

### Surface Mount Schottky Barrier Diodes

**(Pb)** Lead(Pb)-Free

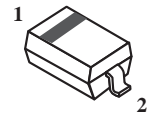
#### Features:

- \*Low Forward Voltage
- \*Very Small Conduction Losses
- \*Schottky Barrier Diodes Encapsulated in a SOD-123 Package

#### Description:

These schottky barrier diodes are designed for high speed switching applications circuit protection, and voltage clamping, Extremely low forward voltage reduces conduction loss, Miniature surface mount package is excellent for hand held and portable applications where space is limited.

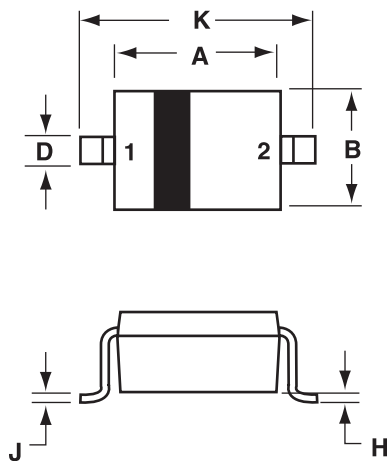
**SMALL SIGNAL  
SCHOTTKY DIODES  
1.0 AMPERES  
20-40 VOLTS**



**SOD-123**

### SOD-123 Outline Dimensions

Unit:mm



| SOD-123 |          |      |
|---------|----------|------|
| Dim     | Min      | Max  |
| A       | 2.55     | 2.85 |
| B       | 1.40     | 1.80 |
| C       | 0.95     | 1.35 |
| D       | 0.50     | 0.70 |
| E       | 0.30 REF |      |
| H       | -        | 0.10 |
| J       | -        | 0.15 |
| K       | 3.55     | 3.85 |

PIN 1. CATHODE  
2. ANODE

## Maximum Ratings ( $T_A=25^{\circ}\text{C}$ Unless otherwise noted)

| Characteristic   | Symbol                          | B5817W      | B5819W | Unit                 |
|--|---------------------------------|-------------|--------|----------------------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                               | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 20          | 40     | V                    |
| RMS Reverse Voltage  | $V_{R(RMS)}$                    | 14          | 28     | V                    |
| Average Rectified Output Current   | $I_{FAV}$                       | 1.0         |        | A                    |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms single half sine-wave superimpose on<br>rated load (JEDEC Method) | $I_{FSM}$                       | 25          |        | A                    |
| Typical thermal Resistance junction to<br>Ambient Note (1)   | $R_{\theta JA}$                 | 244         |        | $^{\circ}\text{C/W}$ |
| Operating & Storage Temperature Range  | $T_J$ $T_{STG}$                 | -55 to +125 |        | $^{\circ}\text{C}$   |

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

| Characteristic  | Symbol      | B5817W         | B5819W         | Unit          |
|---|-------------|----------------|----------------|---------------|
| Minimum Reverse Breakdown Voltage <sup>(2)</sup><br>( $I_R=500\mu\text{A}$ )  | $V_{(BR)R}$ | 20             | 40             | V             |
| Forward Voltage Note <sup>(2)</sup><br>$I_F=0.5\text{A}$ $T_j=25^{\circ}\text{C}$<br>$I_F=1.0\text{A}$ $T_j=25^{\circ}\text{C}$   | $V_F$       | 0.400<br>0.450 | 0.450<br>0.550 | V             |
| Reverse Current Note <sup>(2)</sup><br>$V_R=20\text{V}$ , $T_j=25^{\circ}\text{C}$<br>$V_R=40\text{V}$ , $T_j=25^{\circ}\text{C}$ | $I_R$       | 500            | 500            | $\mu\text{A}$ |
| Junction Capacitance $f=1\text{MHZ}$ , $V_R=10\text{VDC}$   | $C_j$       | 170            |                | PF            |

## Device Marking

| Item   | Marking | Equivalent Circuit diagram |
|--------|---------|----------------------------|
| B5817W | BK , SJ | 1 ○ —   — ○ 2              |
| B5819W | BL , SL | 1 ○ —   — ○ 2              |

Note: 1. Valid provided that leads are kept at ambient temperature.

2. Pulse Test : Pulse width =  $300\mu\text{s}$ , Duty Cycle  $\leq 2\%$

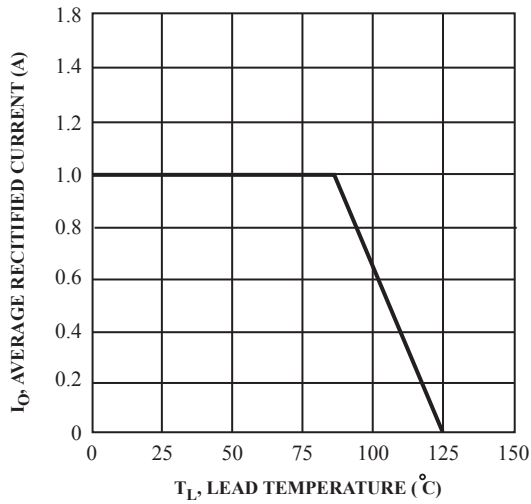


FIG. 1 Forward Current Derating Curve

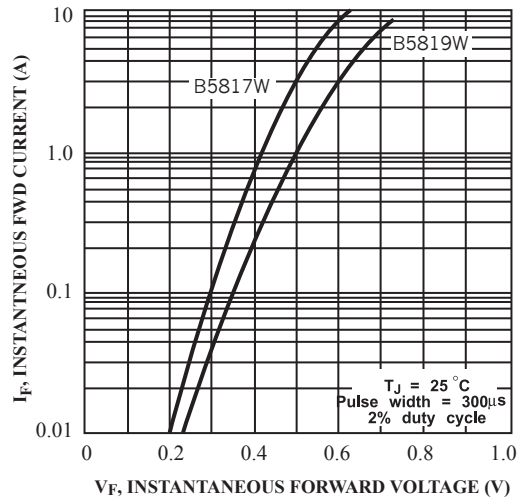


Fig. 2 Typical Forward Characteristics

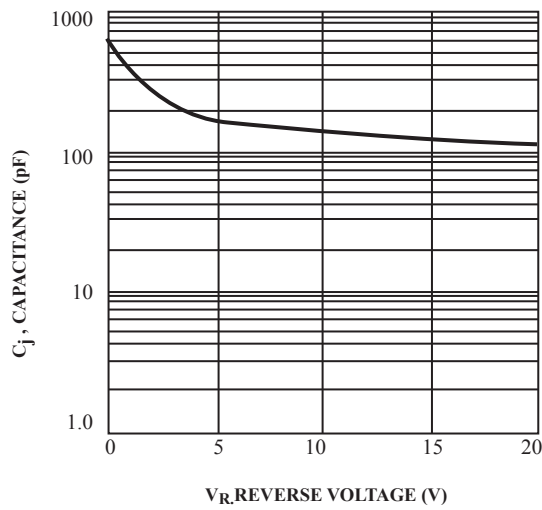


Fig. 3 Typ, Junction Capacitance vs. Reverse Voltage