

## High Speed Switching Diode



**SOD123**

### Features

- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 1
- $V_R$  75V
- $I_{FAV}$  150mA
- Part no. with suffix "Q" means AEC-Q101 qualified

### Applications

- Extreme fast switches
- Automotive

### Mechanical Data

- **Case:** SOD123
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

### ■ Maximum Ratings ( $T_a=25^{\circ}\text{C}$ Unless otherwise specified)

| PARAMETER                                                       | SYMBOL                 | UNIT               | CONDITIONS                          | VALUE       |
|-----------------------------------------------------------------|------------------------|--------------------|-------------------------------------|-------------|
| RMS Reverse Voltage                                             | $V_{R(RMS)}$           | V                  |                                     | 71          |
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage | $V_{RRM}$<br>$V_{RWM}$ | V                  |                                     | 100         |
| DC Blocking Voltage                                             | $V_R$                  | V                  |                                     | 75          |
| Average Forward Current                                         | $I_{FAV}$              | mA                 |                                     | 150         |
| Repetitive Peak Forward Current                                 | $I_{FRM}$              | mA                 |                                     | 300         |
| Peak Forward Surge Current                                      | $I_{FSM}$              | A                  | Pulse width=1 us<br>Pulse width=1 s | 2<br>1      |
| Power Dissipation                                               | $P_{tot}$              | mW                 |                                     | 400         |
| Thermal Resistance Junction to Ambient                          | $R_{thJA}$             | K/W                |                                     | 315         |
| Maximum Junction Temperature                                    | $T_J$                  | $^{\circ}\text{C}$ |                                     | -55 to +150 |
| Storage Temperature Range                                       | $T_{stg}$              | $^{\circ}\text{C}$ |                                     | -55 to +150 |



# 1N4148WQ

## ■ Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

| PARAMETER             | SYMBOL          | UNIT | CONDITIONS                                                                      | MIN | MAX   |
|-----------------------|-----------------|------|---------------------------------------------------------------------------------|-----|-------|
| Forward Voltage       | V <sub>F</sub>  | V    | I <sub>F</sub> =1mA                                                             |     | 0.715 |
|                       |                 |      | I <sub>F</sub> =10mA                                                            |     | 0.855 |
|                       |                 |      | I <sub>F</sub> =50mA                                                            |     | 1.0   |
|                       |                 |      | I <sub>F</sub> =150mA                                                           |     | 1.25  |
| Reverse Current       | I <sub>R</sub>  | μA   | V <sub>R</sub> =20V                                                             |     | 0.025 |
|                       |                 |      | V <sub>R</sub> =75V                                                             |     | 1.0   |
| Breakdown Voltage     | V <sub>R</sub>  | V    | I <sub>R</sub> =10μA                                                            | 75  |       |
| Diode Capacitance     | C <sub>D</sub>  | pF   | V <sub>R</sub> =V <sub>F</sub> =0V, f =1MHz                                     |     | 4     |
| Reverse Recovery Time | t <sub>rr</sub> | ns   | I <sub>F</sub> =10mA, I <sub>rr</sub> =0.1I <sub>R</sub> , R <sub>L</sub> =100Ω |     | 4     |

## ■ Ordering Information (Example)

| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g)    | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|-------------------|----------------------|-------------------------|----------------------------|---------------|
| 1N4148WQ      | F2           | Approximate 0.010 | 3000                 | 30000                   | 120000                     | 7" reel       |



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## ■ Characteristics (Typical)

Fig.1:  $P_D-T_A$

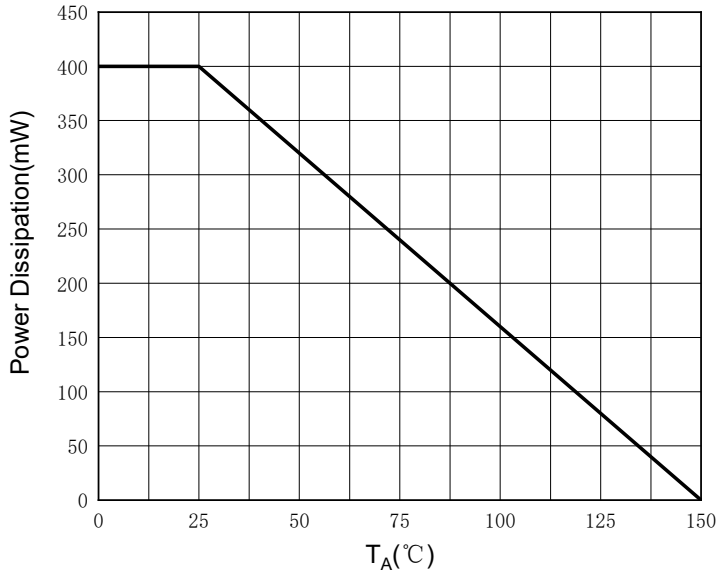


Fig.2: Capacitance Characteristics

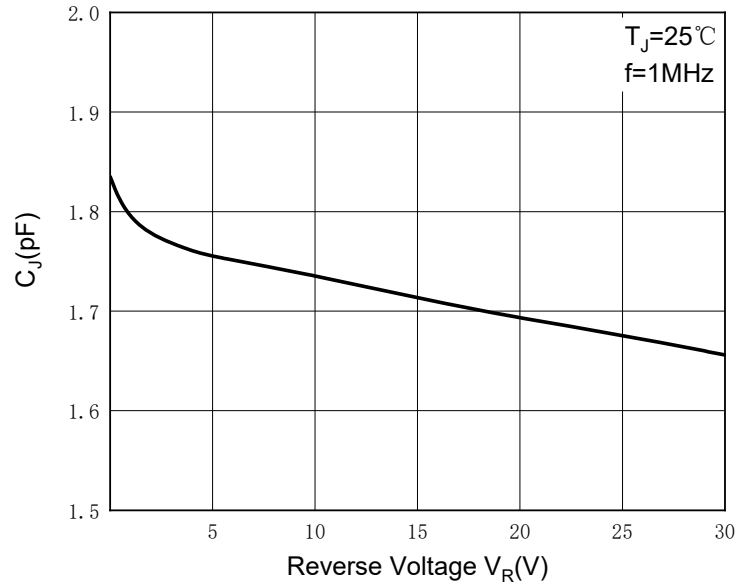


Fig.3: Forward Characteristics

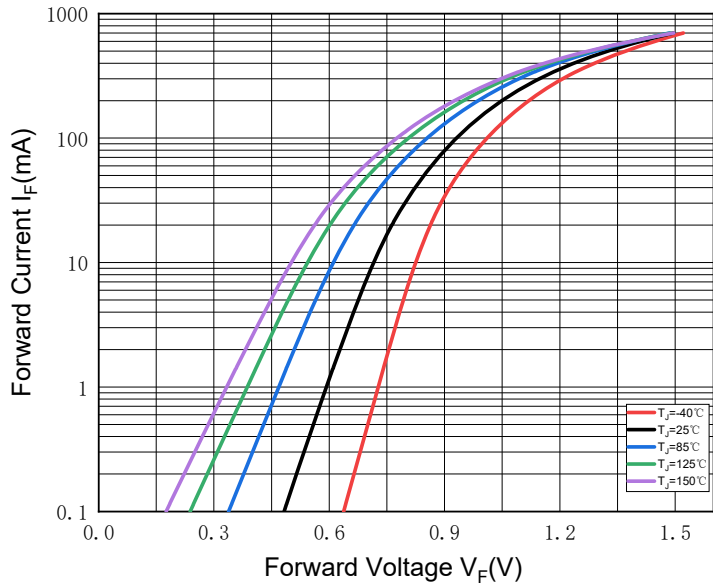
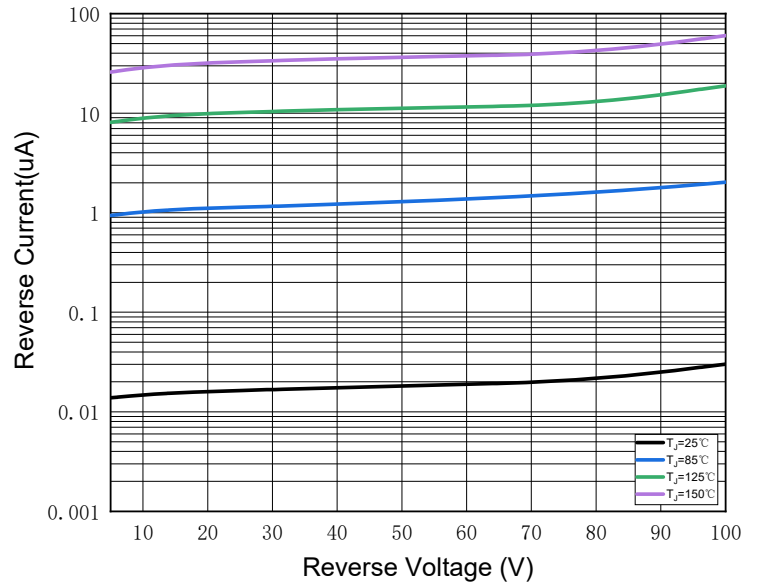


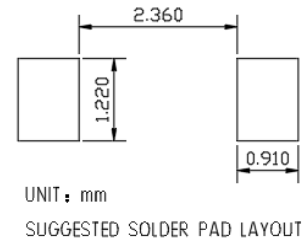
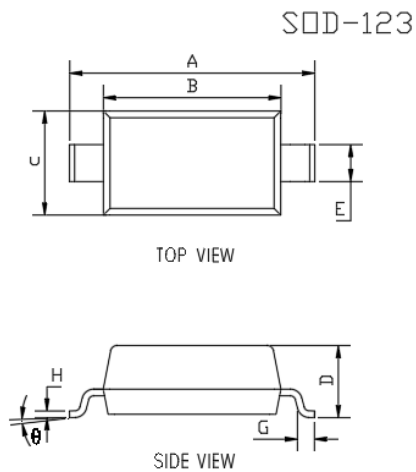
Fig.4: Reverse Characteristics





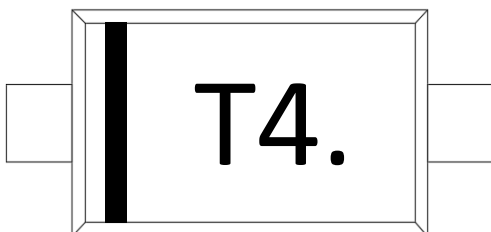
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## ■ Outline Dimensions



| DIMENSIONS |        |       |       |       |
|------------|--------|-------|-------|-------|
| DIM        | INCHES |       | MM    |       |
|            | MIN    | MAX   | MIN   | MAX   |
| A          | 0.140  | 0.152 | 3.550 | 3.850 |
| B          | 0.100  | 0.112 | 2.550 | 2.850 |
| C          | 0.055  | 0.071 | 1.400 | 1.800 |
| D          | 0.037  | 0.053 | 0.950 | 1.350 |
| E          | 0.020  | 0.028 | 0.510 | 0.710 |
| G          | 0.006  | 0.018 | 0.150 | 0.450 |
| H          | 0.003  | 0.010 | 0.080 | 0.250 |
| J          | 0.000  | 0.006 | 0.000 | 0.150 |
| $\theta$   | 0      | 8°    | 0     | 8°    |

## ■ Marking Information



### Note:

1. All marking is at middle of the product body
2. All marking is in laser marking
3. Body color: Black



# 1N4148WQ

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## Disclaimer

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