RGBU1506 THRU RGBU1510

FAST RECOVERY BRIDGE RECTIFIERS

VOLTAGE	600~1000 Volts	CURRENT	15.0 Ampers	GBU	Marking & Schematic diagram

FEATURES

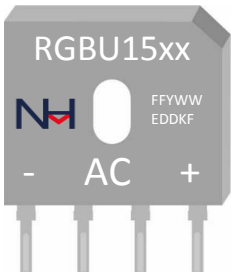
- Glass passivated die construction
- low forward voltage drop
- High current capability
- High surge current capability
- Plastic material-UL flammability 94V-0

MECHANICAL DATA

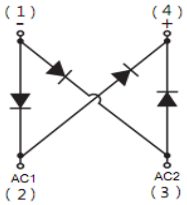
- Case: GBU , olded lastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: As Marked on Case
- Mounting Position: Any
- Lead Free: For RoHS / Lead Free Version

TYPICAL APPLICATIONS

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



PIN	DISCRIPTION
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=Inernal code,According to actual changes

③. RGBU15xx=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	RGBU1506	RGBU1508	RGBU1510	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	$I_{F(AV)}$	15			A
	without heatsink		3.2			
Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed On Rate Load (JEDEC Method)		I_{FSM}	240			A
Current Squared Time Per Diode(t<8.3ms)		I^2t	239.04			A^2sec

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

Parameter		Symbol	RGBU1506	RGBU1508	RGBU1510	Unit
Maximum Forward Voltage Per Diode @7.5A (Note 1)		V_{FM}	1.3			V
Maximum DC Reverse Current at Rated DC Blocking Voltage (Note 2)	T_C=25℃	I_{RRM}	10			uA
	T_C=125℃		500			
Typical Junction Capacitance Per Diode (Note 3)		C_J	65			pF
Maximum Reverse Recovery Time (Note 4)		T_{RR}	150	250	500	nS

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

Parameter	Symbol	RGBU1506	RGBU1508	RGBU1510	Unit
Operating Junction Temperature Range	T_J	-55 to +150			℃
Storage Temperature Range	T_{STD}	-55 to +150			
Typical thermal resistance (Note 5)	$R_{\theta JA}$	23.0			℃/W
	$R_{\theta JC}$	1.8			

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. Reverse Recovery Time test condition: IF=0.5A, IR=1.0A, IRR=0.25A
5. Device mounted on Device mounted on 75mm x 45mm x 4.5mm Aluminum Plate Heatsink.

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RATING AND CHARACTERISTIC CURVES

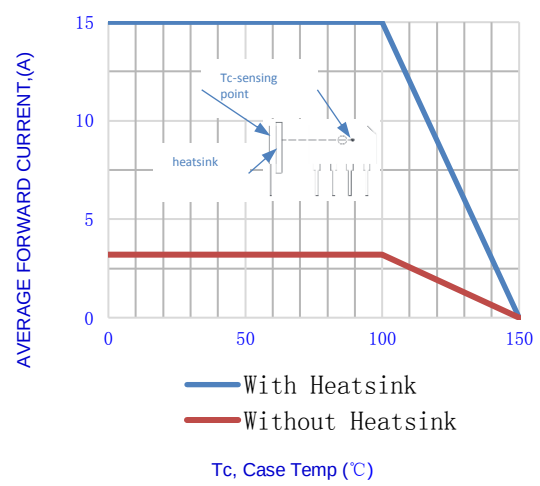

Fig.1-FORWARD CURRENT DERATING CURVE

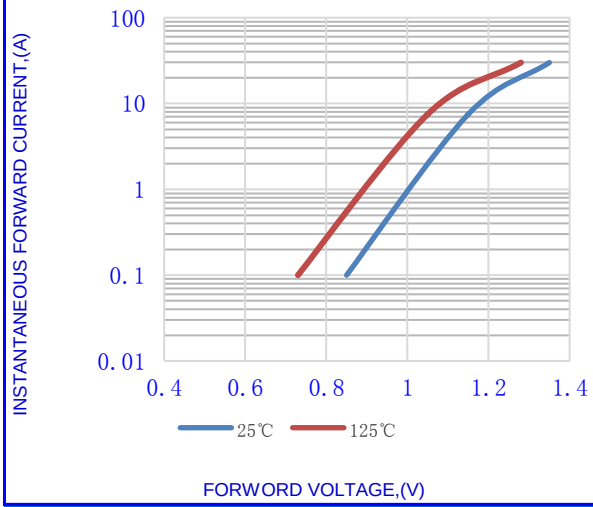

Fig.2- TYPICAL INSTANTANEOUS FORWARD

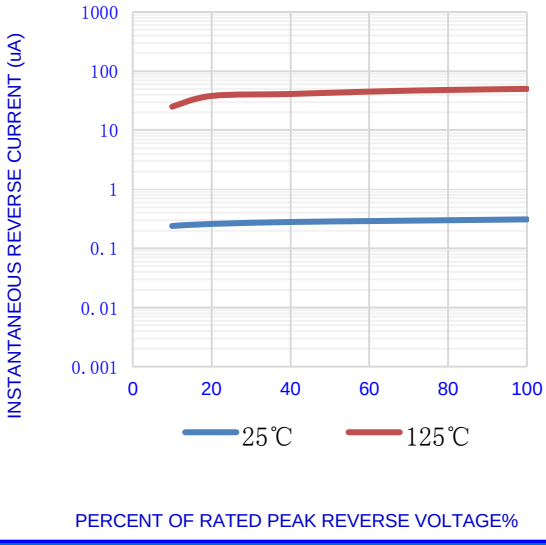

Fig.3- TYPICAL REVERSE CHARACTERISTICS

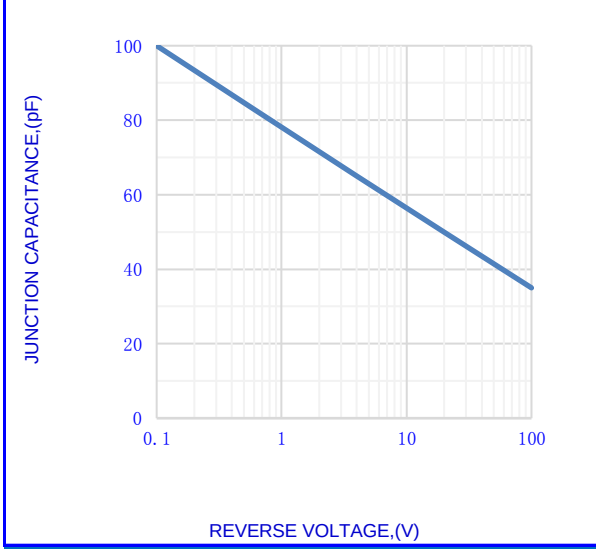

Fig.4- TYPICAL JUNCTION CAPACITANCE

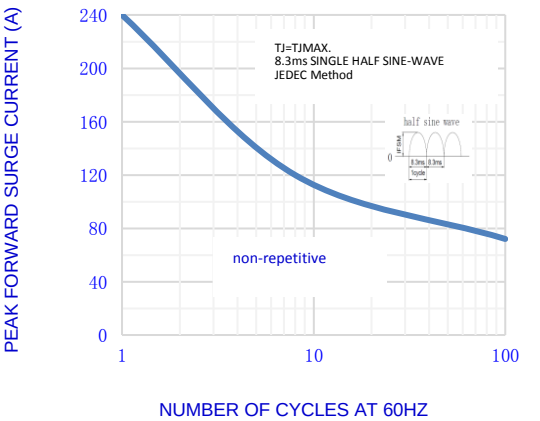

Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

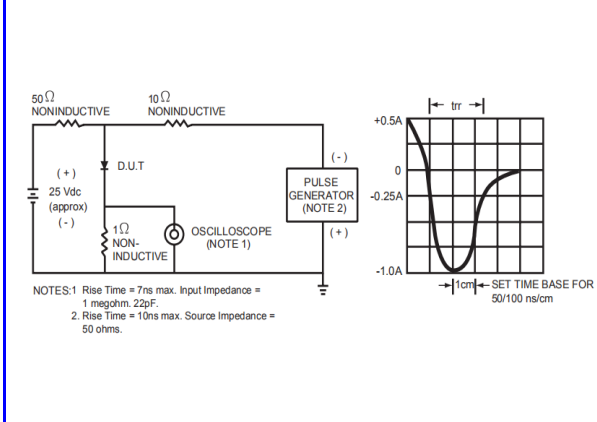

Fig.6- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

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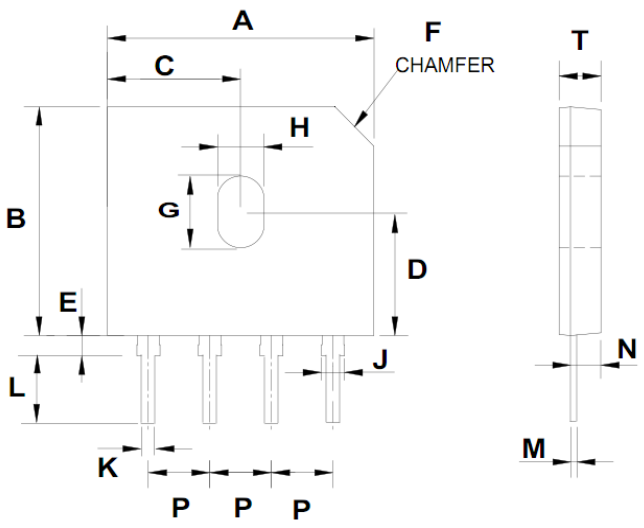
FAST RECOVERY BRIDGE RECTIFIERS

OUTLINE DRAWINGS

GBU



OUTLINE DIMENSIONS						
DIM	MILLIME TERS			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	5.60	6.00	6.40	0.22	0.24	0.25
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

Packing Information

Package	Pack	Quantity (pcs/box)	Box Size L×W×H (mm)	Carton Size L×W×H (mm)	Quantity (pcs/carton)
GBU	B/P	250	230×45×120	380×240×190	3000

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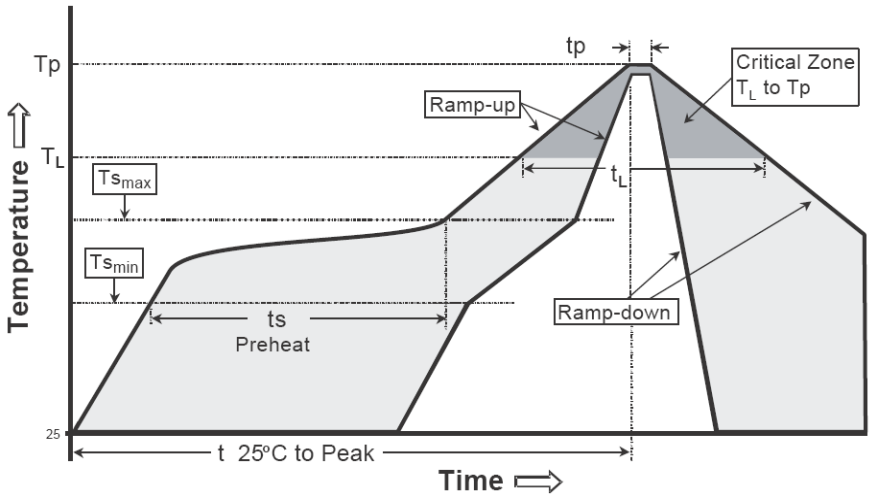
Recommended wave soldering condition

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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