GBJ20A THRU GBJ20M

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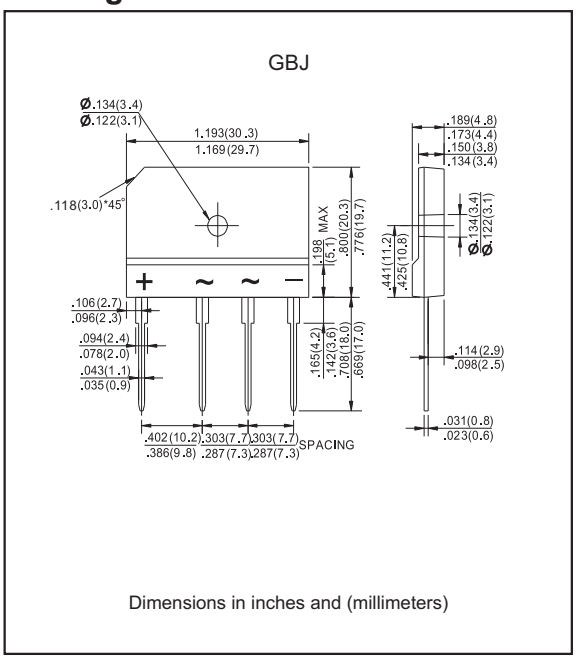
GBJ20A THRU GBJ20M

20.0A 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 requirments.
- UL recognized file # E321971
- Suffix "-H" indicates Halogen free parts, ex. GBJ20A-H.

Package outline



Dimensions in inches and (millimeters)

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

Maximum ratings and Electrical Characteristics (AT T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN.	TYP.	MAX.	UNIT
Maximum average forward rectified current	with heatsink Note 1 @T_C=100°C without heatsink	$I_{F(AV)}$			20.0 3.6	A
Forward surge current	8.3ms single half sine-wave (JEDEC methode)	I_{FSM}			260	A
Reverse current	V_R = V_{RRM} T_J = 25°C	I_R			10.0	μA
	V_R = V_{RRM} T_J = 125°C				500	
Rating for fusing	t < 8.3 ms	I^2t			280	A^2s
Typical Junction capacitance Per Element	Measured at 1.0MHz and applied reverse voltage of 4.0V DC	C_J		60		pF
Typical thermal resistance	Junction to case	$R_{\theta JC}$		0.8		°C/W
Storage temperature		T_{STG}	-65		+175	°C

Note: 1.Device mounted on 300mm*300mm*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, (°C)
GBJ20A	50	35	50	1.10	-55 to +150
GBJ20B	100	70	100		
GBJ20D	200	140	200		
GBJ20G	400	280	400		
GBJ20J	600	420	600		
GBJ20K	800	560	800		
GBJ20M	1000	700	1000		

*1 Repetitive peak reverse voltage

*2 RMS voltage

*3 Continuous reverse voltage

*4 Maximum forward voltage@IF=10.0A

Rating and characteristic curves (GBJ20A THRU GBJ20M)

FIG.1-FORWARD CURRENT DERATING CURVE

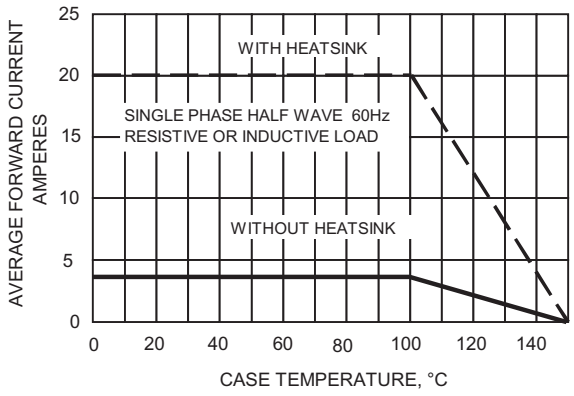


FIG.2-MAXMUN NON-REPETITIVE SURGE CURRENT

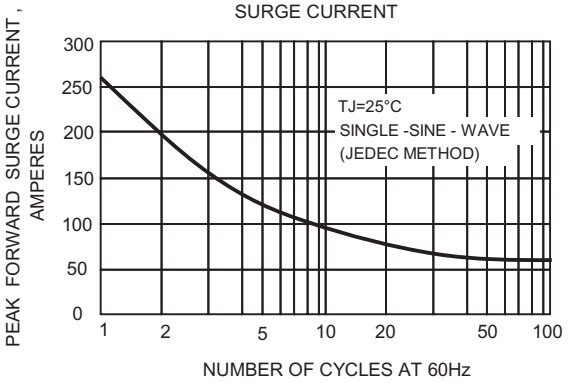


FIG.3-TYPICAL JUNCTION CAPACITANCE

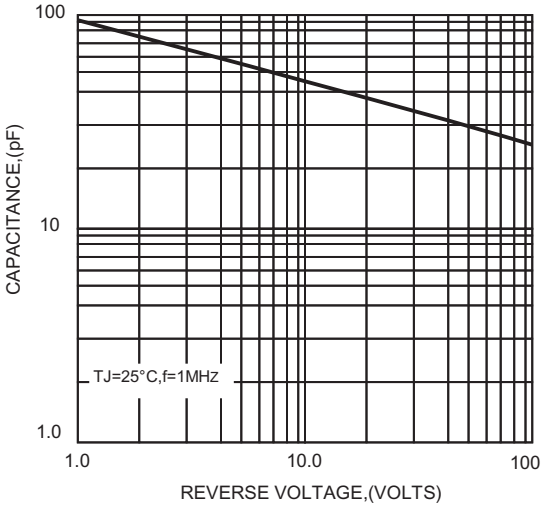


FIG.4-TYPICAL FORWARD CHARACTERISTICS

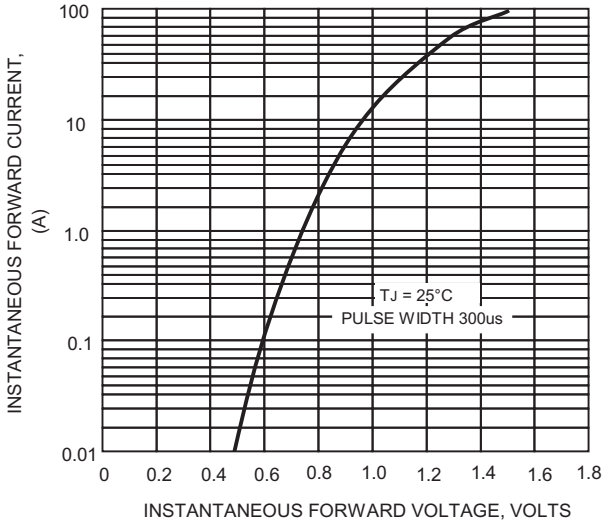
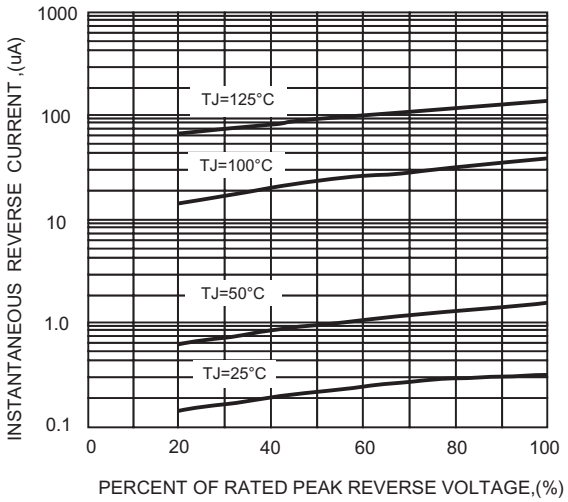
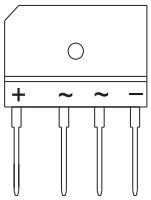
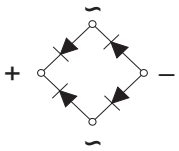


FIG.5-TYPICAL REVERSE CHARACTERISTICS



GBJ20A THRU GBJ20M

Pinning information

Simplified outline	Symbol
	

Marking

Type number	Marking code
GBJ20A	GBJ20A
GBJ20B	GBJ20B
GBJ20D	GBJ20D
GBJ20G	GBJ20G
GBJ20J	GBJ20J
GBJ20K	GBJ20K
GBJ20M	GBJ20M

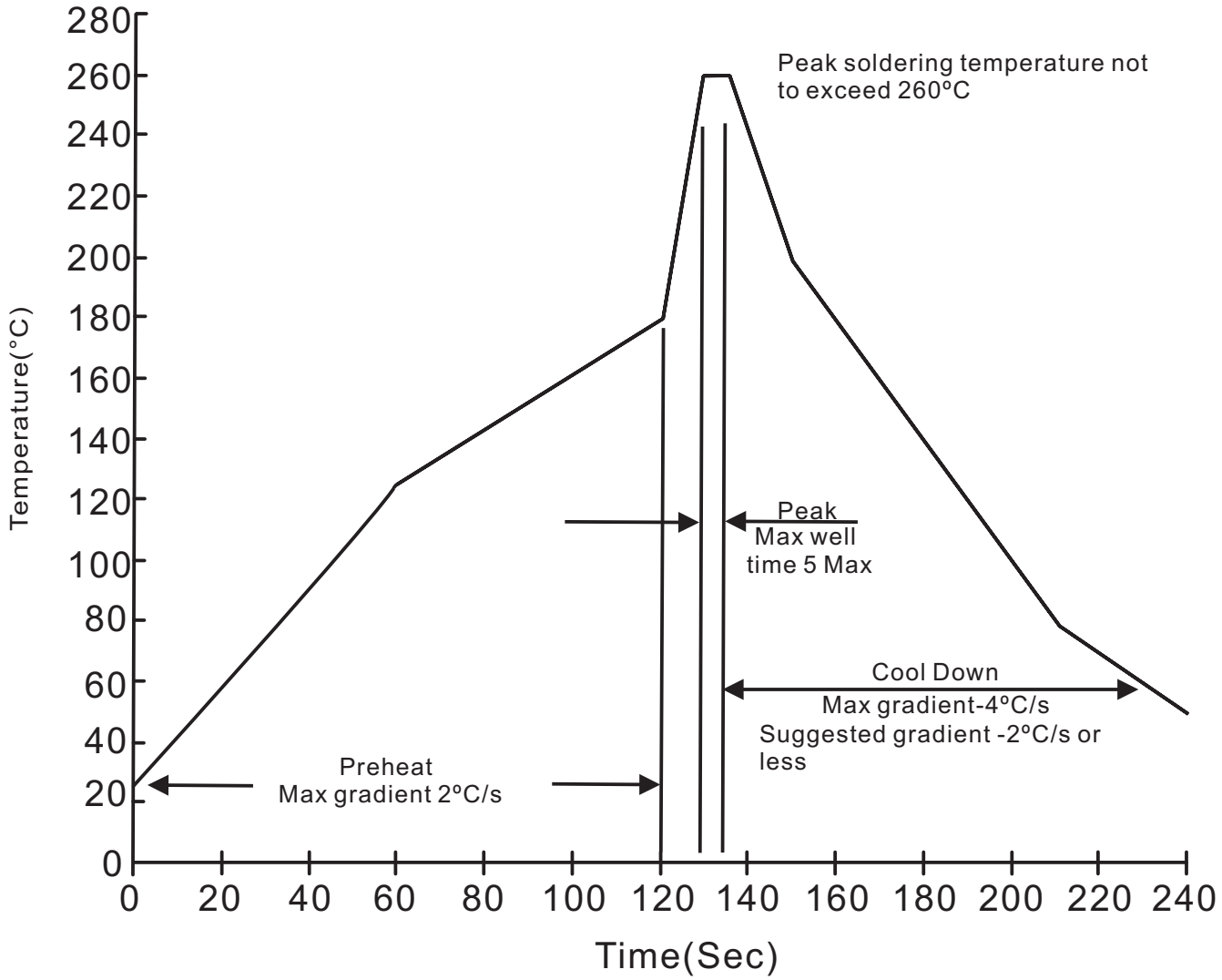
Tube packing

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±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 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031