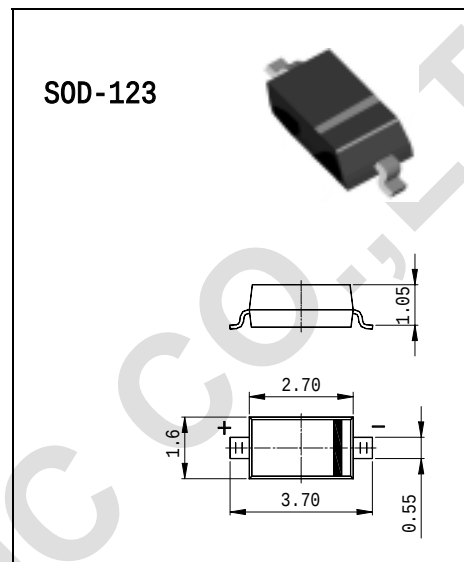


SOD-123



## Features

- High Breakdown Voltage
- Low Turn-on Voltage
- Guard Ring Construction for Transient Protection

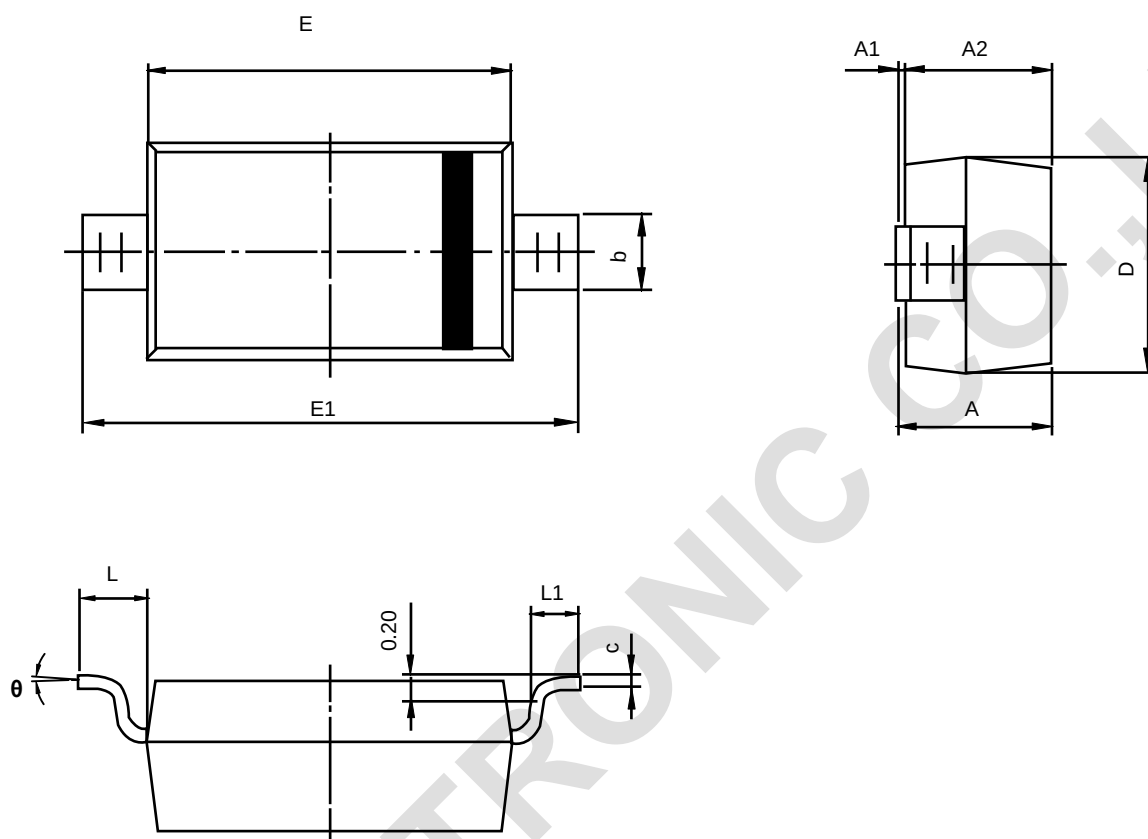
## Maximum Ratings @ T<sub>A</sub> = 25°C unless otherwise specified

| Characteristic                                                                         | Symbol                          | BAT46W      | Unit |
|----------------------------------------------------------------------------------------|---------------------------------|-------------|------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 100         | V    |
| Average Rectified Forward Current                                                      | $I_O$                           | 75          | mA   |
| Forward Continuous Current (Note 1)                                                    | $I_F$                           | 150         | mA   |
| Repetitive Peak Forward Current (Note 1)<br>@ $t_p < 1.0s$ , Duty Cycle < 50%          | $I_{FRM}$                       | 350         | mA   |
| Forward Surge Forward Current (Note 1) @ $t_p = 10ms$                                  | $I_{FSM}$                       | 750         | mA   |
| Power Dissipation (Note 1)                                                             | $P_d$                           | 200         | mW   |
| Operating and Storage Temperature Range                                                | $T_j, T_{STG}$                  | -55 to +125 | °C   |

## Electrical Characteristics @ T<sub>A</sub> = 25°C unless otherwise specified

| Characteristic                              | Symbol          | Min | Typ       | Max                                                | Unit    | Test Condition                                                                                                                                                                                                                       |
|---------------------------------------------|-----------------|-----|-----------|----------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reverse Breakdown Voltage                   | $V_{(BR)R}$     | 100 | —         | —                                                  | V       | $I_{RS} = 100\mu A$ pulses                                                                                                                                                                                                           |
| Forward Voltage                             | $V_F$           | —   | —         | 0.25<br>0.45<br>1.00                               | V       | $t_p < 300\mu s$ , duty cycle < 2%<br>$I_F = 0.1mA$<br>$I_F = 10mA$<br>$I_F = 250mA$                                                                                                                                                 |
| Reverse Leakage Current                     | $I_R$           | —   | —         | 0.5<br>5.0<br>0.8<br>7.5<br>2.0<br>15<br>5.0<br>20 | $\mu A$ | $t_p < 300\mu s$ , duty cycle < 2%<br>$V_R = 1.5V$<br>$V_R = 1.5V, T_j = 60^\circ C$<br>$V_R = 10V$<br>$V_R = 10V, T_j = 60^\circ C$<br>$V_R = 50V$<br>$V_R = 50V, T_j = 60^\circ C$<br>$V_R = 75V$<br>$V_R = 75V, T_j = 60^\circ C$ |
| Junction Capacitance                        | $C_j$           | —   | 10<br>6.0 | —                                                  | pF      | $V_R = 0V, f = 1.0MHz$<br>$V_R = 1.0V, f = 1.0MHz$                                                                                                                                                                                   |
| Thermal Resistance, Junction to Ambient Air | $R_{\theta JA}$ | —   | —         | 500                                                | K/W     | Note 1                                                                                                                                                                                                                               |

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



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 1.050                     | 1.250 | 0.041                | 0.049 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 1.050                     | 1.150 | 0.041                | 0.045 |
| b      | 0.450                     | 0.650 | 0.018                | 0.026 |
| c      | 0.080                     | 0.150 | 0.003                | 0.006 |
| D      | 1.500                     | 1.700 | 0.059                | 0.067 |
| E      | 2.600                     | 2.800 | 0.102                | 0.110 |
| E1     | 3.550                     | 3.850 | 0.140                | 0.152 |
| L      | 0.500REF                  |       | 0.020REF             |       |
| L1     | 0.250                     | 0.450 | 0.010                | 0.018 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |