

GBJ4A THRU GBJ4M

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GBJ4A THRU GBJ4M

4.0A Glass Passivated Single Phase Bridge Rectifiers - 50 - 1000V

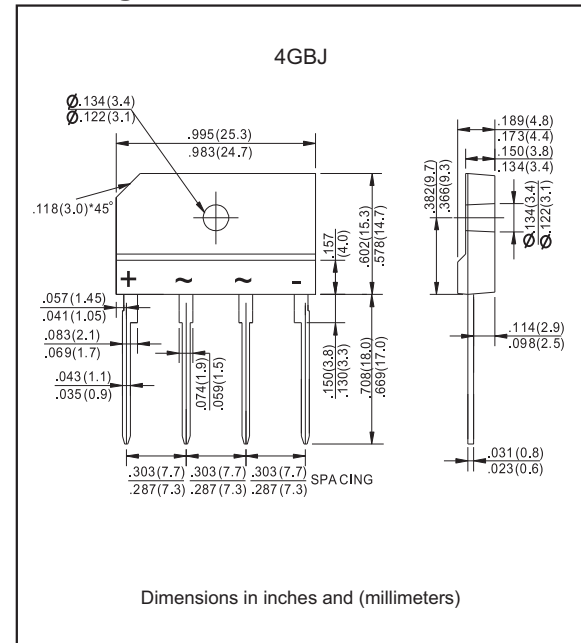
Features

- Surge overload rating -120 amperes peak
- Ideal for printed circuit board
- High forward surge current capability
- Reliable low cost construction utilizing molded plastic technique
- Lead-free parts meet RoHS requirements
- UL recognized file # E321971
- Suffix "-H" indicates Halogen free parts, ex. GBJ4A-H

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, 4GBJ
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : marked on body
- Mounting Position : Any
- Weight : Approximated 4.265 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
Maximum average forward rectified current	with heatsink Note 1 @ $T_c=100^{\circ}\text{C}$ without heatsink	$I_{F(AV)}$			4.0 2.4	A
Forward surge current	8.3ms single half sine-wave (JEDEC methode)	I_{FSM}			120	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			60	A^2s
Typical Junction capacitance Per Element	Measured at 1.0MHz and applied reverse voltage of 4.0V DC	C_J		45		pF
Typical thermal resistance	Junction to case	$R_{\theta JC}$		2.2		$^{\circ}\text{C/W}$
Storage temperature		T_{STG}	-65		+175	$^{\circ}\text{C}$

Note1: Device mounted on 50mm*50mm*1.6mm Cu plate heatsink.

SYMBOLS	V_{RRM}^{*1} (V)	V_{RMS}^{*2} (V)	V_R^{*3} (V)	V_F^{*4} (V)	Operating temperature $T_J, (^{\circ}\text{C})$
GBJ4A	50	35	50	1.10	-55 to +150
GBJ4B	100	70	100		
GBJ4D	200	140	200		
GBJ4G	400	280	400		
GBJ4J	600	420	600		
GBJ4K	800	560	800		
GBJ4M	1000	700	1000		

*1 Repetitive peak reverse voltage

*2 RMS voltage

*3 Continuous reverse voltage

*4 Maximum forward voltage @ $I_F=4.0\text{Adc}$

Rating and characteristic curves (GBJ4A THRU GBJ4M)

FIG. 1-OUTPUT RECTIFIED CURRENT DERATING CURVE

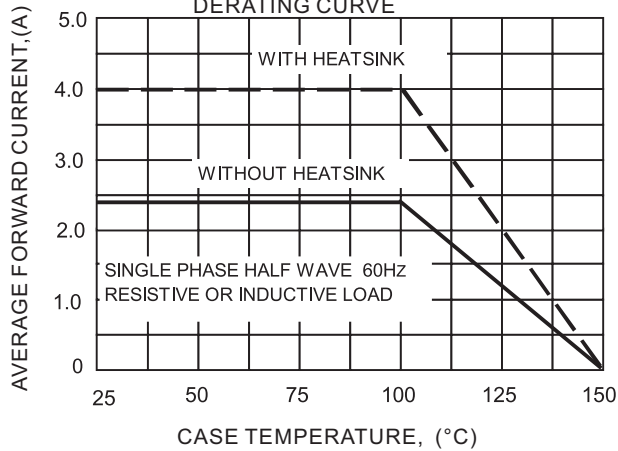


FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

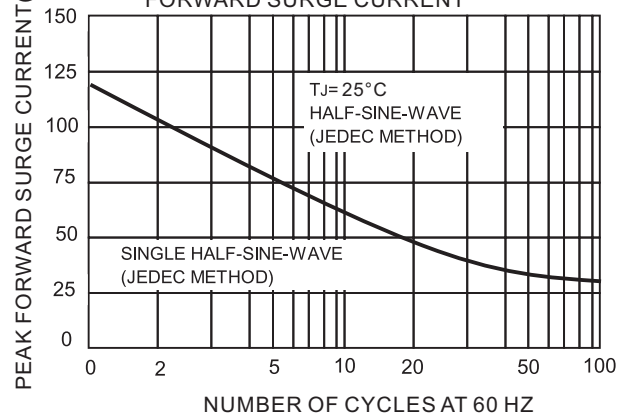


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

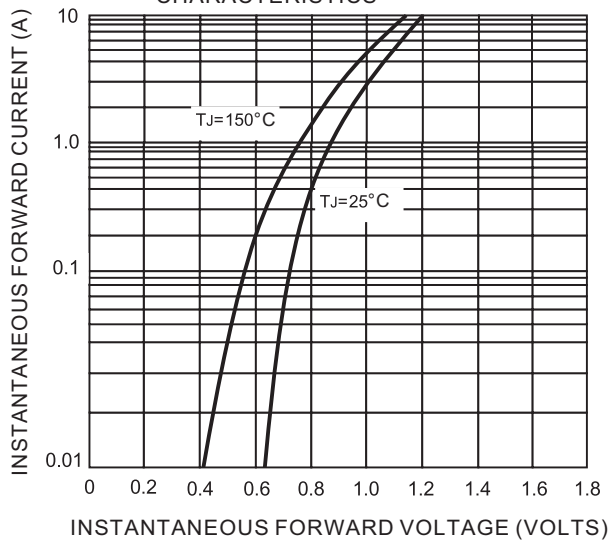


FIG. 4 - TYPICAL REVERSE LEAKAGE CHARACTERISTICS

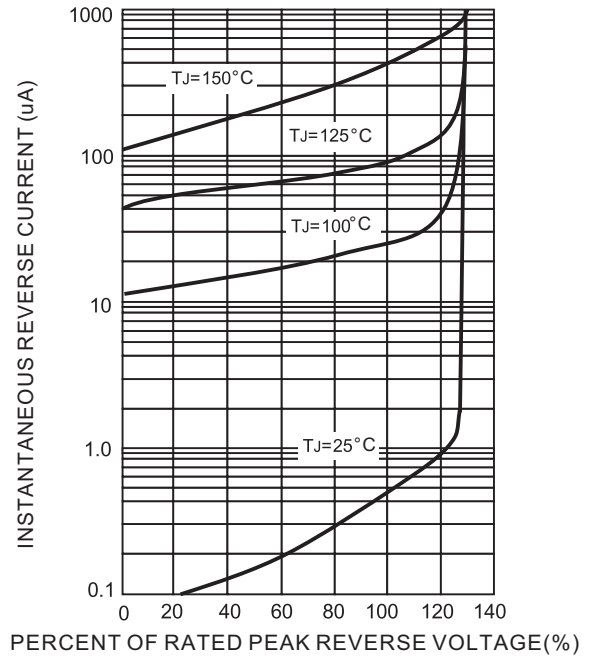
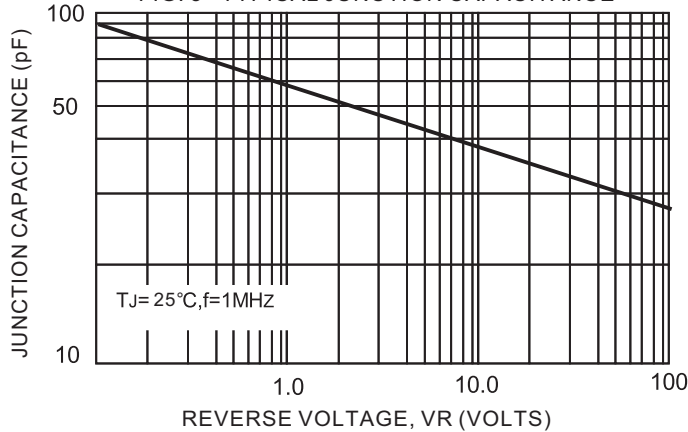
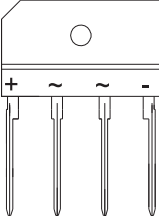
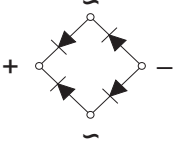


FIG. 5 - TYPICAL JUNCTION CAPACITANCE



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Pinning information

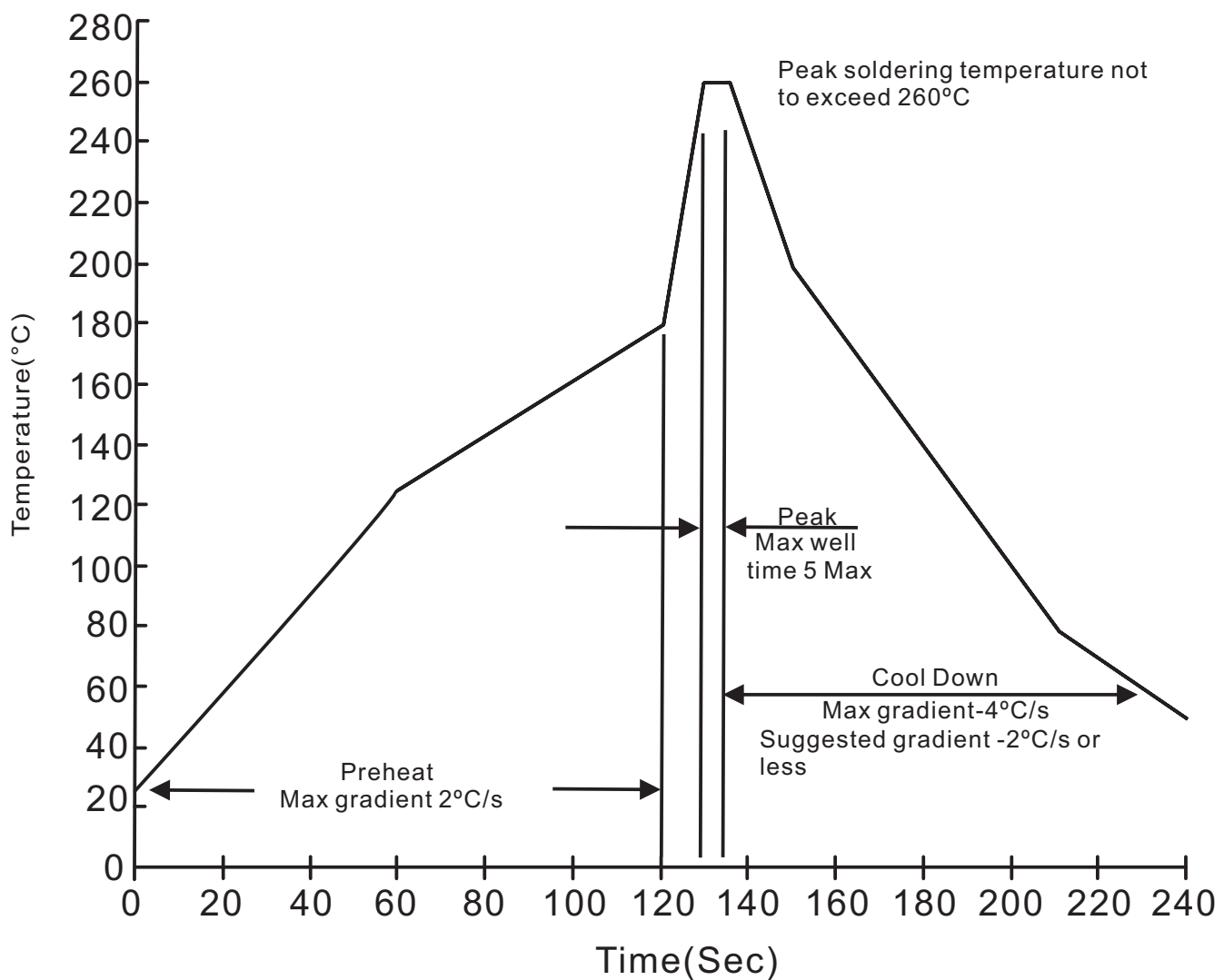
Simplified outline	Symbol
	

Marking

Type number	Marking code
GBJ4A	GBJ4A
GBJ4B	GBJ4B
GBJ4D	GBJ4D
GBJ4G	GBJ4G
GBJ4J	GBJ4J
GBJ4K	GBJ4K
GBJ4M	GBJ4M

Tube packing

PACKAGE	TUBE (pcs)	TUBE SIZE (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
4GBJ	20	530*42.0*8.1	548*226*100	1,000	7.1

GBJ4A THRU GBJ4M**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