408G	GBP410G	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)	with heatsink without heatsink	$I_{F(AV)}$	4.0 1.3			A
Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed On Rate Load (JEDEC Method)		I_{FSM}	120			A
Current Squared Time Per Diode(t<8.3ms)		I^2t	59.76			A^2sec

Electrical Characteristcs (Ratings at 25℃ ambient temperature unless otherwise specified)

Parameter		Symbol	GBP406G	GBP408G	GBP410G	Unit
Maximum Forward Voltage Per Diode (Note 1)	@4.0A @2.0A	V_{FM}	1.1 1.0			V
Maximum DC Reverse Current at Rated DC Blocking Voltage (Note 2)	T_C=25℃ T_C=125℃	I_{RRM}	5 300			uA
Typical Junction Capacitance Per Diode (Note 3)		C_J	45			pF

Thermal Characteristcs (Ratings at 25℃ ambient temperature unless otherwise specified)

Parameter	Symbol	GBP406G	GBP408G	GBP410G	Unit
Operating Junction Temperature Range	T_J	-55 to +150			℃
Storage Temperature Range	T_{STD}	-55 to +150			
Typical thermal resistance (Note 4)	$R_{\theta JA}$ $R_{\theta JC}$	34 15			℃/W

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

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Pb-Free RoHS COMPLIANT

RATING AND CHARACTERISTIC CURVES

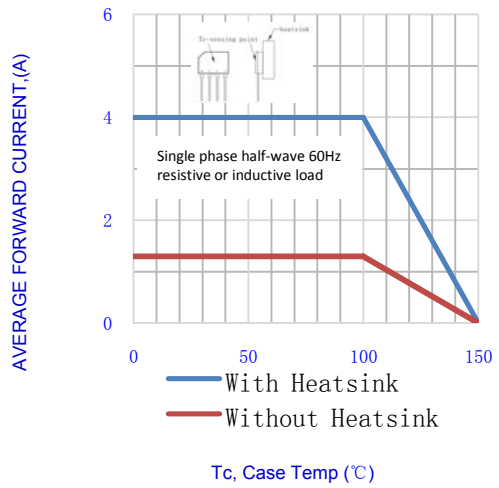

Fig.1-FORWARD CURRENT DERATING CURVE

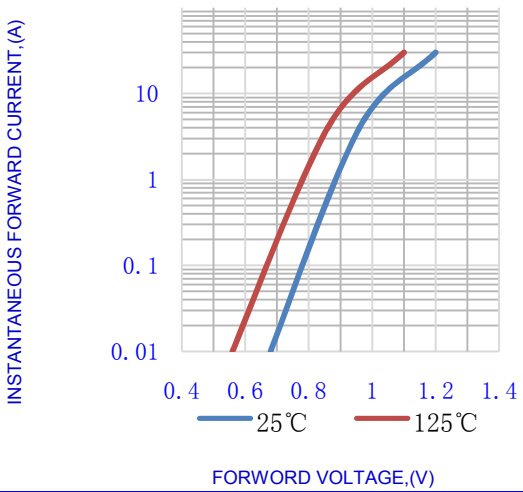

Fig.2- TYPICAL INSTANTANEOUS FORWARD

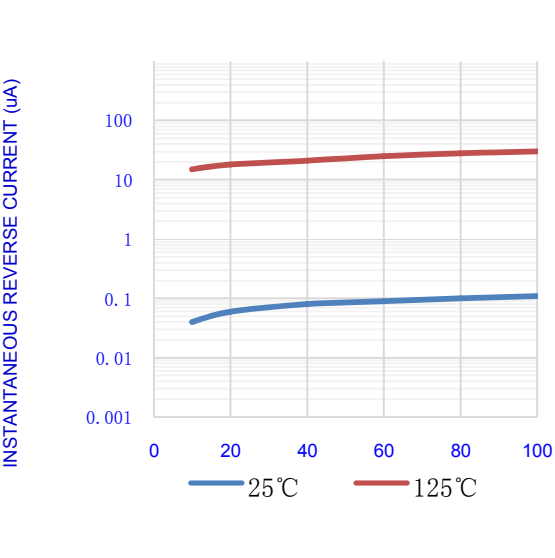

Fig.3- TYPICAL REVERSE CHARACTERISTICS

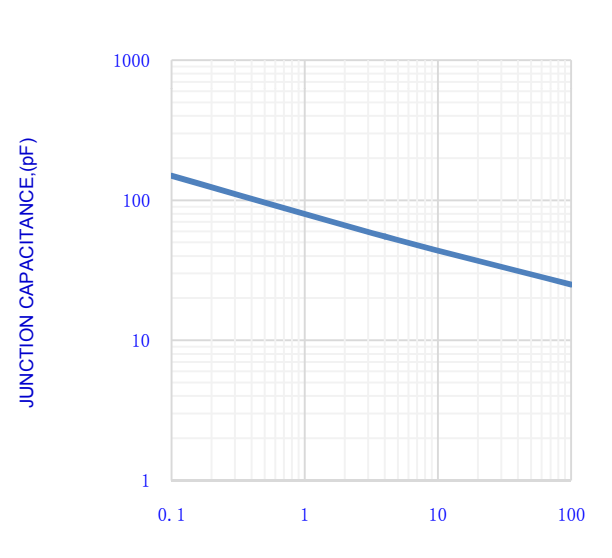

Fig.4- TYPICAL JUNCTION CAPACITANCE

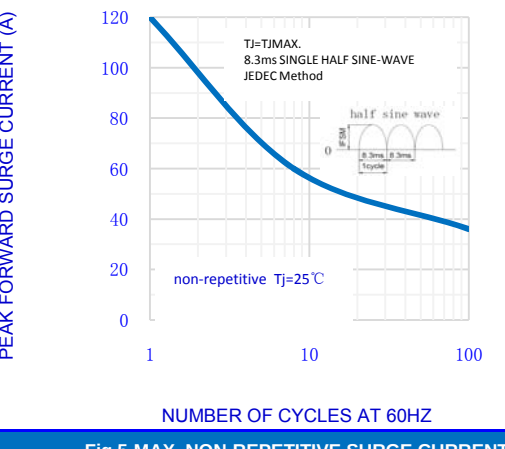

Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

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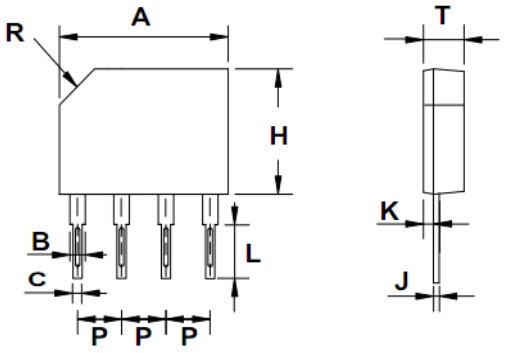
OUTLINE DRAWINGS



OUTLINE DIMENSIONS						
DIM	MILLIME TERS			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	490x240×180	18

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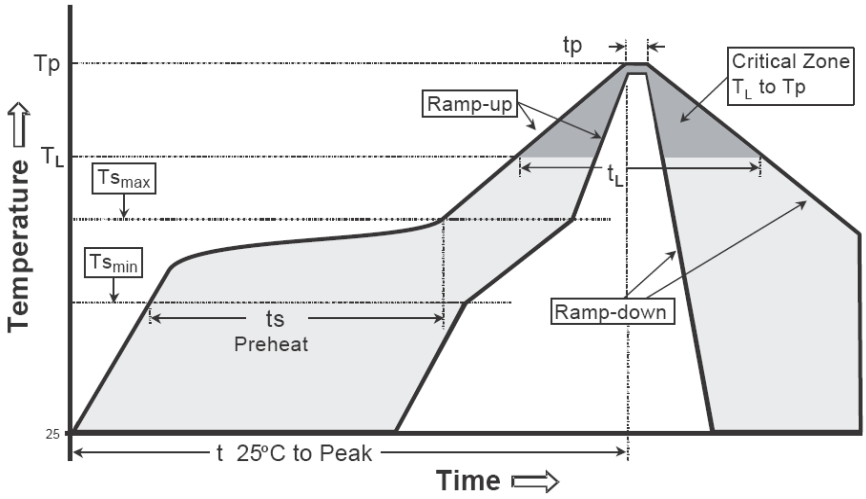
Recommended wave soldering condition

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 (Tsmax to Tp)	3°C/second max.	3°C/second max.
Preheat −Temperature Min(TS min) −Temperature Max(TS max) −Time(ts min to ts max)	 100°C 150°C 60-120 seconds	 150°C 200°C 60-180 seconds
Time maintained above: −Temperature (TL) − Time (tL)	 183°C 60-150 seconds	 217°C 60-150 seconds
Peak Temperature(TP)	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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