GBJ15A THRU GBJ15M

List

GBJ15A THRU GBJ15M

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

Features

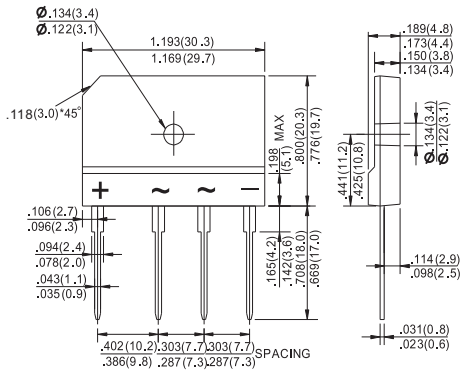
- Ideal for printed circuit board
- Low forward voltage drop,high current capability
- Reliable low cost construction utilizing molded plastic technique results in inexpensive product
- Glass passivated chip junction
- Lead-free parts meet RoHS requirements
- UL recognized file # E321971
- Suffix "-H" indicates Halogen free parts, ex. GBJ15A-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

GBJ



Dimensions in inches and (millimeters)

Maximum ratings (At T_A=25°C unless otherwise noted)

Parameter	Symbol	GBJ15A	GBJ15B	GBJ15D	GBJ15G	GBJ15J	GBJ15K	GBJ15M	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 (with heatsink Note 2)	$I_{F(AV)}$	15.0							A
Rectified current at T_C=100°C (without heatsink)		3.7							A
Non-repetitive peak forward surge current 8.3ms single half sine-wave	I_{FSM}	240							A
Rating for fusing (t<8.3ms)	I^2t	239							A^2s
Typical junction capacitance per diode (Note1)	C_J	60							pF
Typical thermal resistance to ambient (Note2)	$R_{\theta JA}$	4.5							°C/W
Typical thermal resistance to case (Note2)	$R_{\theta JC}$	0.8							°C/W
Typical thermal resistance to lead (Note2)	$R_{\theta JL}$	1.5							°C/W
Operating junction temperature range	T_J	-55 to +150							°C
Storage temperature range	T_{STG}	-55 to +150							°C

Electrical characteristics (At T_A=25°C unless otherwise noted)

Parameter	Symbol	GBJ15A	GBJ15B	GBJ15D	GBJ15G	GBJ15J	GBJ15K	GBJ15M	Unit
Maximum instantaneous forward voltage per diode at I_F=7.5A	V_F	1.1							V
Maximum DC reverse current at rated T_J=25°C	I_R	5.0							μA
DC blocking voltage per diode T_J=125°C		500							

Notes 1: Measured at 1.0 MHz and applied reverse voltage of 4.0V DC.
2: Device mounted on 300mm*300mm*1.6mm Cu plate heatsink.

Rating and characteristic curves (GBJ15A THRU GBJ15M)

Fig. 1 - Forward Current Derating Curve

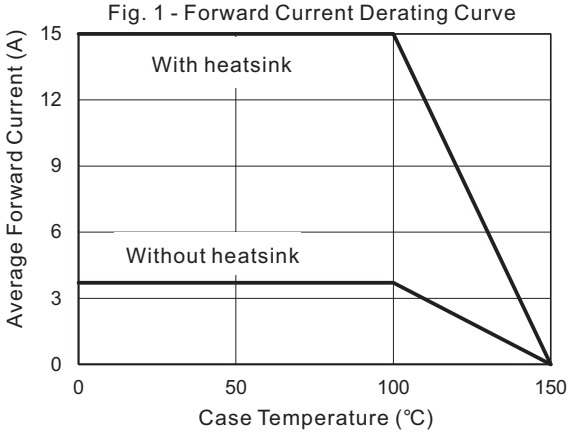


Fig. 2 - Maximum Non-Repetitive Surge Current

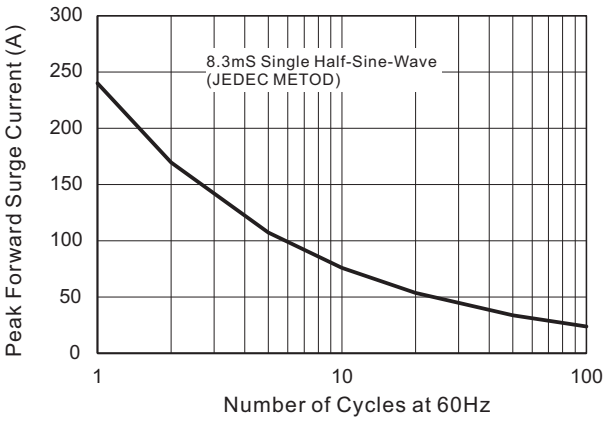


Fig. 3 - Typical Reverse Characteristics

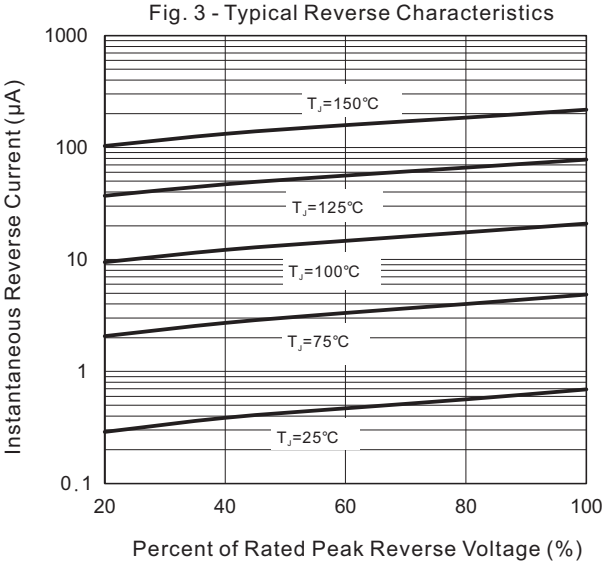


Fig. 4 - Typical Forward Characteristics

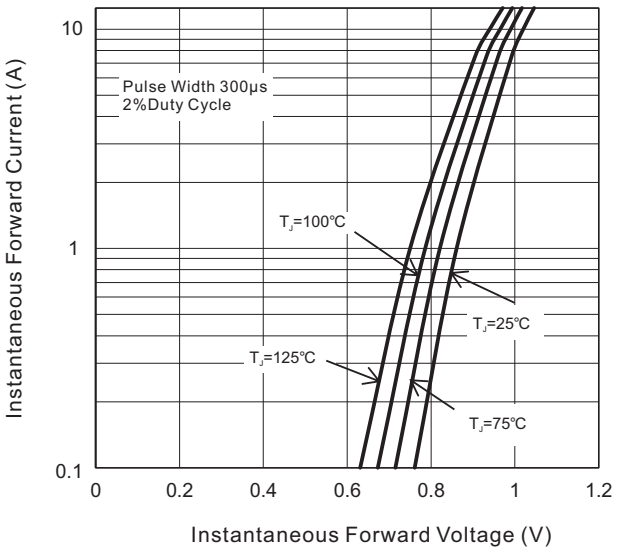
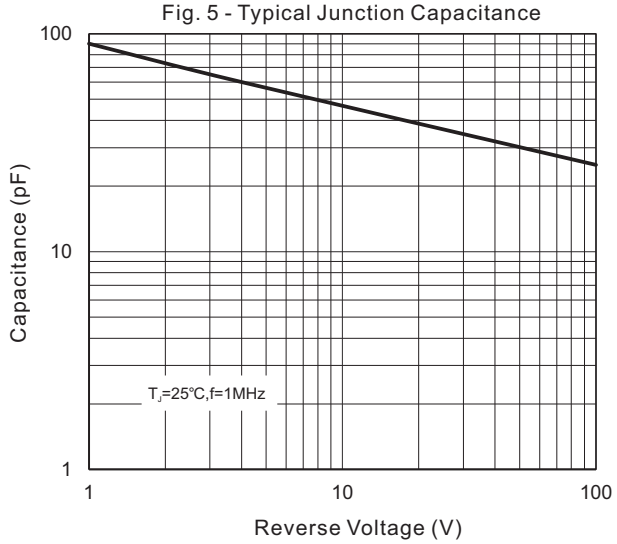
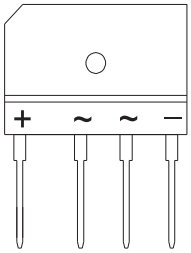
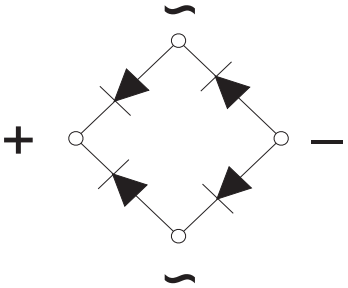


Fig. 5 - Typical Junction Capacitance



GBJ15A THRU GBJ15M

Pinning information

Simplified outline	Symbol
	

Marking

Type number	Marking code
GBJ15A	GBJ15A, GBJ15005
GBJ15B	GBJ15B, GBJ1501
GBJ15D	GBJ15D, GBJ1502
GBJ15G	GBJ15G, GBJ1504
GBJ15J	GBJ15J, GBJ1506
GBJ15K	GBJ15K, GBJ1508
GBJ15M	GBJ15M, GBJ1510

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

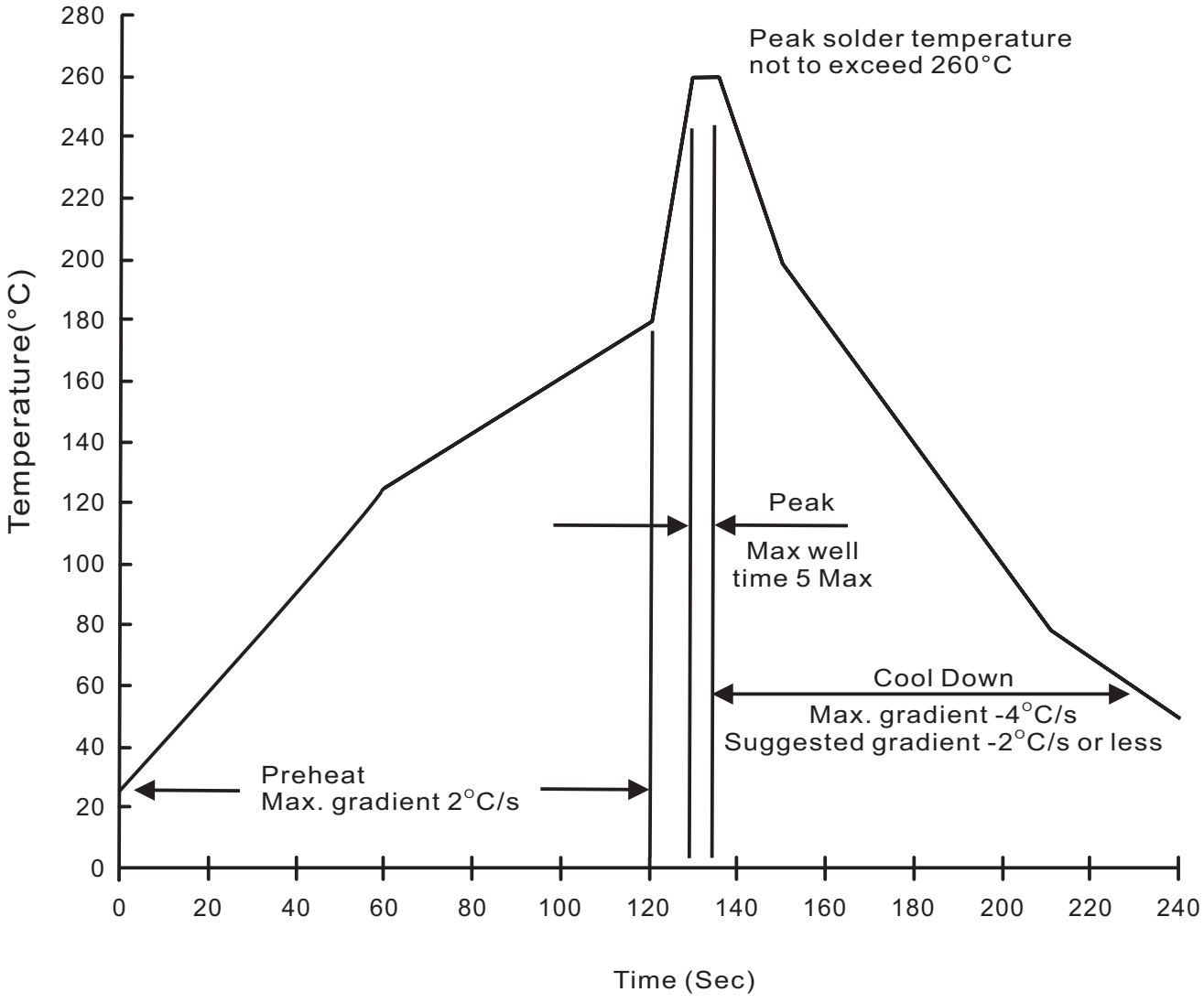
Bulk packing

PACKAGE	BOX (pcs)	INNER BOX SIZE (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
GBJ	250	305*130.0*45	325*280*200	2000	12

GBJ15A THRU GBJ15M

Suggested thermal profiles for soldering processes

1.Lead free temperature profile wave-soldering



GBJ15A THRU GBJ15M

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 150°C for 1000 hrs.	MIL-STD-750D METHOD-1031