

GBJ50A THRU GBJ50M

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GBJ50A THRU GBJ50M

50.0A Glass Passivated Single Phase Bridge Rectifiers 50 - 1000V

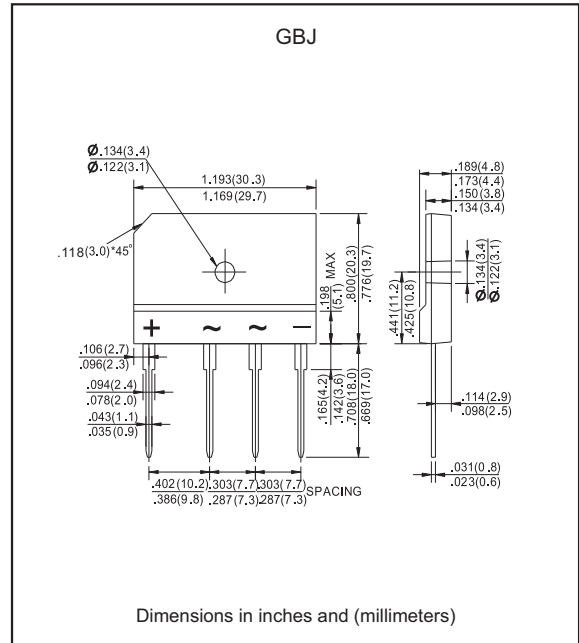
Features

- Rating to 1000V PRV
- Ideal for printed circuit board
- Low forward voltage drop, high current capability
- Reliable low cost construction utilizing molded plastic technique results in inexpensive product
- Glass passivated chip junction.
- Lead-free parts meet RoHS requirements.
- UL recognized file # E321971
- Suffix "-H" indicates Halogen free parts, ex. GBJ50A-H.

Mechanical data

- Epoxy: UL94-V0 rated flame retardant
- Case : Molded plastic, GBJ
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : marked on body
- Mounting Position : Any
- Weight : Approximated 7.00 gram

Package outline



Maximum ratings and Electrical Characteristics (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Average forward rectified current	@ $T_c=100^{\circ}\text{C}$ with heatsink (Note 1 & Note 2)	$I_{F(AV)}$			50	A
Forward surge current	8.3ms single half sine-wave (JEDEC methode)	I_{FSM}			400	A
Reverse current	$V_R = V_{RRM} \quad T_J = 25^{\circ}\text{C}$	I_R			10.0	μA
	$V_R = V_{RRM} \quad T_J = 125^{\circ}\text{C}$				500	
Rating for fusing	$t < 8.3 \text{ ms}$	I^2t			660	A^2s
Typical thermal resistance	Junction to case (Note 2)	$R_{\theta JC}$		0.6		$^{\circ}\text{C/W}$
Storage temperature		T_{STG}	-55		+150	$^{\circ}\text{C}$

Note: 1. Device mounted on 300mm*300mm*1.6mm Cu plate heatsink.
2. The typical data above is for reference only.

SYMBOLS	V_{RRM}^{*1} (V)	V_{RMS}^{*2} (V)	V_R^{*3} (V)	V_F^{*4} (V)	Operating temperature $T_J, (^{\circ}\text{C})$
GBJ50A	50	35	50	1.10	-55 to +150
GBJ50B	100	70	100		
GBJ50D	200	140	200		
GBJ50G	400	280	400		
GBJ50J	600	420	600		
GBJ50K	800	560	800		
GBJ50M	1000	700	1000		

*1 Repetitive peak reverse voltage

*2 RMS voltage

*3 Continuous reverse voltage

*4 Maximum forward voltage @ $I_F=25\text{A}$

Rating and characteristic curves (GBJ50A THRU GBJ50M)

Fig.1 FORWARD CURRENT DERATING CURVE

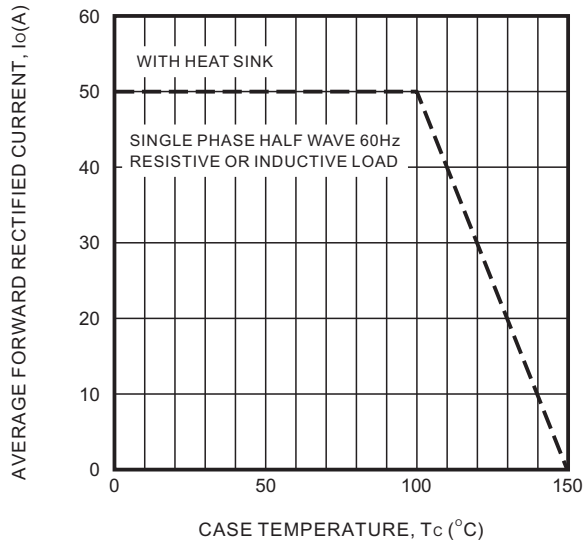


Fig.2 FORWARD SURGE CURRENT DERATING CURVE

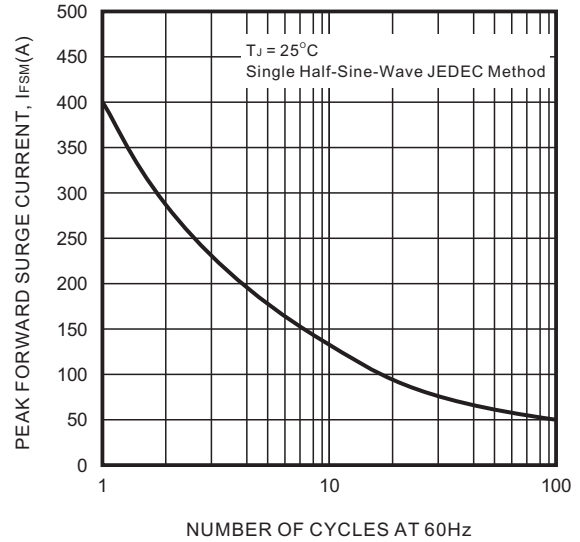


Fig.3 TYPICAL REVERSE CHARACTERISTICS

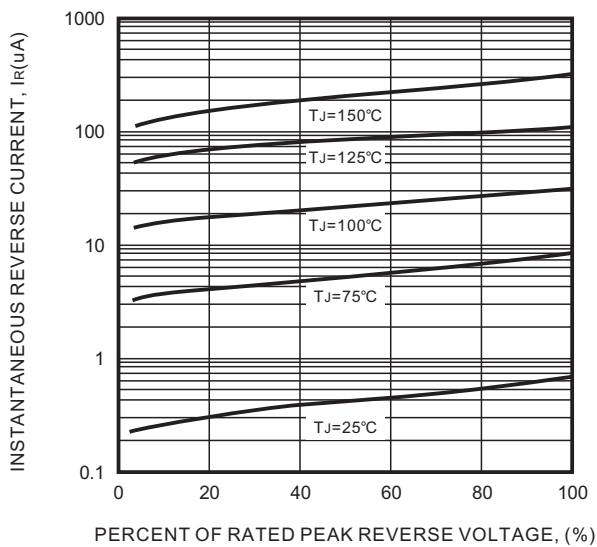
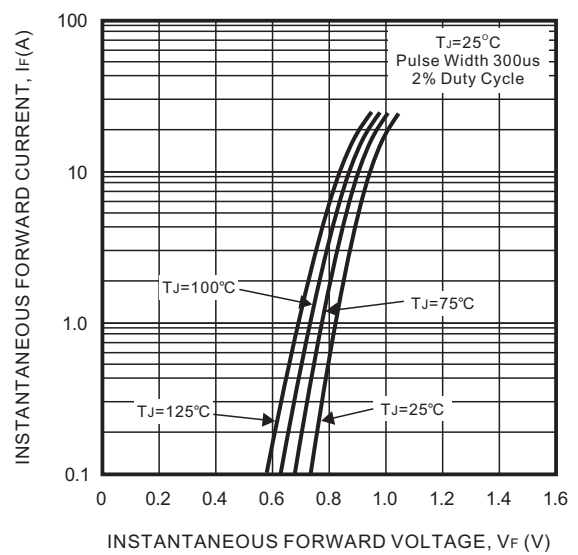
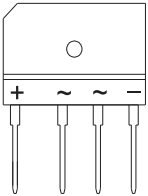
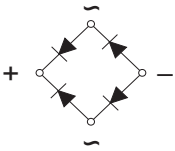


Fig.4 TYPICAL FORWARD CHARACTERISTICS



GBJ50A THRU GBJ50M

Pinning information

Simplified outline	Symbol
	

Marking

Type number	Marking code
GBJ50A	GBJ50A
GBJ50B	GBJ50B
GBJ50D	GBJ50D
GBJ50G	GBJ50G
GBJ50J	GBJ50J
GBJ50K	GBJ50K
GBJ50M	GBJ50M

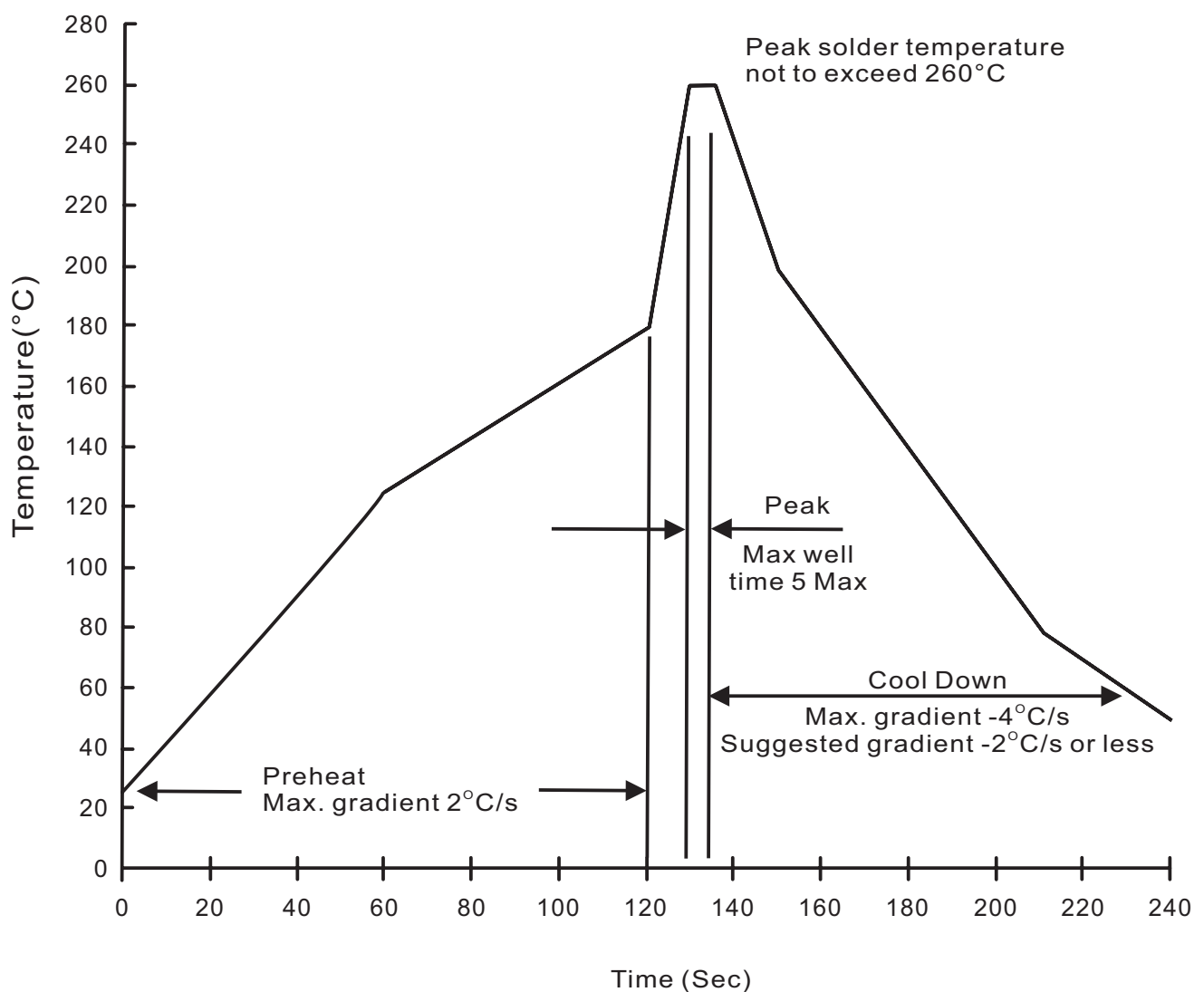
Tube packing

PACKAGE	TUBE (pcs)	TUBE SIZE (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
GBJ	15	475*42.0*8.1	496*224*101	750	7.8

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Suggested thermal profiles for soldering processes

1. Lead free temperature profile wave-soldering



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High reliability test capabilities

Item Test	Conditions	Reference
1. Solder Resistance	at $260 \pm 5^{\circ}\text{C}$ for $10 \pm 2\text{sec.}$ immerse body into solder $1/16" \pm 1/32"$	MIL-STD-750D METHOD-2031
2. Solderability	at $245 \pm 5^{\circ}\text{C}$ for 5 sec.	MIL-STD-202F METHOD-208
3. High Temperature Reverse Bias	$V_R = 80\%$ rate at $T_J = 150^{\circ}\text{C}$ for 168 hrs.	MIL-STD-750D METHOD-1038
4. Forward Operation Life	Rated average rectifier current at $T_A = 25^{\circ}\text{C}$ for 500hrs.	MIL-STD-750D METHOD-1027
5. Intermittent Operation Life	$T_A = 25^{\circ}\text{C}$, $I_F = I_O$ 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 $T_A = 121^{\circ}\text{C}$ for 4 hrs.	JESD22-A102
7. Temperature Cycling	-55°C to $+125^{\circ}\text{C}$ 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 $T_A = 85^{\circ}\text{C}$, 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