

# SMD Switching Diode

**Comchip**  
SMD Diode Specialist

## ACDSW4148-G

Reverse Voltage: 100 V

Forward Current: 150mA

RoHS Device



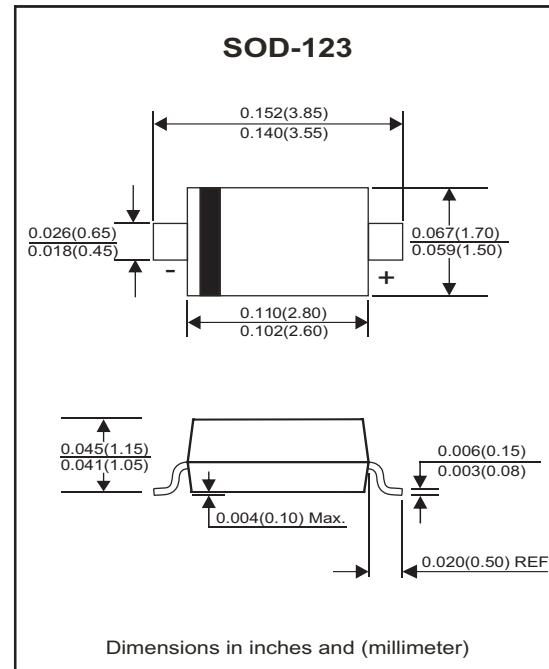
### Features

- Fast switching speed
- High speed
- High conductance
- Surface mount package ideally suited for automatic insertion
- For general purpose switching applications
- Comply with AEC-Q101

### Mechanical data

- Case: SOD-123, Molded Plastic
- Terminals: Solderable per MIL-STD-750, method 2026.
- Weight: 0.0097 grams(approx.).

### Circuit diagram



Dimensions in inches and (millimeter)

### Maximum Rating (at Ta=25°C unless otherwise noted)

| Parameter  | Symbol              | Value    | Unit |
|--|---------------------|----------|------|
| Peak repetitive peak reverse voltage             | V <sub>RRM</sub>    |          |      |
| Working peak reverse voltage                     | V <sub>RWM</sub>    | 100      | V    |
| DC blocking voltage                              | V <sub>R</sub>      |          |      |
| RMS reverse voltage                              | V <sub>R(RMS)</sub> | 71       | V    |
| Average rectified output current                 | I <sub>O</sub>      | 150      | mA   |
| Non-Repetitive peak forward surge current @t=1μs | I <sub>FSM</sub>    | 2        | A    |
| Power dissipation                                | P <sub>D</sub>      | 350      | mW   |
| Thermal resistance from junction to ambient      | R <sub>θJA</sub>    | 250      | °C/W |
| Junction temperature range                       | T <sub>j</sub>      | -40~+150 | °C   |
| Storage temperature range                        | T <sub>STG</sub>    | -55~+150 | °C   |

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## Electrical Characteristics (at $T_a=25^\circ\text{C}$ unless otherwise noted)

| Parameter                     | Conditions  | Symbol   | Min | Typ | Max   | Unit          |
|-------------------------------|---|----------|-----|-----|-------|---------------|
| Forward voltage               | $I_F = 1 \text{ mA}$  | $V_{F1}$ |     |     | 0.715 | V             |
|                               | $I_F = 10 \text{ mA}$   | $V_{F2}$ |     |     | 0.855 | V             |
|                               | $I_F = 50 \text{ mA}$   | $V_{F3}$ |     |     | 1.0   | V             |
|                               | $I_F = 150 \text{ mA}$  | $V_{F4}$ |     |     | 1.25  | V             |
| Reverse current               | $V_R = 20 \text{ V}$  | $I_{R1}$ |     |     | 25    | nA            |
|                               | $V_R = 75 \text{ V}$  | $I_{R2}$ |     |     | 1     | $\mu\text{A}$ |
| Capacitance between terminals | $f = 1 \text{ MHz}$ and $V_R=0\text{V}$   | $C_J$    |     |     | 2     | pF            |
| Reverse recovery time         | $I_F = I_R = 10 \text{ mA}$ , $R_L = 100 \Omega$ ,<br>$I_{rr} = 0.1 \times I_R$ | $T_{RR}$ |     |     | 4     | nS            |

## Typical Characteristics (ACDSW4148-G)

Fig.1 - Forward Characteristics

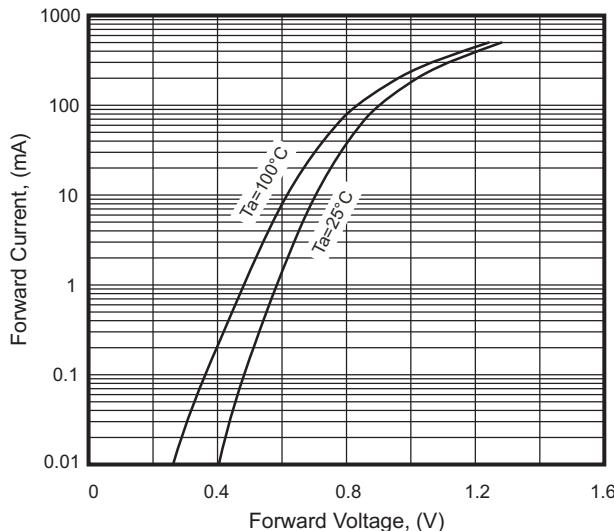


Fig.2 - Reverse Characteristics

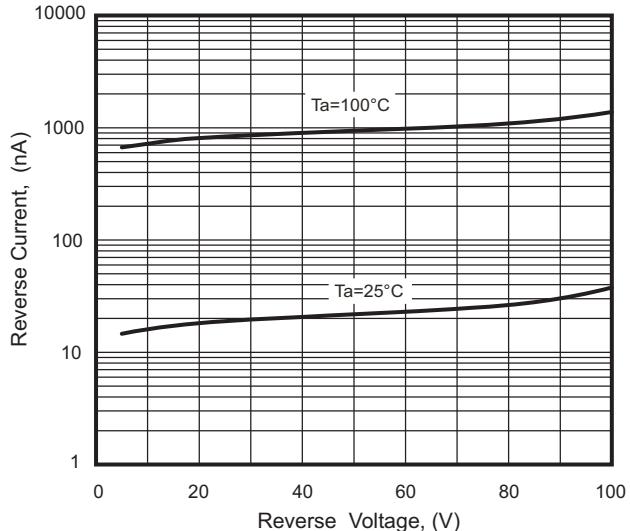


Fig.3 - Capacitance Characteristics

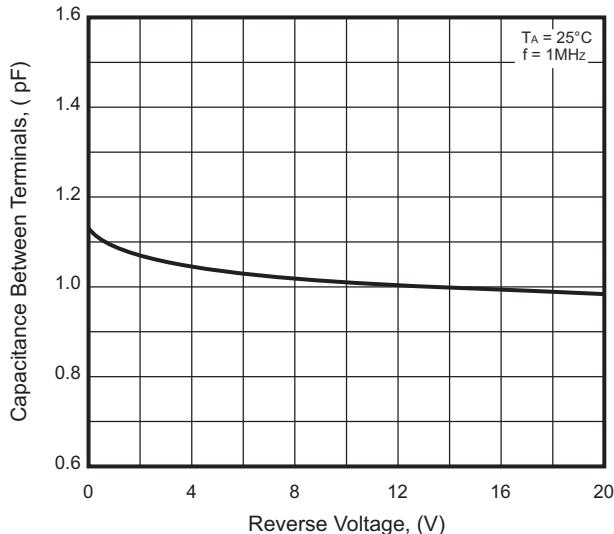
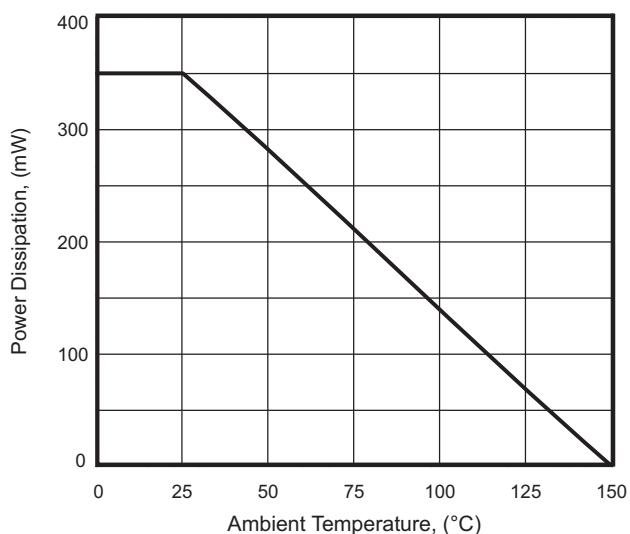


Fig.4 - Power Derating Curve



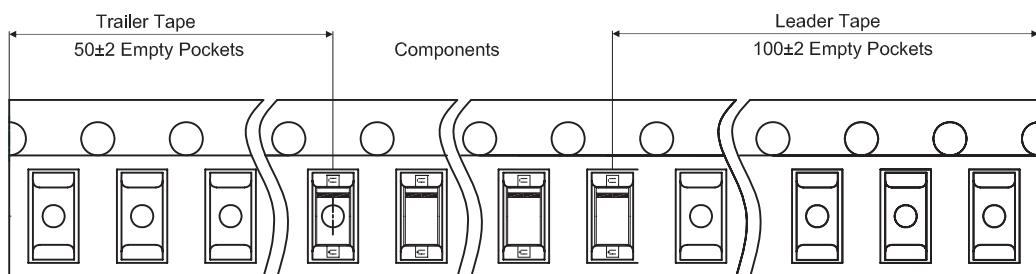
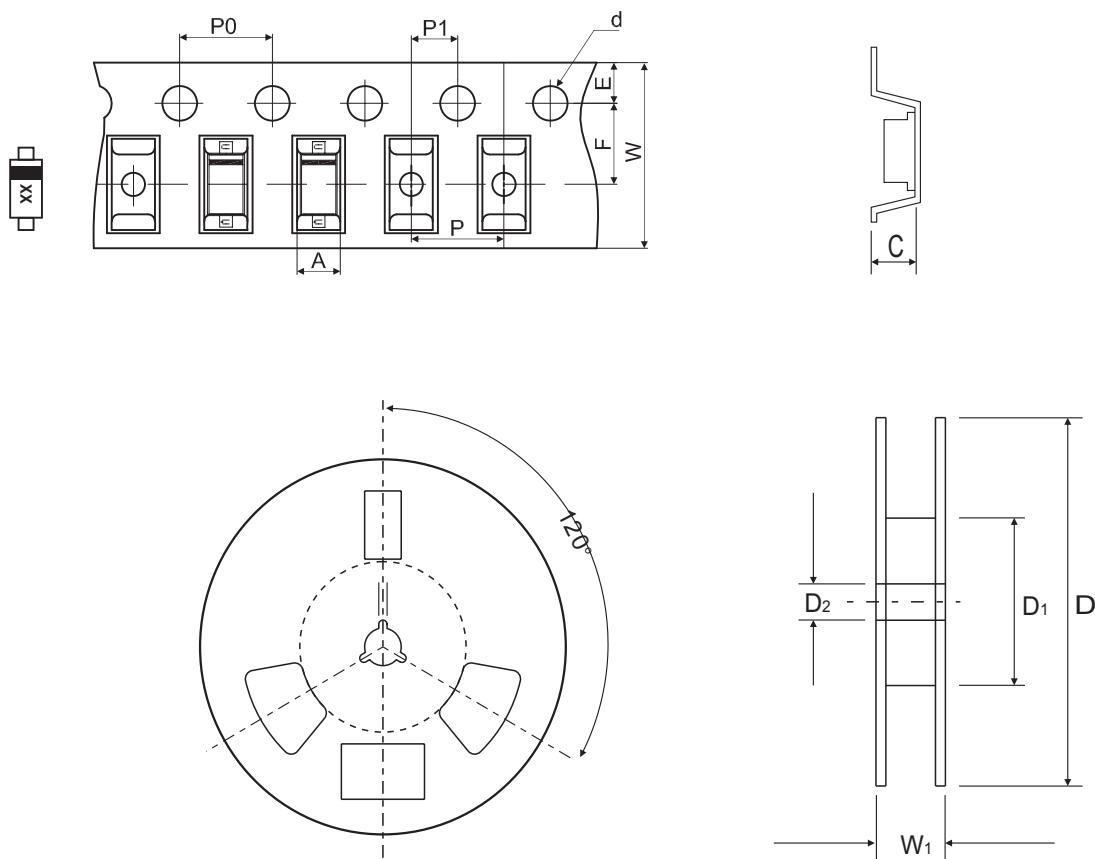
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## Reel Taping Specification



| SOD-123 | SYMBOL | A             | B             | C             | d             | D             | D <sub>1</sub> | D <sub>2</sub> |
|---------|--------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|
|         | (mm)   | 1.85 ± 0.05   | 3.94 ± 0.05   | 1.57 ± 0.05   | 1.55 ± 0.10   | 178.00 ± 2.00 | 54.40 ± 1.00   | 13.00 ± 1.00   |
|         | (inch) | 0.073 ± 0.002 | 0.155 ± 0.002 | 0.062 ± 0.002 | 0.061 ± 0.004 | 7.008 ± 0.079 | 2.142 ± 0.039  | 0.512 ± 0.039  |

| SOD-123 | SYMBOL | E             | F             | P             | P0            | P1            | W                       | W1            |
|---------|--------|---------------|---------------|---------------|---------------|---------------|-------------------------|---------------|
|         | (mm)   | 1.75 ± 0.10   | 3.50 ± 0.10   | 4.00 ± 0.10   | 4.00 ± 0.10   | 2.00 ± 0.10   | 8.00 + 0.30 / - 0.10    | 12.30 ± 1.00  |
|         | (inch) | 0.069 ± 0.004 | 0.138 ± 0.004 | 0.157 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.004 | 0.315 + 0.012 / - 0.004 | 0.484 ± 0.039 |

## Marking Code

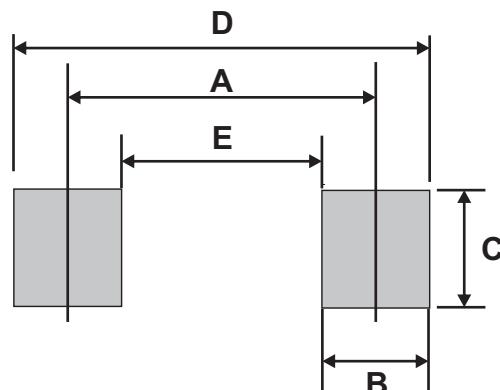
| Part Number | Marking Code |
|-------------|--------------|
| ACDSW4148-G | T4           |



**xx = Product type marking code**

## Suggested PAD Layout

| SIZE | SOD-123 |        |
|------|---------|--------|
|      | (mm)    | (inch) |
| A    | 3.24    | 0.128  |
| B    | 0.80    | 0.031  |
| C    | 1.00    | 0.039  |
| D    | 4.04    | 0.159  |
| E    | 2.44    | 0.096  |



## Standard Packaging

| Case Type | REEL PACK       |                     |
|-----------|-----------------|---------------------|
|           | REEL<br>( pcs ) | Reel Size<br>(inch) |
| SOD-123   | 3,000           | 7                   |

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