

GBP4A THRU GBP4M

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GBP4A THRU GBP4M

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

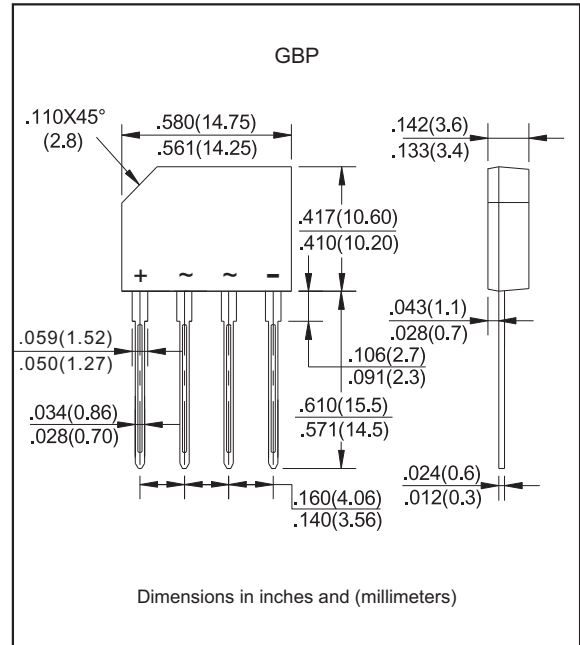
Features

- Glass passivated chip
- Low forward voltage drop
- Ideal for printed circuit board
- High surge current capability
- Lead-free parts meet RoHS requirements
- Suffix "-H" indicates Halogen-free part, ex. GBP4A-H

Mechanical data

- Epoxy: UL94-V0 rated flame retardant
- Case : Molded plastic, GBP
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : marked on body
- Mounting Position : Any
- Weight : Approximated 1.453gram

Package outline



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

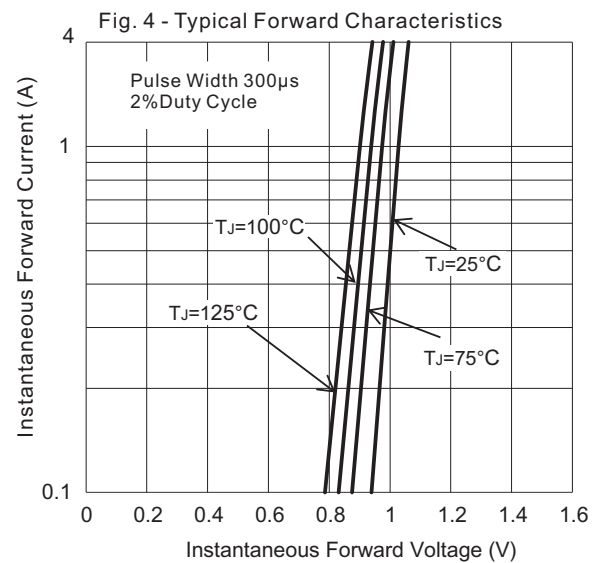
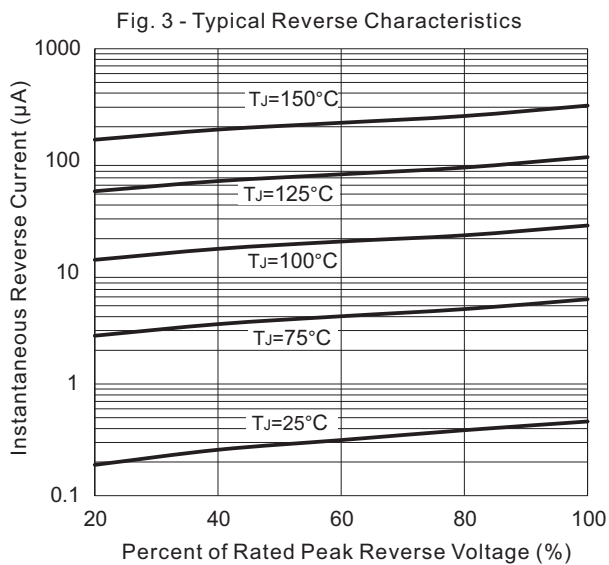
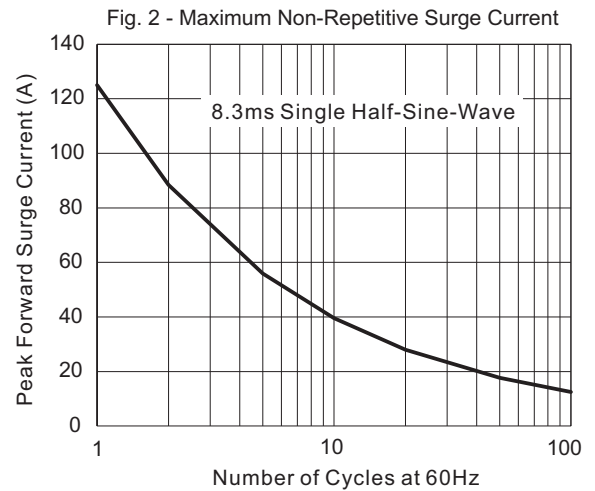
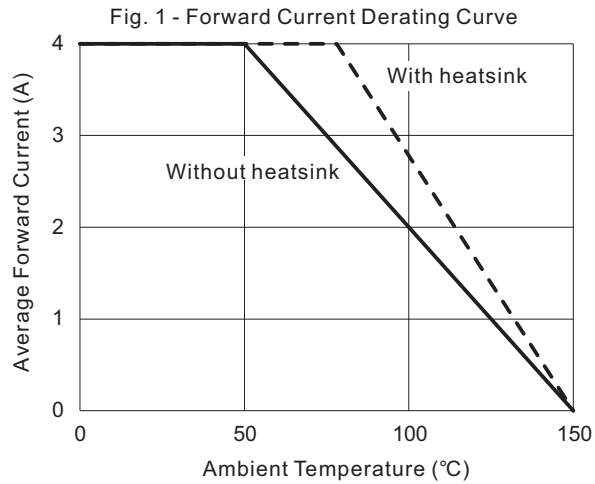
PARAMETER	SYMBOLS	GBP4A	GBP4B	GBP4D	GBP4G	GBP4J	GBP4K	GBP4M	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	V
Maximum average forward rectified current @ $T_A=50^{\circ}\text{C}$ (Note 1)	I_o	4.0							A
Non-repetitive peak forward surge current 8.3ms single half sine-wave	I_{FSM}	125							A
Maximum rating for fusing ($t < 8.3\text{ms}$)	I^2t	64.8							A^2s
Operating junction temperature range	T_J	-55 to $+150$							$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-55 to $+150$							$^{\circ}\text{C}$

Electrical characteristics (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOLS	GBP4A	GBP4B	GBP4D	GBP4G	GBP4J	GBP4K	GBP4M	UNIT
Maximum instantaneous forward voltage per diode at $I_F=4.0\text{A}$	V_F	1.1							V
Maximum DC reverse current $T_J=25^{\circ}\text{C}$ at rated DC blocking voltage per diode $T_J=100^{\circ}\text{C}$	I_R	10.0 1000							μA μA

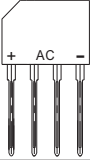
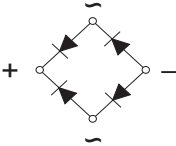
Note 1: Mounting conditions, 0.5" lead length maximum.

Rating and characteristic curves (GBP4A THRU GBP4M)



GBP4A THRU GBP4M

Pinning information

Simplified outline	Symbol
	

Marking

Type number	Marking code
GBP4A	GBP4A
GBP4B	GBP4B
GBP4D	GBP4D
GBP4G	GBP4G
GBP4J	GBP4J
GBP4K	GBP4K
GBP4M	GBP4M

Tube packing

PACKAGE	TUBE (pcs)	TUBE SIZE (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
GBP	25	390*28.8*5.8	408*187*128	3,000	7.7

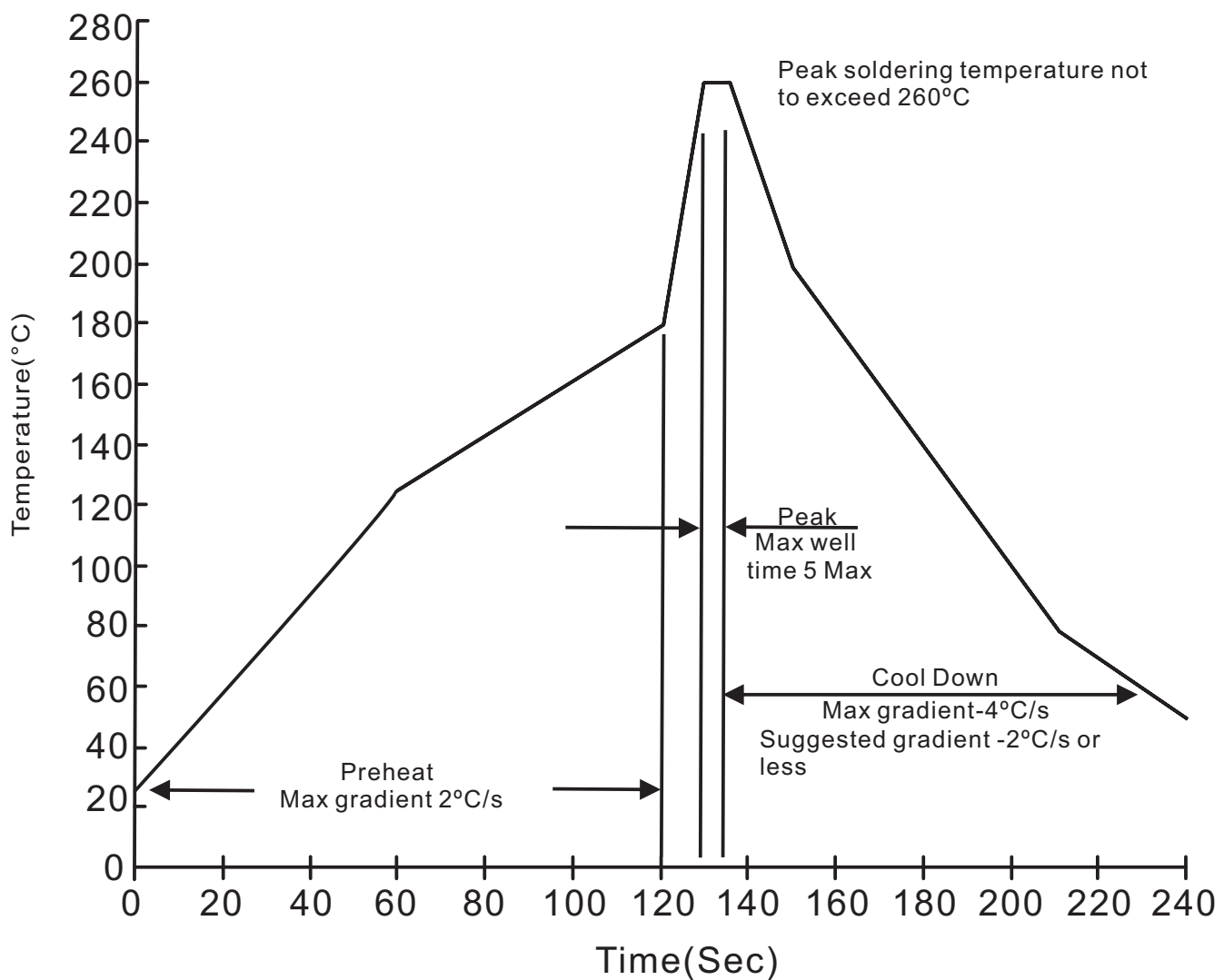
Bulk packing

PACKAGE	Q'TY (PCS / BOX)	INNER BOX (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
GBP	1,120	350*337*44	375*360*213	4,480	10.9

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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