

## CDBW46-G

**Reverse Voltage: 100 Volts**

**Forward Current: 150 mA**

**RoHS Device**

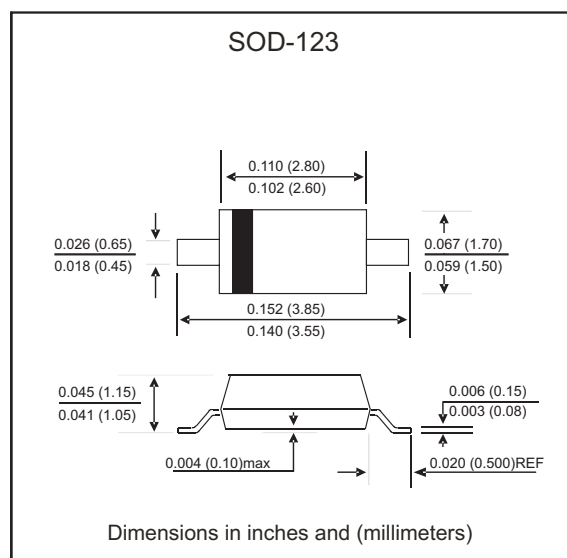


### Features

- Design for mounting on small surface.
- High breakdown voltage.
- Low trun-on voltage.
- Guard ring construction for transient protection.

### Mechanical data

- Case: SOD-123, Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Approx. Weight: 0.04 gram



### Maximum Rating (at TA=25°C )

| Parameter                                                                                   | Conditions                        | Symbol                          | Limits      | Unit |
|---------------------------------------------------------------------------------------------|-----------------------------------|---------------------------------|-------------|------|
| Peak repetitive peak reverse voltage<br>Working peak reverse voltage<br>DC blocking voltage |                                   | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 100         | V    |
| Forward continuous current                                                                  |                                   | $I_F$                           | 150         | mA   |
| Repetitive Peak Forward current (Note 1)                                                    | @ $t_p < 1.0s$ , Duty Cycle < 50% | $I_{FRM}$                       | 350         | mA   |
| Forward surge Forward current (Note 1)                                                      | @ $t_p < 10ms$                    | $I_{FSM}$                       | 750         | mA   |
| Power dissipation                                                                           |                                   | $P_D$                           | 200         | mW   |
| Thermal Resistance Junction to ambient air                                                  |                                   | $R_{\theta JA}$                 | 625         | °C/W |
| Junction temperature                                                                        |                                   | $T_j$                           | +150        | °C   |
| Storage temperature                                                                         |                                   | $T_{STG}$                       | -55 to +150 | °C   |

### Electrical Characteristics (at TA=25°C unless otherwise Specified)

| Parameter                          | Conditions                                                            | Symbol | Min | Typ | Max                  | Unit    |
|------------------------------------|-----------------------------------------------------------------------|--------|-----|-----|----------------------|---------|
| Reverse breakdown voltage (Note 2) | $I_R = 100\mu A$                                                      | $V_R$  | 100 |     |                      | V       |
| Forward voltage (Note 2)           | $I_{F1} = 0.1 mA$<br>$I_{F2} = 10mA$<br>$I_{F3} = 250mA$              | $V_F$  |     |     | 0.25<br>0.45<br>1.0  | V       |
| Reverse Voltage Leakage current    | $V_{R1} = 1.5V$<br>$V_{R2} = 10V$<br>$V_{R3} = 50V$<br>$V_{R4} = 75V$ | $I_R$  |     |     | 0.3<br>0.5<br>1<br>2 | $\mu A$ |
| Diode capacitance                  | $V_R = 0V, f = 1 MHz$<br>$V_R = 1V, f = 1 MHz$                        | $C_T$  |     |     | 20<br>12             | pF      |

Notes: 1.Part mounted on FR-4 board with recommended pad layout.  
2.Short duration pulse test used to minimize self-heating effect.

## RATING AND CHARACTERISTIC CURVES (CDBW46-G)

Fig.1-Typical Forward Characteristics

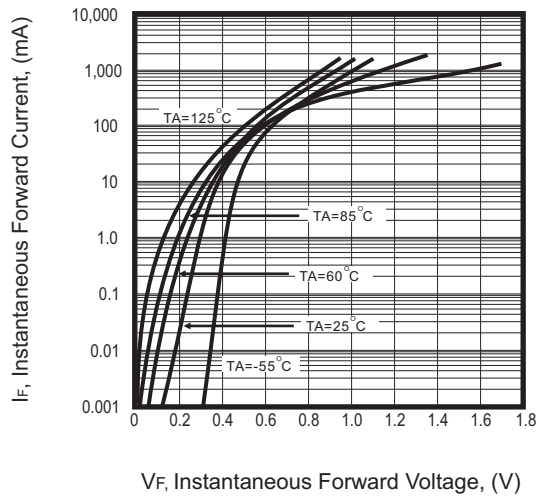


Fig.2 - Typical Reverse characteristics

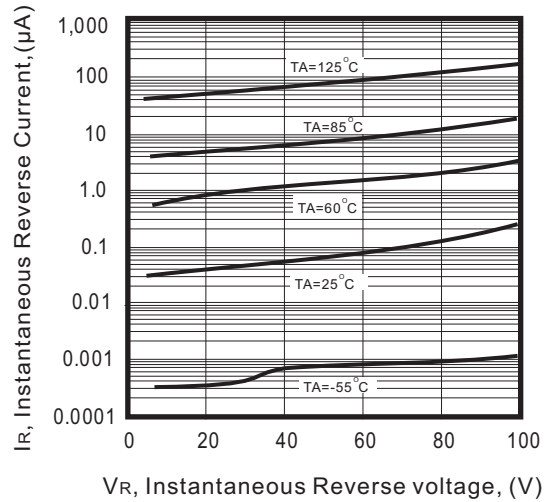


Fig.3 - Total Capacitance vs. Reverse Voltage

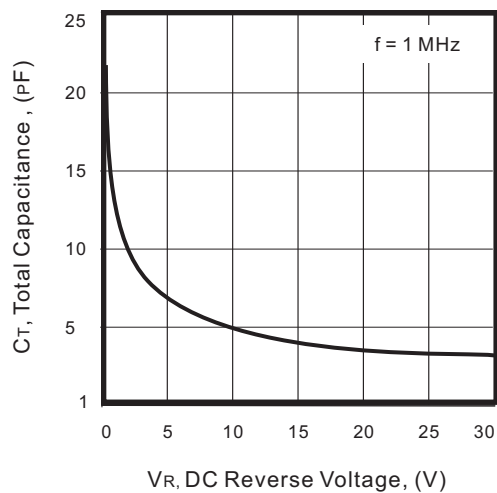
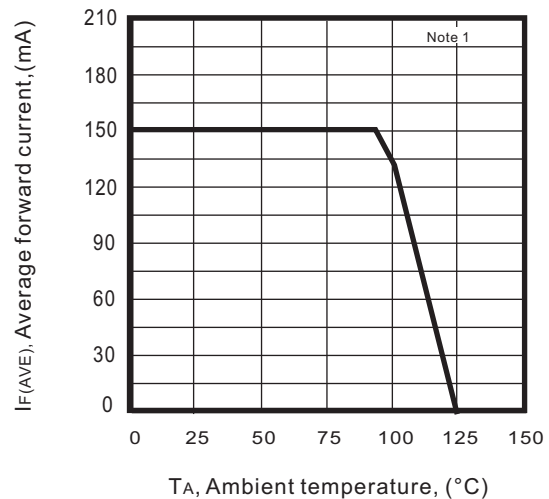
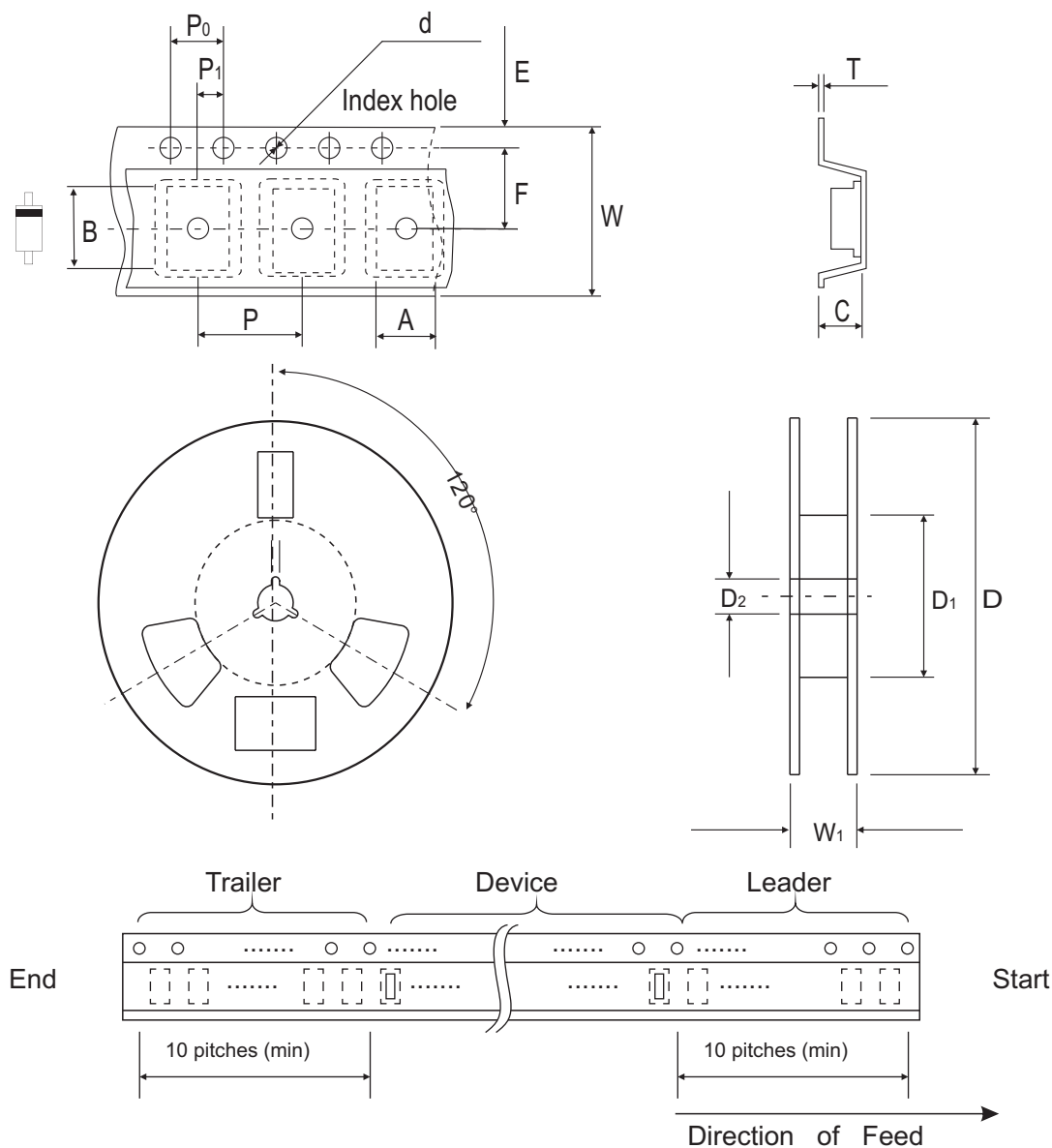


Fig.4 - Forward Current Derating



## Reel Taping Specification



| SOD-123 | SYMBOL | A             | B             | C             | d             | D             | D <sub>1</sub> | D <sub>2</sub> |
|---------|--------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|
|         | (mm)   | 1.85 ± 0.10   | 3.94 ± 0.10   | 1.57 ± 0.10   | 1.55 ± 0.10   | 178 ± 1.00    | 54.40 ± 0.40   | 13.0 ± 0.20    |
|         | (inch) | 0.073 ± 0.004 | 0.155 ± 0.004 | 0.062 ± 0.004 | 0.061 ± 0.004 | 7.008 ± 0.039 | 2.142 ± 0.016  | 0.512 ± 0.008  |

| SOD-123 | SYMBOL | E             | F             | P             | P <sub>0</sub> | P <sub>1</sub> | W                       | W <sub>1</sub> |
|---------|--------|---------------|---------------|---------------|----------------|----------------|-------------------------|----------------|
|         | (mm)   | 1.75 ± 0.10   | 3.50 ± 0.05   | 4.00 ± 0.10   | 4.00 ± 0.10    | 2.00 ± 0.10    | 8.00 + 0.30 / - 0.10    | 9.50 ± 1.00    |
|         | (inch) | 0.069 ± 0.004 | 0.138 ± 0.002 | 0.158 ± 0.004 | 0.158 ± 0.004  | 0.079 ± 0.004  | 0.315 + 0.012 / - 0.004 | 0.374 ± 0.039  |

## Marking Code

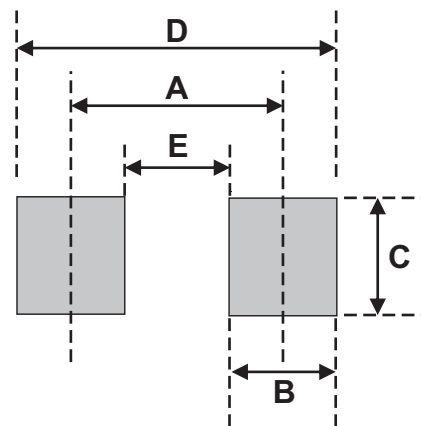
| Part Number | Marking Code |
|-------------|--------------|
| CDBW46-G    | S9           |



xx= Product type marking code

## Suggested PAD Layout

| SIZE | SOD-123 |        |
|------|---------|--------|
|      | (mm)    | (inch) |
| A    | 3.35    | 0.132  |
| B    | 0.80    | 0.031  |
| C    | 1.00    | 0.039  |
| D    | 4.15    | 0.163  |
| E    | 2.55    | 0.100  |



## Standard Package

| Case Type | REEL PACK          |                  |            |
|-----------|--------------------|------------------|------------|
|           | Qty per Reel (Pcs) | Reel Size (inch) | Type Mat'l |
| SOD-123   | 3000               | 7                | Plastic    |