

4GBJ6A THRU 4GBJ6M

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4GBJ6A THRU 4GBJ6M

6.0A Glass Passivated Single Phase Bridge Rectifiers- 50 ~ 1000V

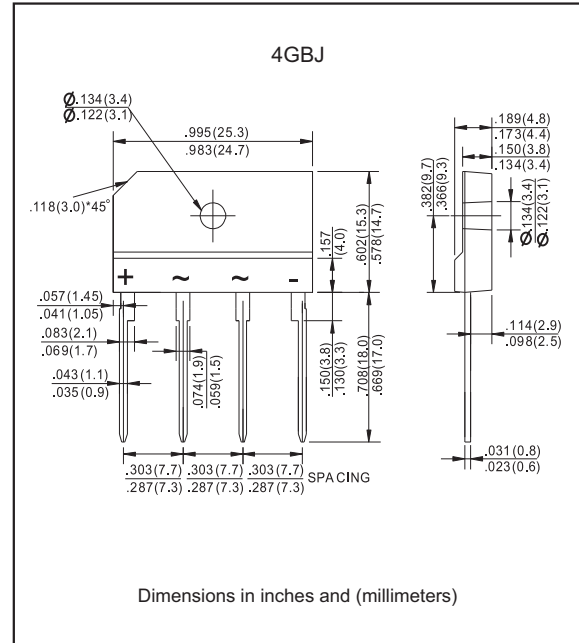
Features

- 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. 4GBJ6A-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	$I_{F(AV)}$			6.0 2.8	A
Forward surge current	8.3ms single half sine-wave (JEDEC method)	I_{FSM}			170	A
Reverse current	$V_R = V_{RRM}$ $T_J = 25^\circ\text{C}$	I_R			10.0	μA
	$V_R = V_{RRM}$ $T_J = 125^\circ\text{C}$				500	
Rating for fusing	$t < 8.3$ ms	I^2t			120	A^2s
Typical Junction capacitance Per Element	Measured at 1.0MHz and applied reverse voltage of 4.0V DC	C_J		55		pF
Typical thermal resistance	Junction to case (with heatsink (Note1))	$R_{\theta JC}$		1.8		$^\circ\text{C/W}$
Storage temperature		T_{STG}	-65		+175	$^\circ\text{C}$

Note: 1. Device mounted on 75mm*75mm*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 , ($^\circ\text{C}$)
4GBJ6A	50	35	50	1.10	-55 to +150
4GBJ6B	100	70	100		
4GBJ6D	200	140	200		
4GBJ6G	400	280	400		
4GBJ6J	600	420	600		
4GBJ6K	800	560	800		
4GBJ6M	1000	700	1000		

*1 Repetitive peak reverse voltage

*2 RMS voltage

*3 Continuous reverse voltage

*4 Maximum forward voltage @ $I_F=3.0\text{Adc}$

Rating and characteristic curves (4GBJ6A THRU 4GBJ6M)

FIG. 1 - FORWARD CURRENT DERATING CURVE

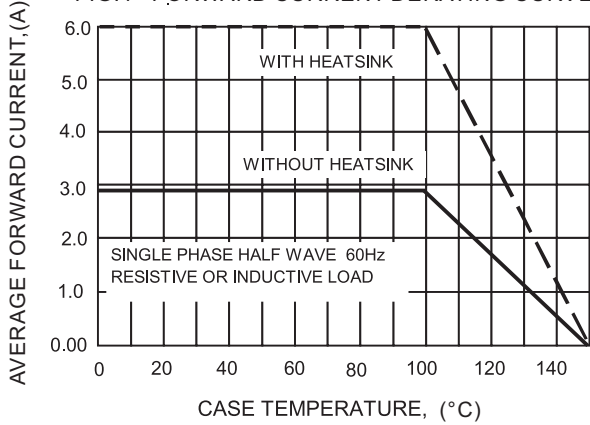


FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

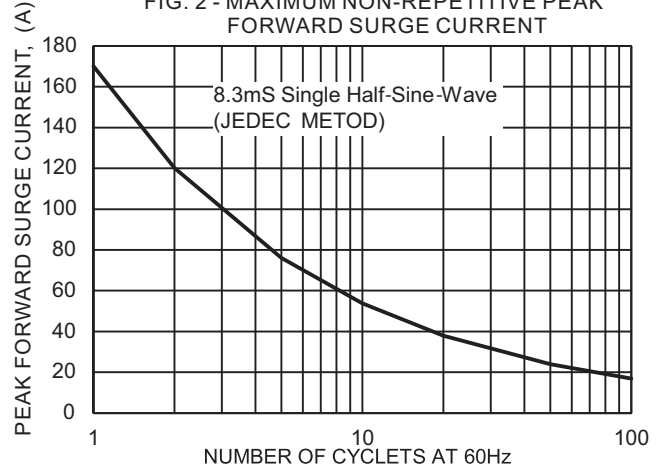


FIG. 3 - TYPICAL FORWARD CHARACTERISTICS

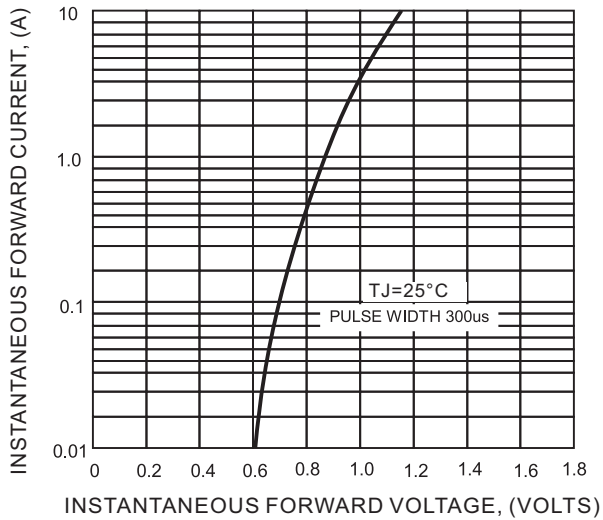


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

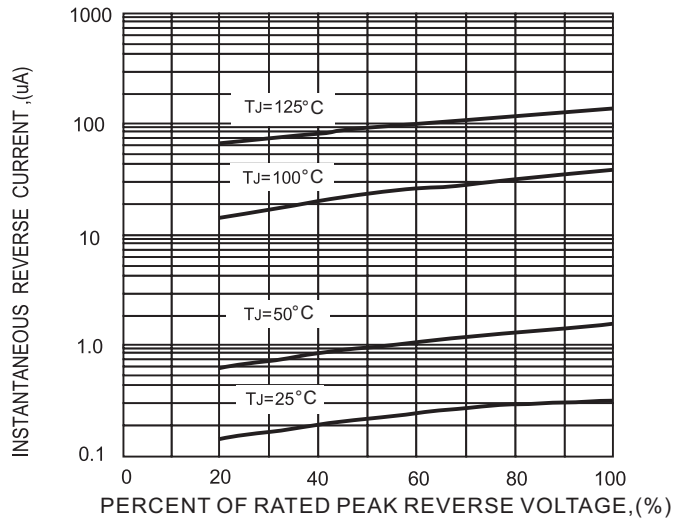
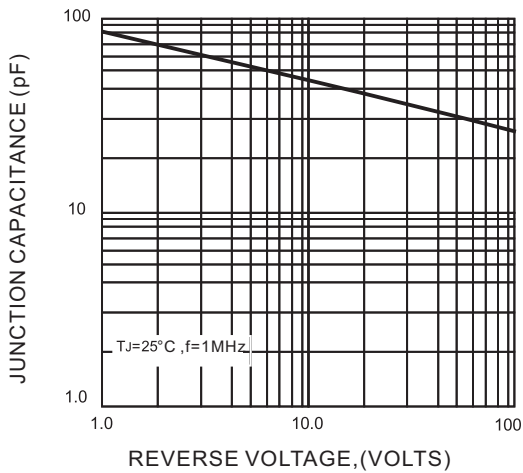
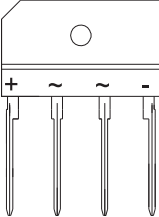
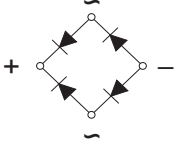


FIG. 5 - TYPICAL JUNCTION CAPACITANCE



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Pinning information

Simplified outline	Symbol
	

Marking

Type number	Marking code
4GBJ6A	4GBJ6A
4GBJ4B	4GBJ6B
4GBJ6D	4GBJ6D
4GBJ6G	4GBJ6G
4GBJ6J	4GBJ6J
4GBJ6K	4GBJ6K
4GBJ6M	4GBJ6M

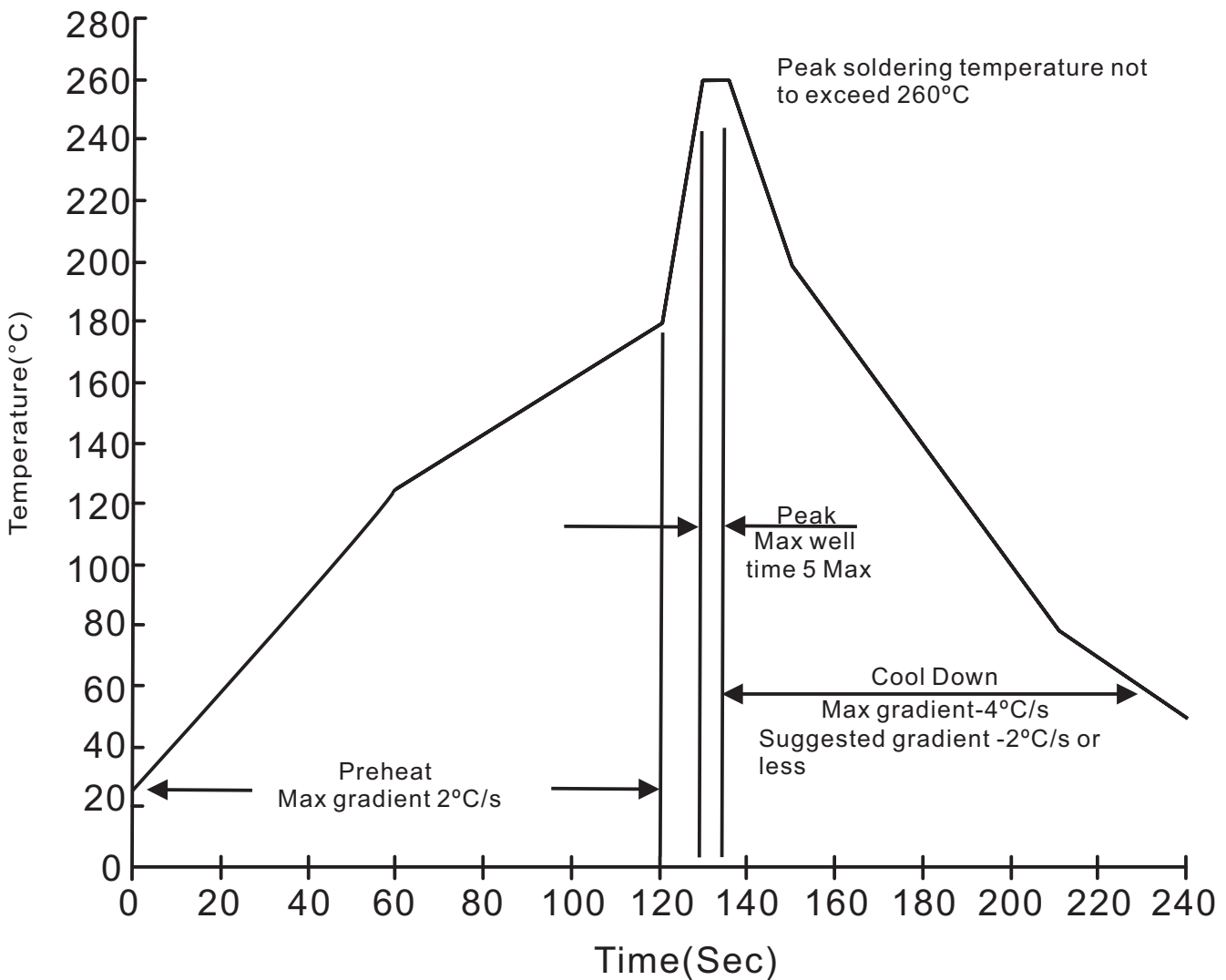
Tube packing

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

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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±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 $T_J=150^\circ\text{C}$ 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°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