

**50A Glass Passivated Single-Phase Bridge Rectifier**

**Reverse Voltage - 1000 to 1600 V**

**Forward Current - 50A**

**FEATURES**

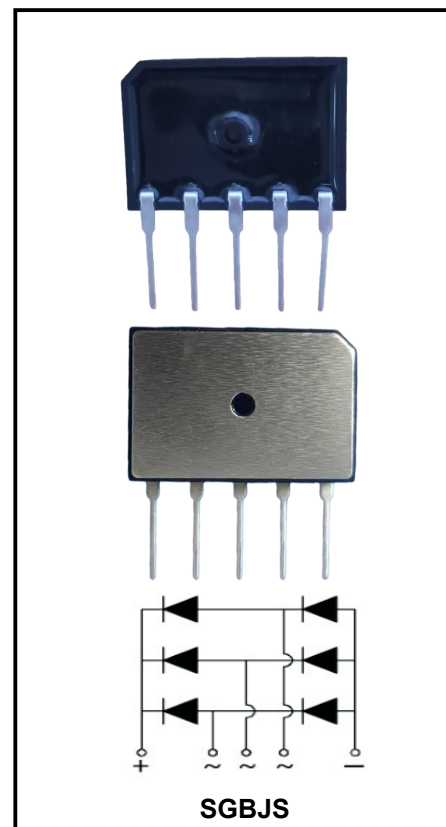
- ◆Glass passivated chip
- ◆Low Reverse Leakage Current
- ◆High surge current capability

**APPLICATIONS**

- ◆Household electric appliances
- ◆Industrial power supply
- ◆Frequency converter

**MECHANICAL DATA**

- ◆Case: SGBJS
- ◆Polarity: Polarity symbols being marked on body
- ◆Mounting torque: 12.0 kgf.cm max
- ◆Weight : About 12.8 grams



**Maximum Ratings @ Ta = 25°C unless otherwise noted**

| Parameter                                                                                                                                | Symbol          | SGBJ5010S | SGBJ5012S | SGBJ5014S | SGBJ5016S | Unit             |
|------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------|-----------|-----------|-----------|------------------|
| Maxmum Recurrent Peak Reverse Voltage                                                                                                    | $V_{RRM}$       | 1000      | 1200      | 1400      | 1600      | V                |
| Average Forward Output Rectified Current<br>with heatsink, $T_c=85^\circ\text{C}$                                                        | $I_{F(AV)}$     | 50        |           |           |           | A                |
| Peak Forward Voltage @ $I_F = 25\text{A}$                                                                                                | $V_F$           | 1.1       |           |           |           | V                |
| Peak Forward Surge Current 8.3ms Single Half Sine-wave<br>superimposed on rated load                                                     | $I_{FSM}$       | 500       |           |           |           | A                |
| Peak Reverse Current<br>$V_R = V_{RRM}$ , Pulse measurement Rating of per diode<br>$T_a = 25^\circ\text{C}$<br>$T_a = 125^\circ\text{C}$ | $I_R$           | 5<br>500  |           |           |           | UA               |
| Rating for fusing $1\text{ms} < t < 8.3\text{ms}$ $T_j = 25^\circ\text{C}$ , Rating of per diode                                         | $I^2t$          | 1037      |           |           |           | A <sup>2</sup> S |
| Dielectric strength terminals to case AC 1 minute                                                                                        | $V_{dis}$       | 2.5       |           |           |           | KV               |
| Junction to ambient thermal resistance, without heatsink                                                                                 | $R_{\theta JA}$ | 18        |           |           |           | °C/W             |
| Junction to case thermal resistance, with heatsink                                                                                       | $R_{\theta JC}$ | 1.2       |           |           |           | °C/W             |
| Operating Junction and storage temperature range                                                                                         | $T_j, T_{stg}$  | -55~150   |           |           |           | °C               |

## Characteristic Curve

FIG1. Derating Curve For Output Rectified Current

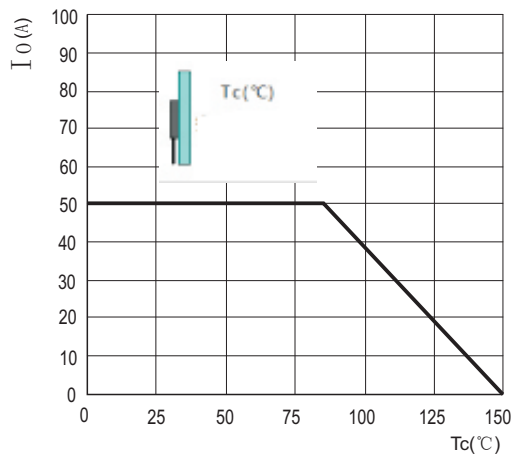


FIG2. Maximum NonRepetitive Peak Forward Surge Current Per Bridge Element

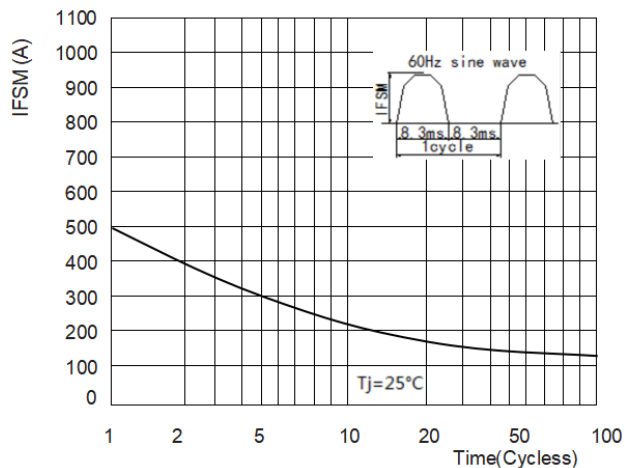


FIG3. Typical Reverse Characteristics Per Bridge Element

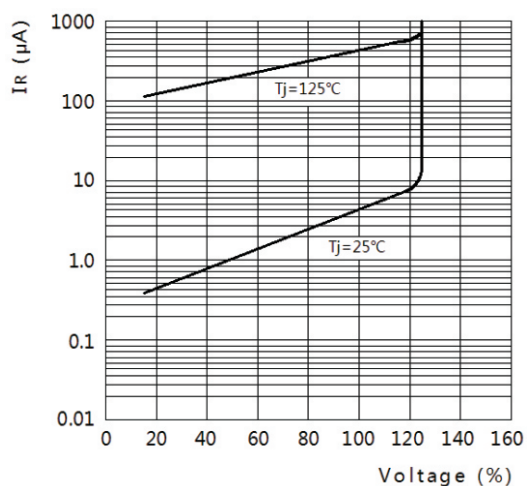
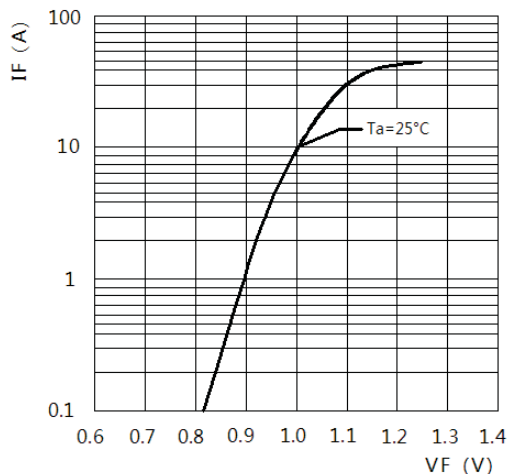
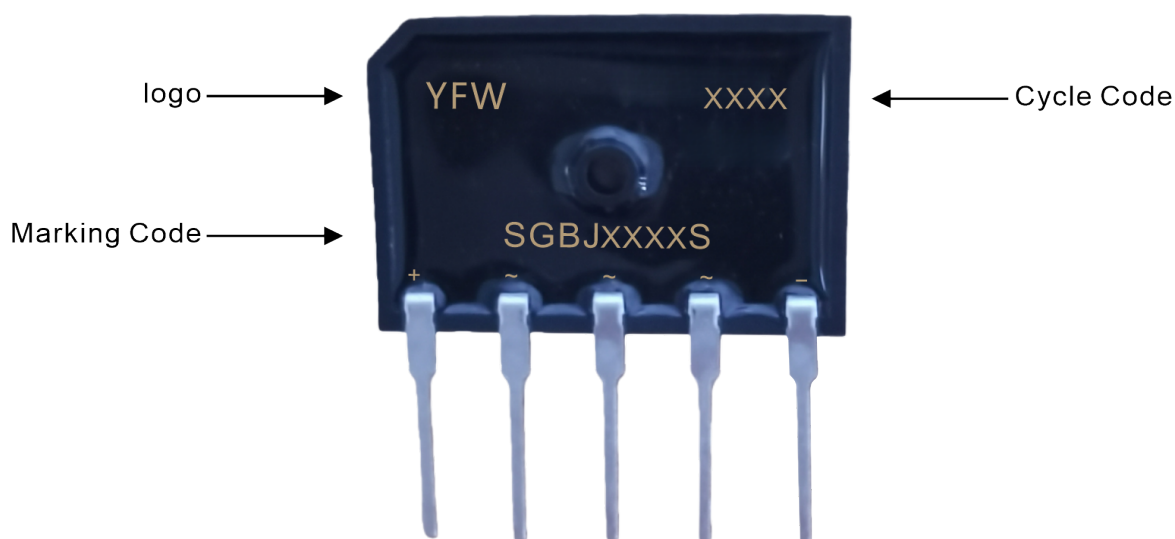


FIG4. Typical Forward Characteristics Per Bridge Element



Marking Diagram



Ordering information

| Package | Packing Description | Packing Quantity          |
|---------|---------------------|---------------------------|
| SGBJS   | bulk                | 200PCS/Box 2000PCS/Carton |

Package Dimensions

SGBJS

| Dim. | Millimeter(mm) |       | DimensionsinInch |       |
|------|----------------|-------|------------------|-------|
|      | Min.           | Max.  | Min.             | Max.  |
| A    | 37.00          | 38.00 | 1.457            | 1.496 |
| B    | 25.00          | 26.00 | 0.984            | 1.024 |
| C    | 2.80           | 3.30  | 0.110            | 0.130 |
| D    | 17.50          | 18.50 | 0.689            | 0.728 |
| E    | 3.00           | 4.00  | 0.118            | 0.157 |
| F    | 3.30           | 4.30  | 0.130            | 0.169 |
| G    | 2.00           | 2.60  | 0.079            | 0.102 |
| H    | 0.90           | 1.20  | 0.035            | 0.047 |
| I    | 6.80           | 7.80  | 0.268            | 0.307 |
| J    | 5.60           | 6.20  | 0.220            | 0.244 |
| K    | 5.00           | 5.60  | 0.197            | 0.220 |
| L    | 0.60           | 0.90  | 0.024            | 0.035 |
| M    | 12.60          | 13.20 | 0.496            | 0.520 |
| N    | 5.00           | 5.60  | 0.197            | 0.220 |

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