



# B5817WS THRU B5819WS

Schottky Barrier Diode

## 1. Features

SOD-323

- For use in low voltage.
- High frequency inverters.
- For linear amplification.
- Available in lead free version.



## 2. Mechanical Data

- Case:Molded Plastic,SOD-323.
- Epoxy:UL 94V-0 rate flame retardant.
- Terminals:Plated Leads Solderable per MIL-STD-750, Method-2026.
- Marking:B5817WS:SJ; B5818WS: SK; B5819WS: SL
- Marking:marked on body.



## 3. Maximum Ratings

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

| Characteristic                                           | Symbol          | B5817WS     | B5818WS | B5819WS | Unit |
|----------------------------------------------------------|-----------------|-------------|---------|---------|------|
| Non-Repetitive Peak Reverse Voltage                      | $V_{RM}$        | 20          | 30      | 40      | V    |
| Reverse Voltage                                          | $V_R$           | 20          | 30      | 40      | V    |
| RMS Reverse Voltage                                      | $V_{R(RMS)}$    | 14          | 21      | 28      | V    |
| Forward Continuous Current                               | $I_F$           | 1           |         |         | A    |
| Non-Repetitive Peak Forward Current $t = 8.3 \text{ ms}$ | $I_{FSM}$       | 25          |         |         | A    |
| Repetitive Peak Forward Current                          | $I_{FRM}$       | 1.5         |         |         | A    |
| Power Dissipation                                        | $P_D$           | 200         |         |         | mW   |
| Thermal Resistance from Junction to Ambient              | $R_{\theta JA}$ | 625         |         |         | °C/W |
| Thermal Resistance from Junction to Ambient Case         | $R_{\theta JC}$ | 400         |         |         | °C/W |
| Operating Temperature Range,                             | $T_J$           | -55 to +150 |         |         | °C   |
| Storage Temperature Range                                | $T_{stg}$       | -55 to +150 |         |         | °C   |

## 4. Electrical Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise noted)

| Parameters        | Symbol | Cindition                              | Min | TYP | Max  | Unit |
|-------------------|--------|----------------------------------------|-----|-----|------|------|
| Forward Voltage   | $V_F$  | $I_F = 1\text{A}$                      | -   | -   | 0.45 | V    |
|                   |        |                                        | -   | -   | 0.55 | V    |
|                   |        |                                        | -   | -   | 0.60 | V    |
| Reverse Current   | $I_R$  | $V_R = 20\text{V}$                     | -   | -   | 1    | mA   |
|                   |        | $V_R = 30\text{V}$                     | -   | -   | 1    | mA   |
|                   |        | $V_R = 40\text{V}$                     | -   | -   | 1    | mA   |
| Diode Capacitance | $C_D$  | $V_R = 4 \text{ V}, f = 1 \text{ MHz}$ | -   | -   | 120  | pF   |



### 5. Rating And Characteristic Curves

Fig.1 Forward Characteristics

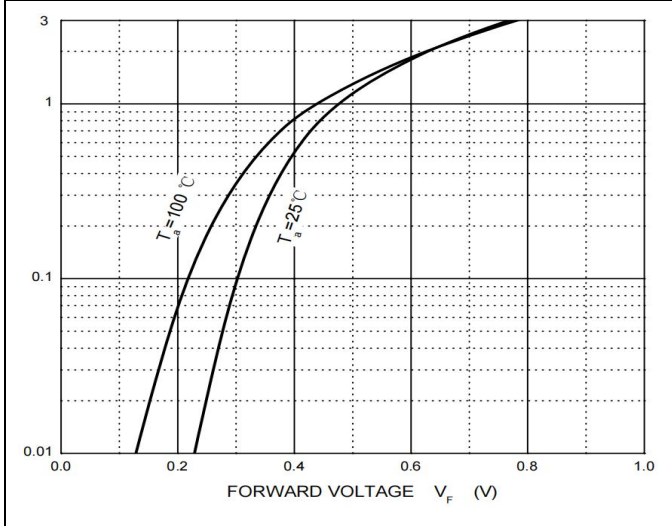


Fig.2 Reverse Characteristics

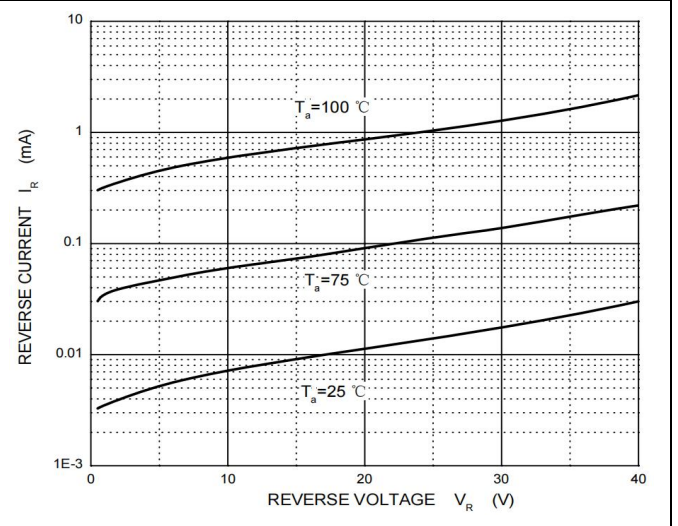


Fig.3 Capacitance Characteristics

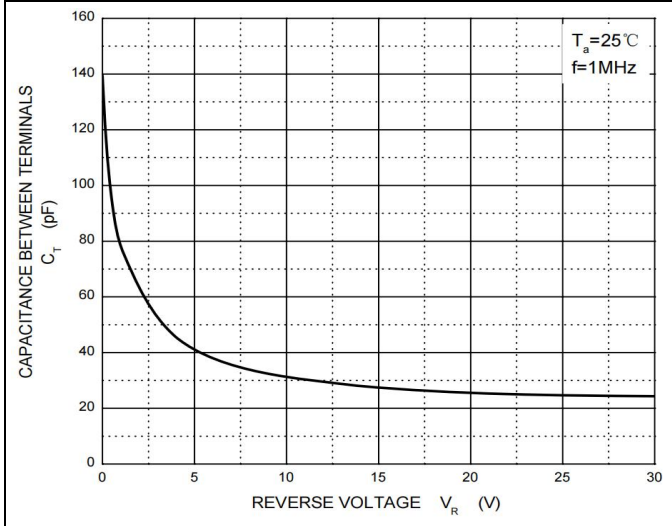
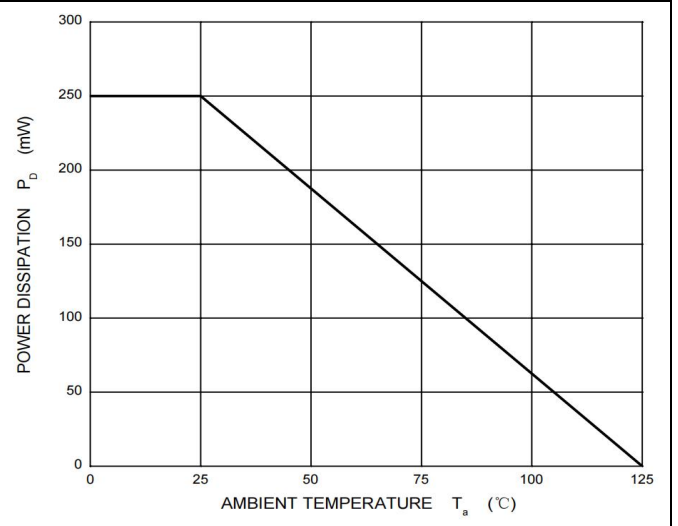
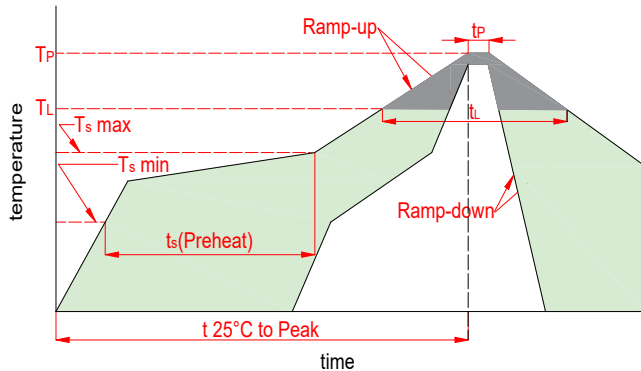


Fig.4 Power Derating Curve



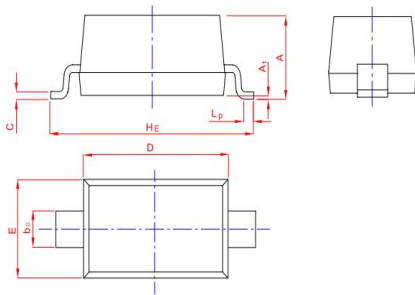


### 6. Soldering Parameters



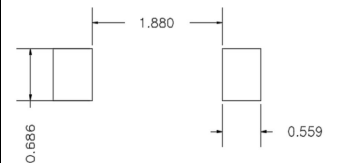
| Reflow Condition                                   |                           | Lead-free               |
|----------------------------------------------------|---------------------------|-------------------------|
| Pre Heat                                           | Temp. min( $T_s$ (min))   | 150°C                   |
|                                                    | Temp. max( $T_s$ (min))   | 200°C                   |
|                                                    | Time(min to max)( $t_s$ ) | 60~120s                 |
| Aver. ramp up rate(Liquidus Temp.)( $T_L$ )to peak |                           | 3°C/s max               |
| $T_s$ (max) to $T_L$ -Ramp-up Rate                 |                           | 3°C/s max               |
| Reflow                                             | Temp.( $T_L$ )(Liquidus)  | 217°C                   |
|                                                    | Temp.( $t_L$ )(Liquidus)  | 60~150s                 |
| Peak Temp.( $T_P$ )                                |                           | 260 <sup>+0/-5</sup> °C |
| Time within actual peak Temp.( $t_p$ )             |                           | 30s max                 |
| Ramp-down Rate                                     |                           | 6°C/s max               |
| Time 25°C to peak Tempe.( $T_p$ )                  |                           | 8 minutes max           |
| Do not exceed                                      |                           | 260°C                   |

### 7. Dimensions

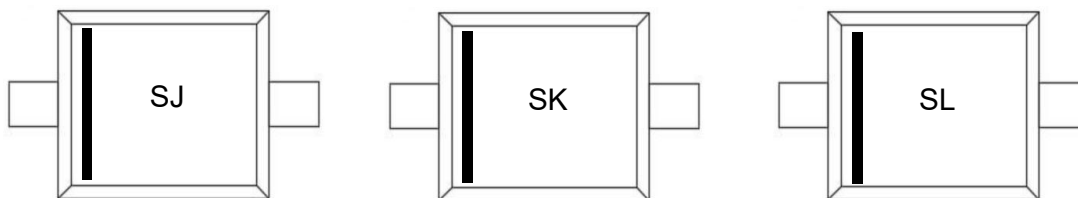


| Dimensions | Inches |       | Millimeters |       |
|------------|--------|-------|-------------|-------|
|            | Min    | Max   | Min         | Max   |
| A          | 0.035  | 0.047 | 0.900       | 1.200 |
| bp         | 0.010  | 0.016 | 0.250       | 0.400 |
| C          | 0.004  | 0.006 | 0.100       | 0.150 |
| D          | 0.063  | 0.071 | 1.600       | 1.800 |
| E          | 0.045  | 0.053 | 1.150       | 1.350 |
| HE         | 0.091  | 0.110 | 2.300       | 2.800 |
| A1         | 0.000  | 0.004 | 0.010       | 0.100 |
| LP         | 0.008  | 0.020 | 0.200       | 0.500 |

Mounting PAD Layout



### 8. Part Marking System



### 9. Package Information

| Package | Type    | Marking | Tape Width (mm) | Quantity(pcs) |
|---------|---------|---------|-----------------|---------------|
| SOD-323 | B5817WS | SJ      | 8               | 3000          |
| SOD-323 | B5818WS | SK      | 8               | 3000          |
| SOD-323 | B5819WS | SL      | 8               | 3000          |



### Important Notice and Disclaimer

- Reproducing and modifying information of the document is prohibited without from XINNUO.
- XINNUO reserves the right to make changes to this document and its products and specifications.
- XINNUO disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- XINNUO does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the here in document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. XINNUO makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown her are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify XINNUO for any damages resulting from such improper use or sale.
- Since XINNUO uses lot number as the tracking base, please provide the lot number for tracking when complaining.