

# SBR830 thru SBR8100

## Schottky Barrier Rectifiers

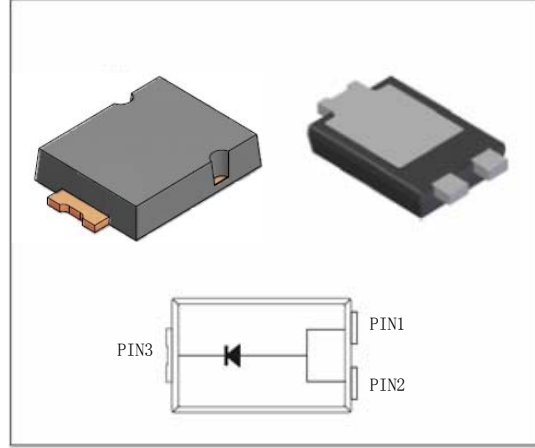
Reverse Voltage 30 to 100V Forward Current 8A

### FEATURES

- \* Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- \* Low power loss,high efficiency
- \* For use in low voltage high frequency inverters, free wheeling,and polarity protection applications
- \* Guardring for over voltage protection
- \* High temperature soldering guaranteed: 260°C/10 seconds at terminals

### Mechanical Data

Case: JEDEC TO-277A,  
molded plastic over SKY body  
Terminals: Plated leads, solderable per  
MIL-STD-750, Method 2026  
Mounting Position: Any  
Weight: 0.108 g  
Handling precaution:None



We declare that the material of product is  
Halogen free (green epoxy compound)

### 1.Electrical Characteristic

#### Maximum & Thermal Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

| Parameter Symbol   | symbol          | SBR830      | SBR840     | SBR845     | SBR860     | SBR8100     | Unit |
|--|-----------------|-------------|------------|------------|------------|-------------|------|
| device marking code  |                 | SBR<br>830  | SBR<br>840 | SBR<br>845 | SBR<br>860 | SBR<br>8100 |      |
| Maximum repetitive peak reverse voltage  | $V_{RRM}$       | 30          | 40         | 45         | 60         | 100         | V    |
| Maximum RMS voltage  | $V_{RMS}$       | 21          | 28         | 31.5       | 42         | 70          | V    |
| Maximum DC blocking voltage  | $V_{DC}$        | 30          | 40         | 45         | 60         | 100         | V    |
| Maximum average forward rectified current at $T_c = 75^\circ\text{C}$                            | $I_{F(AV)}$     | 8.0         |            |            |            |             | A    |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | $I_{FSM}$       | 150         |            |            |            |             | A    |
| Typical thermal resistance (Note 1)  | $R_{\theta JC}$ | 8           |            |            |            |             | °C/W |
|  | $R_{\theta JL}$ | 15          |            |            |            |             |      |
|  | $R_{\theta JA}$ | 31          |            |            |            |             |      |
| Typical thermal resistance (Note 3)  | $R_{\theta JA}$ | 135         |            |            |            |             | °C/W |
| Operating junction temperature range   | $T_J$           | -55 to +150 |            |            |            |             | °C   |
| Storage temperature range  | $T_{STG}$       | -55 to +175 |            |            |            |             | °C   |

#### Electrical Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

| Parameter Symbol  | symbol | SBR830 | SBR840 | SBR845 | SBR860 | SBR8100 | Unit |
|---|--------|--------|--------|--------|--------|---------|------|
| Maximum instantaneous forward voltage at 8A at 25°C   | $V_F$  | 0.57   |        |        | 0.70   | 0.87    | V    |
| Maximum DC reverse current $T_j = 25^\circ\text{C}$<br>at rated DC blocking voltage $T_j = 100^\circ\text{C}$ (note2)<br>at rated DC blocking voltage $T_j = 125^\circ\text{C}$ (note2) | $I_R$  | 0.20   |        |        | 0.070  |         | mA   |
|   |        | 10.0   |        |        | 10.0   |         |      |
|   |        | 20     |        |        | 15     |         |      |
| Typical junction capacitance at 4.0V, 1MHz  | $C_J$  | 500    |        |        |        |         | PF   |

#### NOTES:

1. Polyimide PCB, 2oz. Copper. Cathode pad dimensions 18.8mm x 14.4mm. Anode pad dimensions 5.6mm x 14.4mm.
- 2.Short duration pulse test used to minimize self-heating effect .
- 3.FR-4 PCB, 2oz.Copper.

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## 2. Ratings and Characteristic Curves (TA = 25°C unless otherwise noted)

Fig. 1 - Forward Current Derating

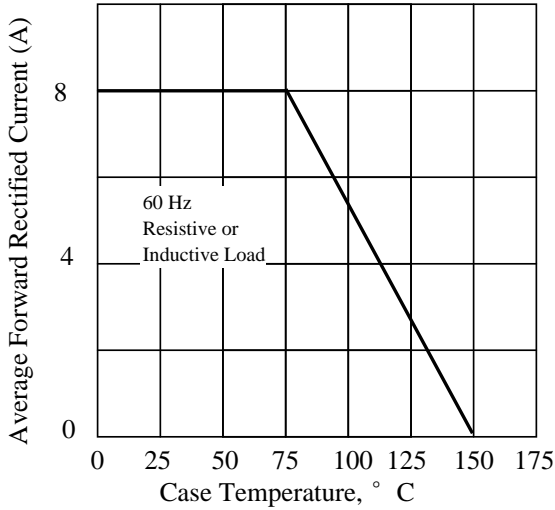


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

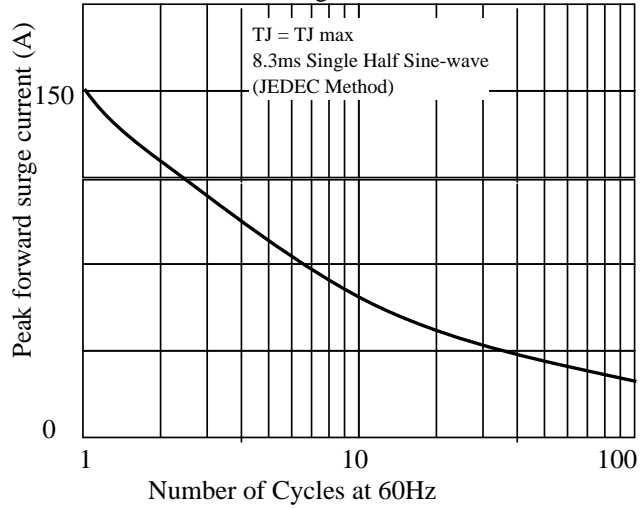


Fig. 3 - Typical Instantaneous Forward Characteristics

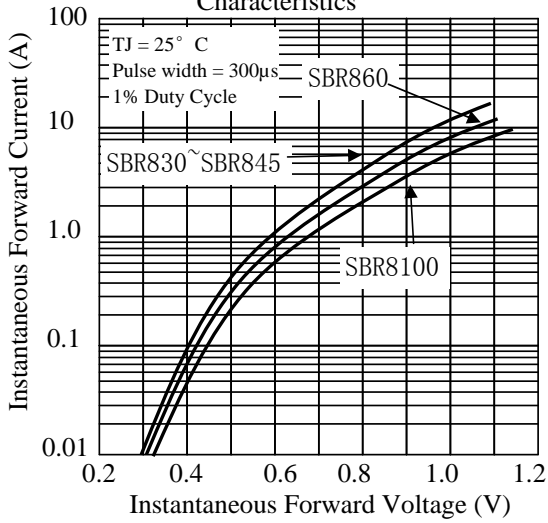


Fig. 4 - Typical Reverse Characteristics

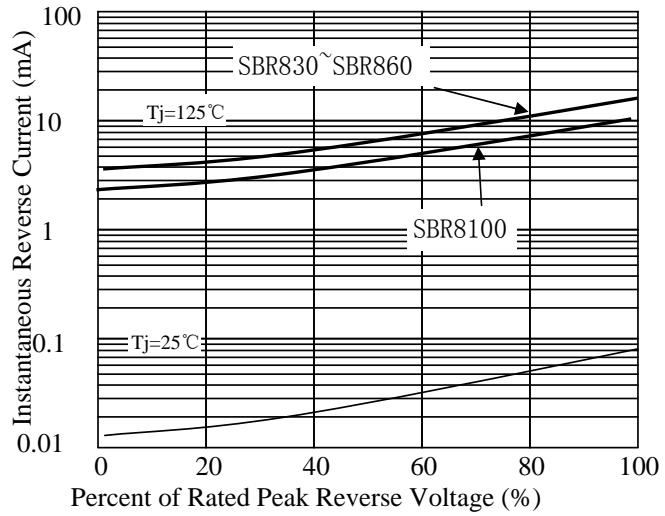


Fig. 5 - typical transient thermal impedance (Note 3)

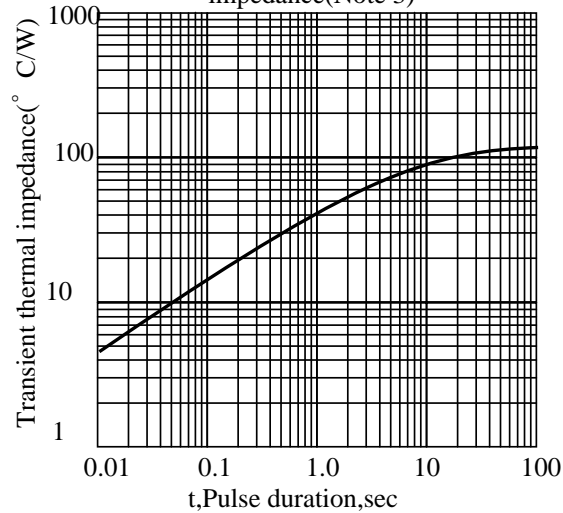
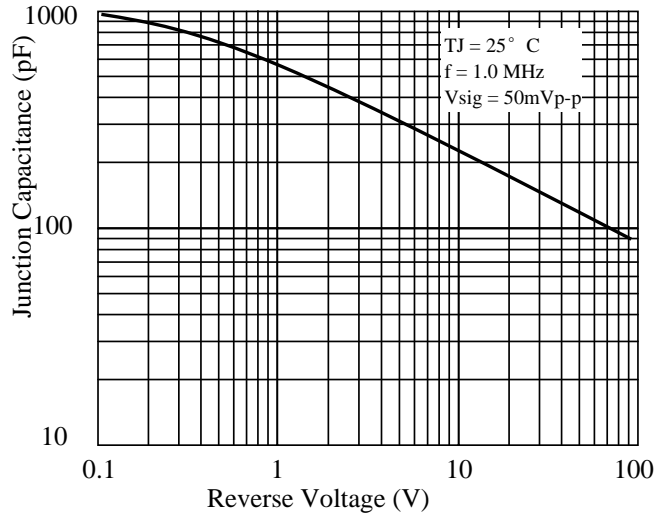


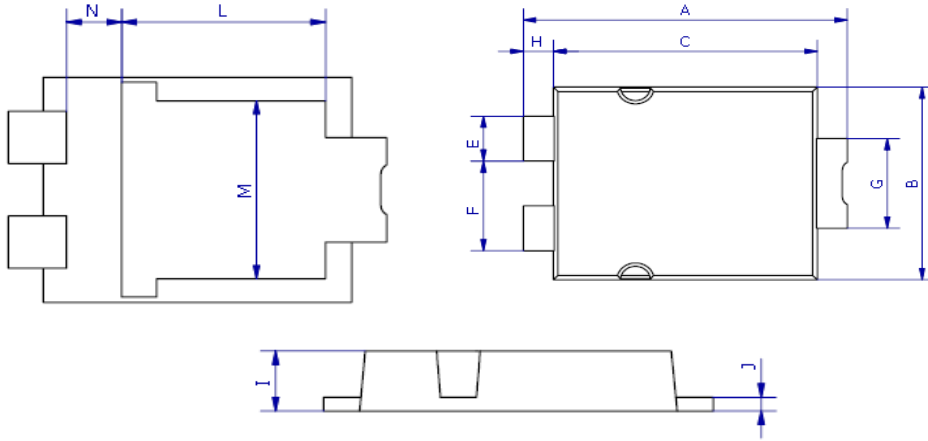
Fig. 6 - Typical Junction Capacitance



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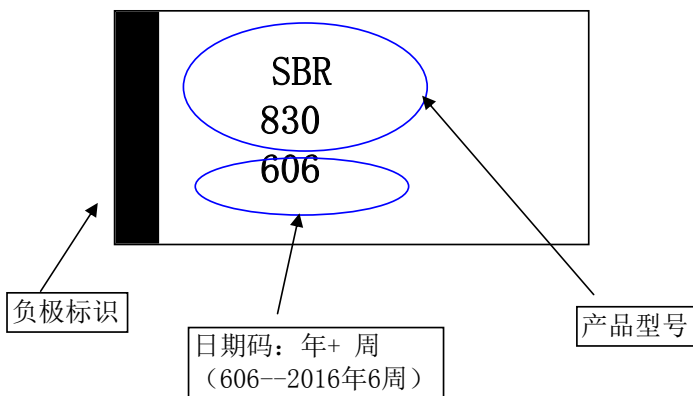
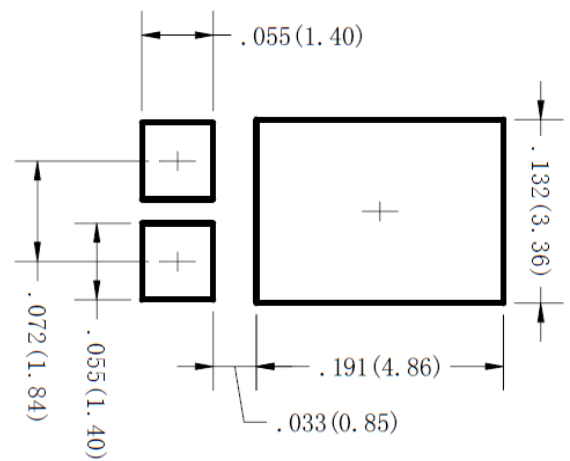
### 3. dimension:

#### TO-277A



| DIM | MILLIMETERS |      | INCHES |       |
|-----|-------------|------|--------|-------|
|     | MIN         | MAX  | MIN    | MAX   |
| A   | 6.3         | 6.7  | 0.248  | 0.264 |
| B   | 4.1         | 4.5  | 0.161  | 0.177 |
| C   | 5.1         | 5.5  | 0.201  | 0.217 |
| E   | 0.9         | 1.1  | 0.035  | 0.043 |
| F   | 1.9         | 2.1  | 0.075  | 0.083 |
| G   | 1.9         | 2.1  | 0.075  | 0.083 |
| H   | 0.50        | 0.70 | 0.020  | 0.028 |
| I   | 1.00        | 1.20 | 0.039  | 0.047 |
| J   | 0.15        | 0.35 | 0.006  | 0.014 |
| L   | 4.35        | 4.75 | 0.171  | 0.187 |
| M   | 3.20        | 3.60 | 0.126  | 0.142 |
| N   | 0.85        | 1.10 | 0.033  | 0.043 |

#### Mounting PAD layout



## SBR845 thru SBR8100

### 4. Update Record

| 版次 | 更新记录      | 更新作者 | 更新日期       |
|----|-----------|------|------------|
| 1  | 第一版       | 周杰   | 2014.06.09 |
| 2  | 增加SBR8100 | 周杰   | 2014.10.25 |
| 3  | 增加印字说明    | 周杰   | 2016.02.23 |