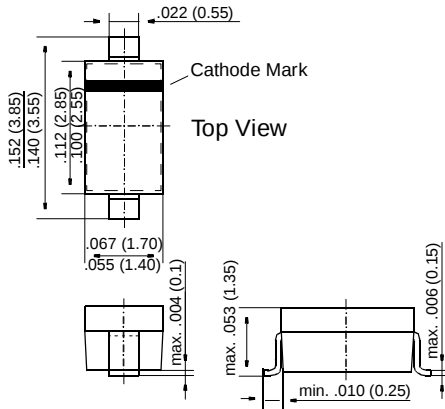


# BAT46W

## Schottky Diodes

### SOD-123



Dimensions in inches and (millimeters)

### FEATURES

- ◆ For general purpose applications.
- ◆ These diodes feature very low turn-on voltage and fast switching. These devices are protected by a PN junction guard ring against excessive voltage, such as electrostatic discharges.
- ◆ This diode is also available in the DO-35 case with type designation BAT46 and in the MiniMELF case with type designations LL46.



### MECHANICAL DATA

**Case:** SOD-123 Plastic Case

**Weight:** approx. 0.01 g

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified

|                                                                                                   | Symbol    | Value             | Unit |
|---------------------------------------------------------------------------------------------------|-----------|-------------------|------|
| Repetitive Peak Reverse Voltage                                                                   | $V_{RRM}$ | 100               | V    |
| Forward Continuous Current at $T_{amb} = 25\text{ °C}$                                            | $I_F$     | 150 <sup>2)</sup> | mA   |
| Repetitive Peak Forward Current at $t_p < 1\text{ s}$ , $\delta < 0.5$ , $T_{amb} = 25\text{ °C}$ | $I_{FRM}$ | 350 <sup>2)</sup> | mA   |
| Surge Forward Current at $t_p < 10\text{ ms}$ , $T_{amb} = 25\text{ °C}$                          | $I_{FSM}$ | 750 <sup>2)</sup> | mA   |
| Power Dissipation <sup>1)</sup> at $T_{amb} = 65\text{ °C}$                                       | $P_{tot}$ | 150 <sup>2)</sup> | mW   |
| Junction Temperature                                                                              | $T_j$     | 125               | °C   |
| Ambient Operating Temperature Range                                                               | $T_{amb}$ | -55 to +125       | °C   |
| Storage Temperature Range                                                                         | $T_S$     | -55 to +150       | °C   |

<sup>2)</sup> Valid provided that electrodes are kept at ambient temperature

# BAT46W

## ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified

|                                                                                               | Symbol      | Min. | Typ. | Max.              | Unit    |
|-----------------------------------------------------------------------------------------------|-------------|------|------|-------------------|---------|
| Reverse Breakdown Voltage<br>tested with 100 $\mu$ A Pulses                                   | $V_{(BR)R}$ | 100  | —    | —                 | V       |
| Forward Voltage<br>Pulse Test $t_p < 300 \mu s$ , $\delta < 2\%$<br>at $I_F = 0.1 \text{ mA}$ | $V_F$       | —    | —    | 0.25              | V       |
| at $I_F = 10 \text{ mA}$                                                                      | $V_F$       | —    | —    | 0.45              | V       |
| at $I_F = 250 \text{ mA}$                                                                     | $V_F$       | —    | —    | 1                 | V       |
| Leakage Current<br>Pulse Test $t_p < 300 \mu s$ , $\delta < 2\%$<br>at $V_R = 1.5 \text{ V}$  | $I_R$       | —    | —    | 0.5               | $\mu$ A |
| at $V_R = 1.5 \text{ V}$ , $T_j = 60 \text{ }^\circ\text{C}$                                  | $I_R$       | —    | —    | 5                 | $\mu$ A |
| at $V_R = 10 \text{ V}$                                                                       | $I_R$       | —    | —    | 0.8               | $\mu$ A |
| at $V_R = 10 \text{ V}$ , $T_j = 60 \text{ }^\circ\text{C}$                                   | $I_R$       | —    | —    | 7.5               | $\mu$ A |
| at $V_R = 50 \text{ V}$                                                                       | $I_R$       | —    | —    | 2                 | $\mu$ A |
| at $V_R = 50 \text{ V}$ , $T_j = 60 \text{ }^\circ\text{C}$                                   | $I_R$       | —    | —    | 15                | $\mu$ A |
| at $V_R = 75 \text{ V}$                                                                       | $I_R$       | —    | —    | 5                 | $\mu$ A |
| at $V_R = 75 \text{ V}$ , $T_j = 60 \text{ }^\circ\text{C}$                                   | $I_R$       | —    | —    | 20                | $\mu$ A |
| Capacitance<br>at $V_R = 0 \text{ V}$ , $f = 1 \text{ MHz}$                                   | $C_{tot}$   | —    | 10   | —                 | pF      |
| at $V_R = 1 \text{ V}$ , $f = 1 \text{ MHz}$                                                  | $C_{tot}$   | —    | 6    | —                 | pF      |
| Thermal Resistance Junction to Ambient Air                                                    | $R_{thJA}$  | —    | —    | 0.3 <sup>2)</sup> | K/mW    |
| <sup>2)</sup> Valid provided that electrodes are kept at ambient temperature                  |             |      |      |                   |         |