GBU15A THRU GBU15M

List

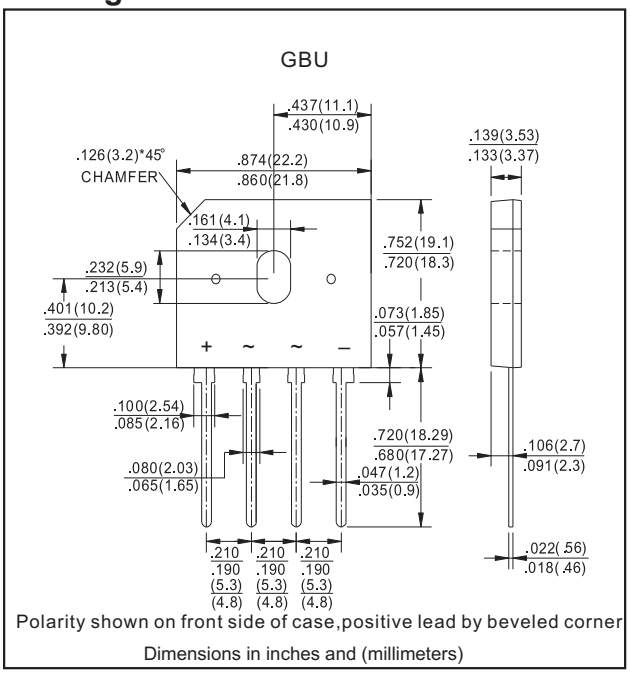
GBU15A THRU GBU15M

15.0A Glass Passivated Single-Phase Bridge Rectifiers-50-1000V

Features

- Surge overload ratings to 240 amperes peak.
- Recommended for non-automatic applications.
- Ideal for & save space on printed circuit board.
- Applicable for automatic insertion.
- Reliable low cost construction utilizing molded plastic technology results in inexpensive product.
- Glass passivated chip junctions.
- Lead-free parts meet RoHS requirments.
- Suffix "-H" indicates Halogen free parts, ex. GBU15A-H.

Package outline



Polarity shown on front side of case,positive lead by beveled corner

Dimensions in inches and (millimeters)

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, GBU
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : marked on body
- Mounting Position : Any
- Weight : Approximated 4.00 gram

Maximum ratings and Electrical characteristics (AT T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	(with heatsink Note 1) at T_C=100℃（without heatsink）	I_O			15.0 3.2	A
Forward surge current	8.3ms single half sine-wave (JEDEC methode)	I_{FSM}			240	A
Reverse current	V_R = V_{RRM} T_J = 25°C	I_R			10.0	uA
	V_R = V_{RRM} T_J = 125°C				500	
I^2t Rating for fusing	t < 8.3 ms	I^2t			239	A^2s
Typical junction capacitance per element	Measured at 1.0MHz and applied reverse voltage of 4.0 VDC	C_J		70		pF
Typical thermal resistance	Junction to case	$R_{\theta JC}$		2.2		°C/W
Storage temperature		T_{STG}	-65		+175	°C

Note 1. Device mounted on 100mm*100mm*1.6mm Cu plate heatsink.

SYMBOLS	V_{RRM} *1 (V)	V_{RMS} *2 (V)	V_R *3 (V)	V_F *4 (V)	Operating temperature T_J, (°C)
GBU15A	50	35	50	1.10	-55 to +150
GBU15B	100	70	100		
GBU15D	200	140	200		
GBU15G	400	280	400		
GBU15J	600	420	600		
GBU15K	800	560	800		
GBU15M	1000	700	1000		

*1 Repetitive peak reverse voltage

*2 RMS voltage

*3 Continuous reverse voltage

*4 Maximum forward voltage@I_F=7.5A

Rating and characteristic curves (GBU15A THRU GBU15M)

FIG.1 - FORWARD CURRENT DERATING CURVE

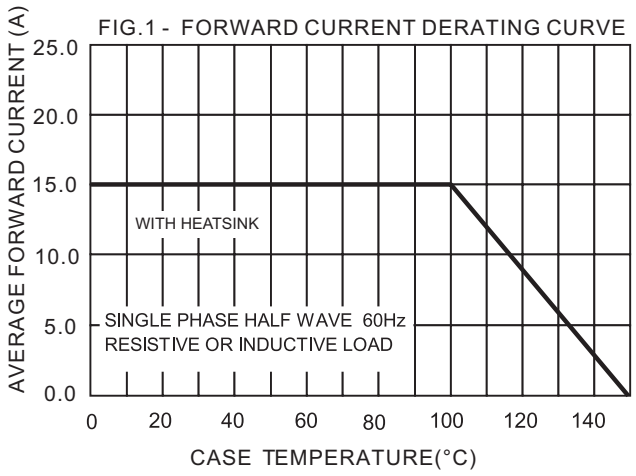


FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

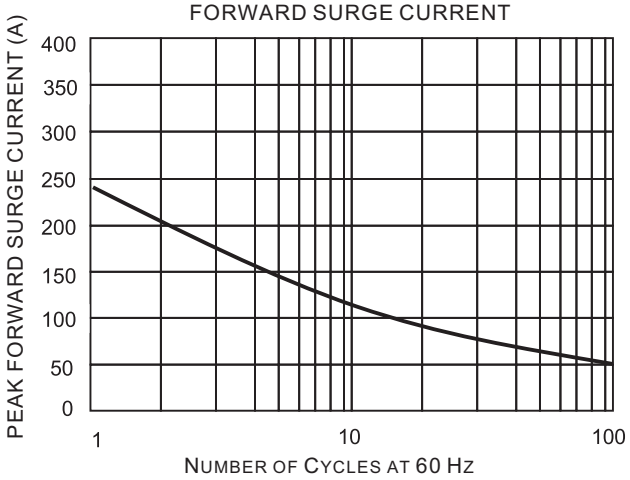


FIG. 3 - TYPICAL INSTANTANEOUR FORWARD CHARACTERISTICS

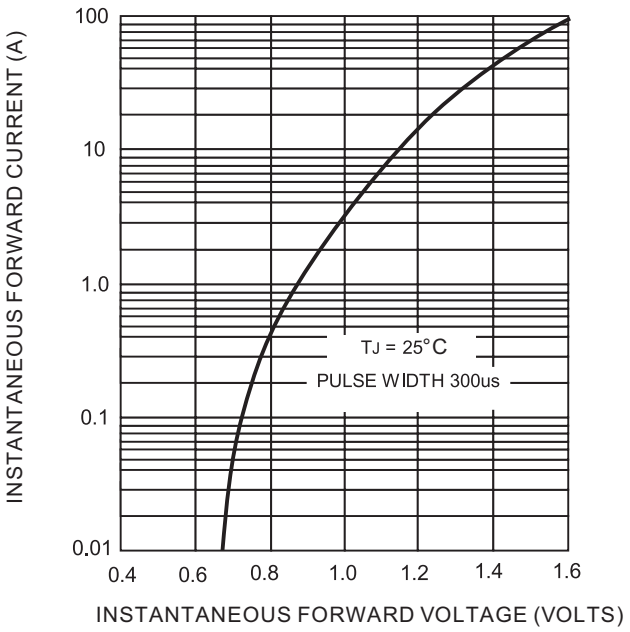
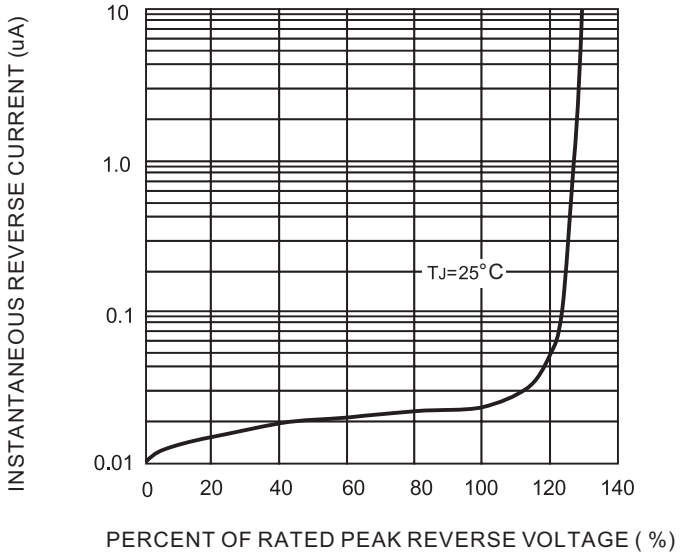
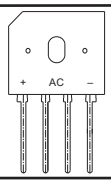
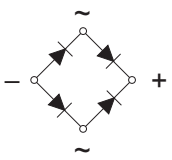


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS



GBU15A THRU GBU15M

Pinning information

Simplified outline	Symbol
	

Marking

Type number	Marking code
GBU15A	GBU15A
GBU15B	GBU15B
GBU15D	GBU15D
GBU15G	GBU15G
GBU15J	GBU15J
GBU15K	GBU15K
GBU15M	GBU15M

Tube packing

PACKAGE	TUBE (pcs)	TUBE SIZE (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
GBU	20	474*42*7	496*225*90	1,000	6.5

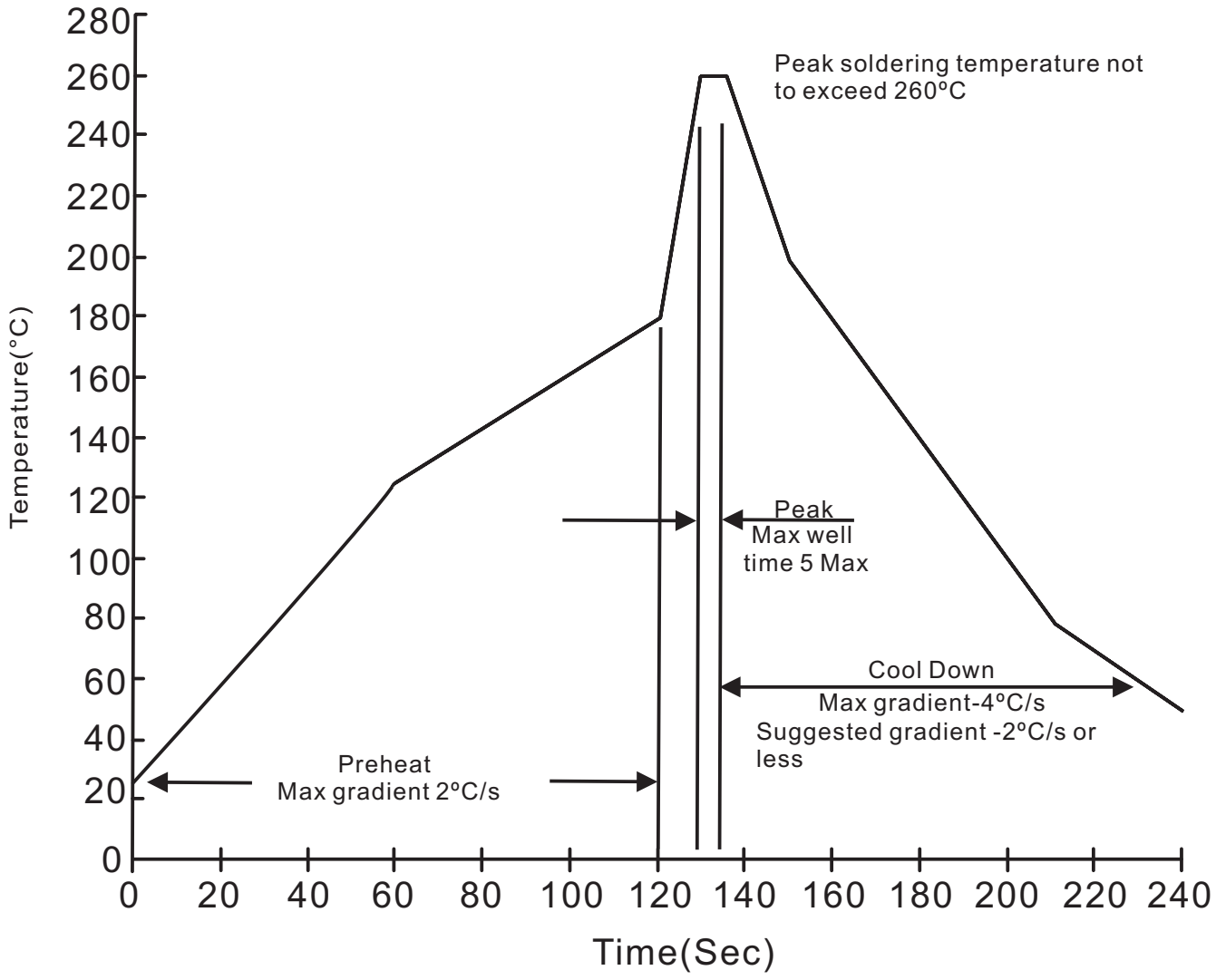
BULK PACKING

DEVICE CASE TYPE	Q'TY 1 (PCS / BOX)	INNER BOX SIZE (m/m)	CARTON SIZE (m/m)	Q'TY 2 (PCS / CARTON)	APPROX. CROSS WEIGHT(kg)
GBU	800	350 * 337 * 44	375 * 360 * 213	3,200	16.9

GBU15A THRU GBU15M

Suggested thermal profiles for soldering processes

1.Lead free temperature profile wave-soldering



GBU15A THRU GBU15M

High reliability test capabilities

Item Test	Conditions	Reference
1. Solder Resistance	at 260±5°C for 10±2sec. immerse body into solder 1/16"±1/32"	MIL-STD-750D METHOD-2031
2. Solderability	at 245±5°C for 5 sec.	MIL-STD-202F METHOD-208
3. High Temperature Reverse Bias	V_R=80% rate at T_J=150°C for 168 hrs.	MIL-STD-750D METHOD-1038
4. Forward Operation Life	Rated average rectifier current at T_A=25°C for 500hrs.	MIL-STD-750D METHOD-1027
5. Intermittent Operation Life	T_A = 25°C, I_F = I_O On state: power on for 5 min. off state: power off for 5 min. on and off for 500 cycles.	MIL-STD-750D METHOD-1036
6. Pressure Cooker	15P_{SIG} at T_A=121°C for 4 hrs.	JESD22-A102
7. Temperature Cycling	-55°C to +125°C dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
8 Forward Surge	8.3ms single half sine-wave , one surge.	MIL-STD-750D METHOD-4066-2
9. Humidity	at T_A=85°C, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
10. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031