# GBL2A THRU GBL2M

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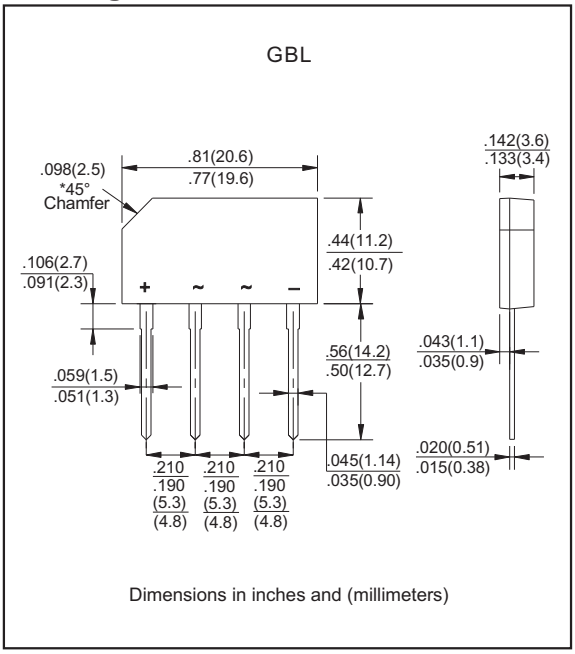
# GBL2A THRU GBL2M

## 2.0A Glass Passivated Single-Phase Bridge Rectifiers-50-1000V

## Features

- Recommended for non-automatic applications.
- Ideal for & save space on printed circuit board.
- Applicable for automatic insertion.
- Reliable low cost construction utilizing molded plastic technology results in inexpensive product.
- Glass passivated chip junctions.
- Lead-free parts meet RoHS requirments.
- UL recognized file # E321971
- Suffix "-H" indicates Halogen-free part, ex.GBL2A-H.

## Package outline




Dimensions in inches and (millimeters)

## Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, GBL
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : marked on body
- Mounting Position : Any
- Weight : Approximated 2.00 gram

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

| PARAMETER | CONDITIONS | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Forward rectified current | See Fig.1 | $I_{F(AV)}$ | | | 2.0 | A |
| Forward surge current | 8.3ms single half sine-wave superimposed on rate load (JEDEC methode) | $I_{FSM}$ | | | 60 | A |
| Reverse current | $V_R$ = $V_{RRM}$ $T_J$ = 25°C | $I_R$ | | | 10.0 | μA |
| | $V_R$ = $V_{RRM}$ $T_J$ = 125°C | | | | 1000 | |
| Rating for fusing | t < 8.3 ms | $I^2t$ | | | 15 | $A^2s$ |
| Storage temperature | | $T_{STG}$ | -65 | | +175 | °C |

| SYMBOLS | $V_{RRM}$ *1 (V) | $V_{RMS}$ *2 (V) | $V_R$ *3 (V) | $V_F$ *4 (V) | Operating temperature $T_J$, (°C) |
|---|---|---|---|---|---|
| GBL2A | 50 | 35 | 50 | 1.10 | -55 to +150 |
| GBL2B | 100 | 70 | 100 | | |
| GBL2D | 200 | 140 | 200 | | |
| GBL2G | 400 | 280 | 400 | | |
| GBL2J | 600 | 420 | 600 | | |
| GBL2K | 800 | 560 | 800 | | |
| GBL2M | 1000 | 700 | 1000 | | |

*1 Repetitive peak reverse voltage

*2 RMS voltage

*3 Continuous reverse voltage

*4 Maximum forward voltage per bridge element@$I_F$=2.0A

## Rating and characteristic curves (GBL2A THRU GBL2M)

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

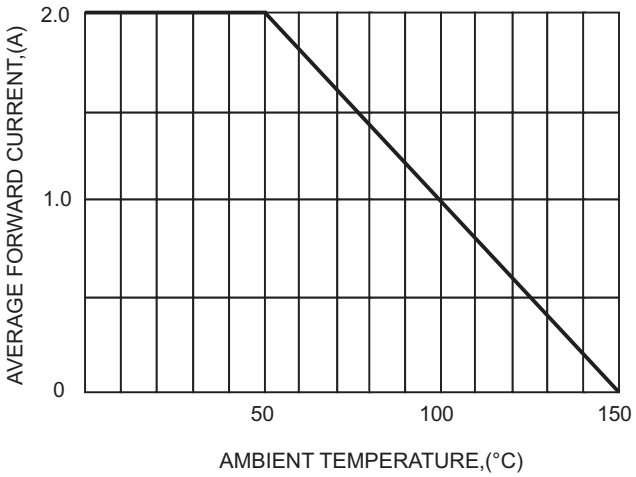



FIG.2-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

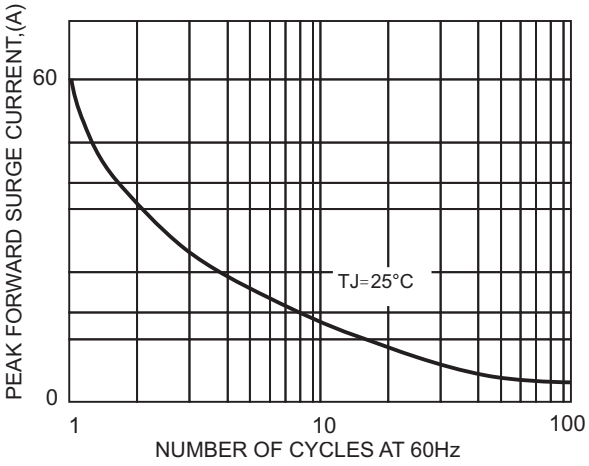



FIG.3-TYPICAL FORWARD CHARACTERISTICS

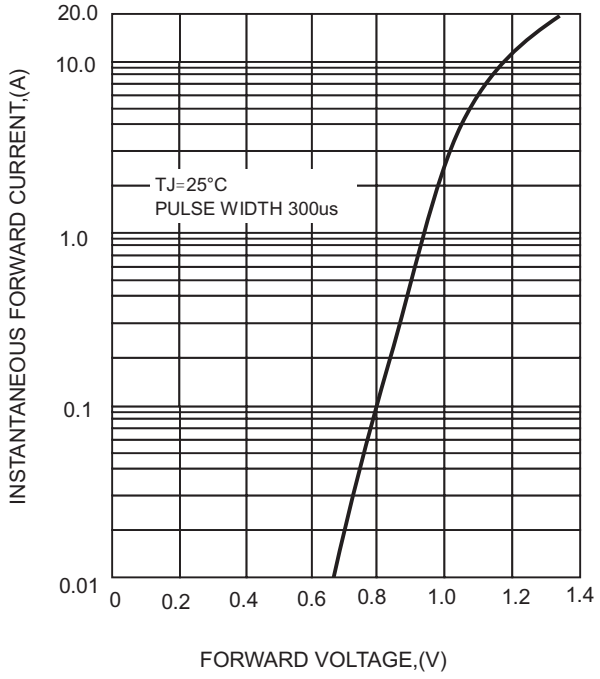
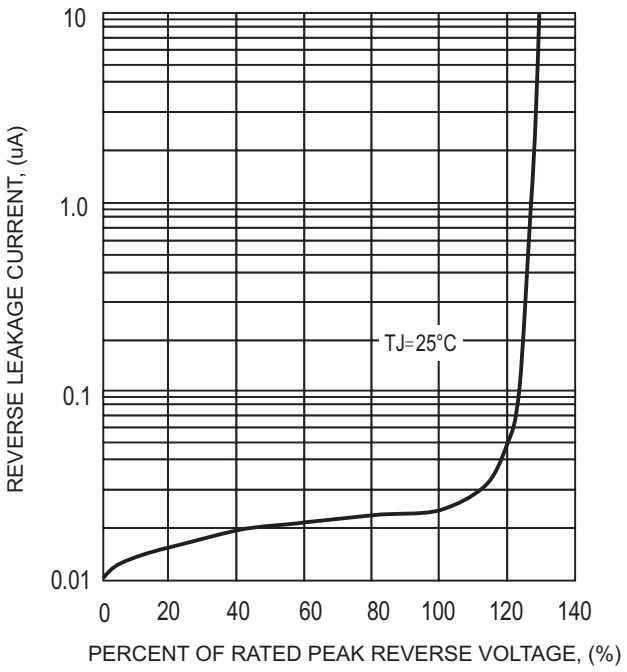
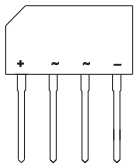
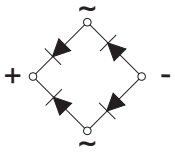



FIG.4-TYPICAL REVERSE CHARACTERISTICS



# GBL2A THRU GBL2M

## Pinning information

| Simplified outline | Symbol |
|---|---|
|  |  |





## Marking

| Type number | Marking code |
|---|---|
| GBL2A | GBL2A |
| GBL2B | GBL2B |
| GBL2D | GBL2D |
| GBL2G | GBL2G |
| GBL2J | GBL2J |
| GBL2K | GBL2K |
| GBL2M | GBL2M |

## Tube packing

| PACKAGE | TUBE (pcs) | TUBE SIZE (m/m) | CARTON SIZE (m/m) | CARTON (pcs) | APPROX. GROSS WEIGHT (kg) |
|---|---|---|---|---|---|
| GBL | 20 | 430*28.8*5.8 | 448*129*137 | 2,000 | 7.2 |

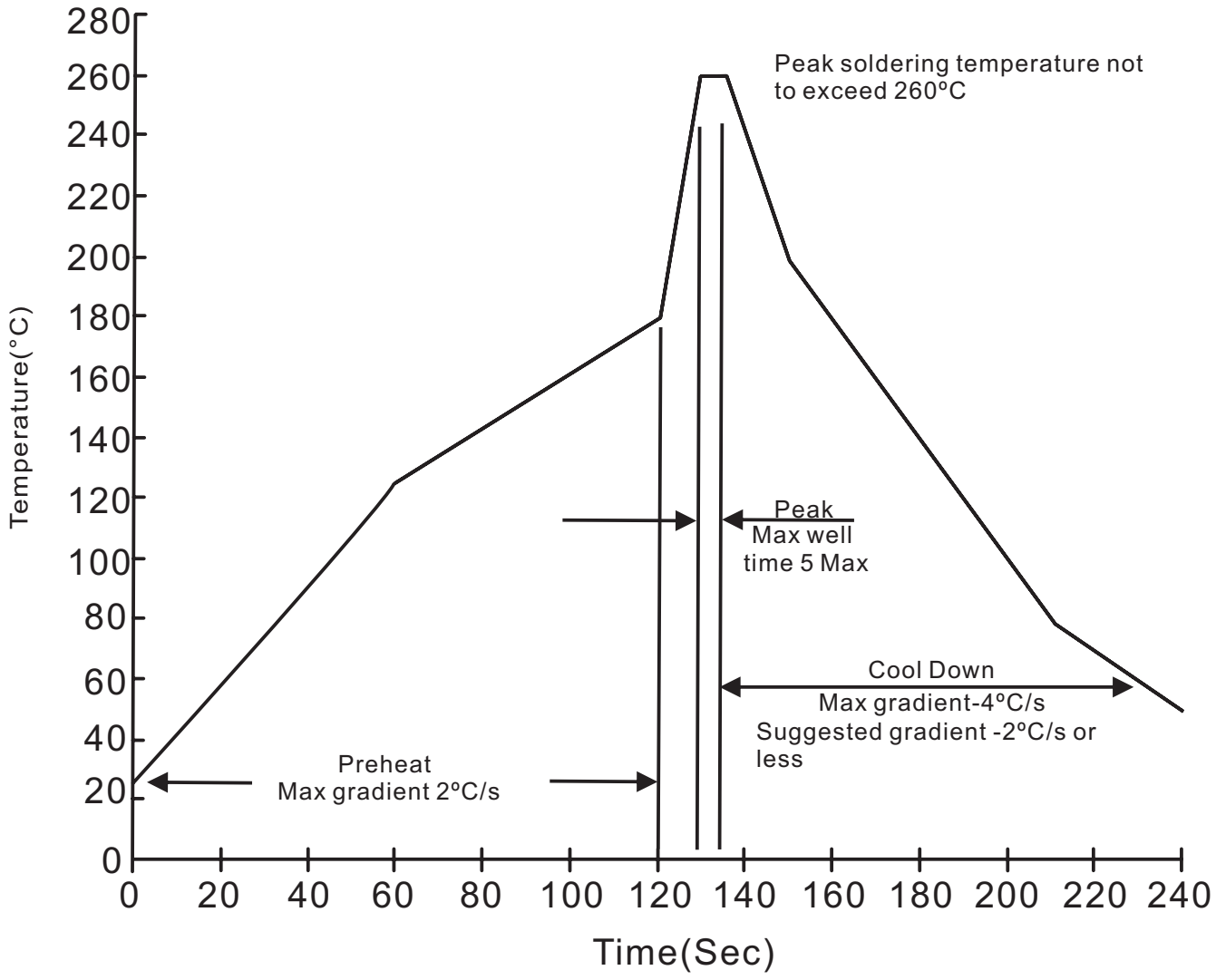
## Bulk packing

| PACKAGE | Q'TY (PCS / BOX) | INNER BOX (m/m) | CARTON SIZE (m/m) | CARTON (pcs) | APPROX. GROSS WEIGHT (kg) |
|---|---|---|---|---|---|
| GBL | 960 | 350*337*44 | 375*360*213 | 3,840 | 13.1 |

# GBL2A THRU GBL2M

**Suggested thermal profiles for soldering processes**

1.Lead free temperature profile wave-soldering



# GBL2A THRU GBL2M

## High reliability test capabilities

| Item Test | Conditions | Reference |
|---|---|---|
| 1. Solder Resistance | at 260±5°C for 10±2sec.<br>immerse body into solder 1/16"±1/32" | MIL-STD-750D<br>METHOD-2031 |
| 2. Solderability | at 245±5°C for 5 sec. | MIL-STD-202F<br>METHOD-208 |
| 3. High Temperature Reverse Bias | $V_R$=80% rate at $T_J$=150°C for 168 hrs. | MIL-STD-750D<br>METHOD-1038 |
| 4. Forward Operation Life | Rated average rectifier current at $T_A$=25°C for 500hrs. | MIL-STD-750D<br>METHOD-1027 |
| 5. Intermittent Operation Life | $T_A$ = 25°C, $I_F$ = $I_O$<br>On state: power on for 5 min.<br>off state: power off for 5 min.<br>on and off for 500 cycles. | MIL-STD-750D<br>METHOD-1036 |
| 6. Pressure Cooker | 15$P_{SIG}$ at $T_A$=121°C for 4 hrs. | JESD22-A102 |
| 7. Temperature Cycling | -55°C to +125°C dwelled for 30 min.<br>and transferred for 5min. total 10 cycles. | MIL-STD-750D<br>METHOD-1051 |
| 8. Thermal Shock | 0°C for 5 min. rise to 100°C for 5 min. total 10 cycles. | MIL-STD-750D<br>METHOD-1056 |
| 9. Forward Surge | 8.3ms single half sine-wave superimposed<br>on rated load, one surge. | MIL-STD-750D<br>METHOD-4066-2 |
| 10. Humidity | at $T_A$=85°C, RH=85% for 1000hrs. | MIL-STD-750D<br>METHOD-1021 |
| 11. High Temperature Storage Life | at 175°C for 1000 hrs. | MIL-STD-750D<br>METHOD-1031 |