

**SOT-23 Formed SMD Package**

**CMBD4150**

**SILICON PLANAR EPITAXIAL HIGH SPEED DIODE**

**Marking**

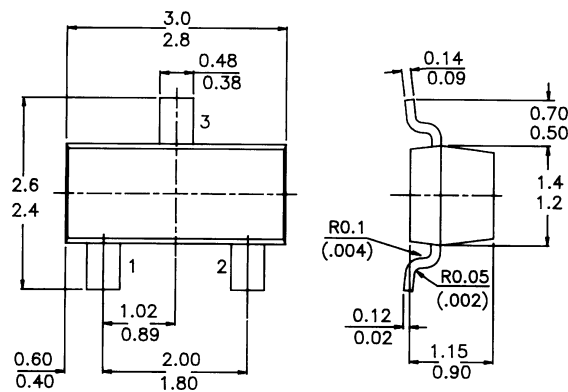
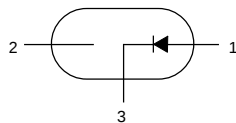
CMBD4150 = D18

**PACKAGE OUTLINE DETAILS**

ALL DIMENSIONS IN mm

**Pin configuration**

- 1 = ANODE
- 2 = NC
- 3 = CATHODE



**ABSOLUTE MAXIMUM RATINGS**

|                                                                       |           |      |        |
|-----------------------------------------------------------------------|-----------|------|--------|
| Continuous reverse voltage                                            | $V_R$     |      | 50 V   |
| Repetitive peak reverse voltage                                       | $V_{RRM}$ | max. | 75 V   |
| Repetitive peak forward current                                       | $I_{FRM}$ | max. | 600 mA |
| Junction temperature                                                  | $T_j$     | max. | 150 °C |
| Peak forward surge current                                            |           |      |        |
| $T = 1 \mu\text{sec.}$                                                | $I_{FSM}$ | max. | 4 A    |
| $T = 1 \text{ sec.}$                                                  | $I_{FSM}$ | max. | 0.5 A  |
| Reverse recovery time when switched from                              |           |      |        |
| $I_F = 400 \text{ mA}$ to $I_R = 400 \text{ mA}$ ; $R_L = 100 \Omega$ |           |      |        |
| measured at $I_R = 4 \text{ mA}$                                      | $T_{rr}$  | max. | 6 ns   |

RATINGS (at  $T_A = 25 \text{ °C}$ , unless otherwise specified)

|                     |           |  |                |
|---------------------|-----------|--|----------------|
| Storage Temperature | $T_{stg}$ |  | -55 to +150 °C |
|---------------------|-----------|--|----------------|

## CMBD4150

### THERMAL RESISTANCE

|                          |               |     |     |
|--------------------------|---------------|-----|-----|
| From junction to ambient | $R_{th\ j-a}$ | 500 | K/W |
|--------------------------|---------------|-----|-----|

### CHARACTERISTICS (at $T_A = 25\ ^\circ\text{C}$ , unless otherwise specified)

|                                                                    |           |      |      |               |
|--------------------------------------------------------------------|-----------|------|------|---------------|
| Continuous reverse voltage                                         | $V_R$     | max. | 50   | V             |
| Repetitive peak reverse voltage                                    | $V_{RRM}$ | max. | 75   | V             |
| Forward current (d.c.)                                             | $I_F$     | max. | 300  | mA            |
| Repetitive peak forward current                                    | $I_{FRM}$ | max. | 600  | mA            |
| Non-repetitive peak forward current                                |           |      |      |               |
| $T = 1\ \mu\text{sec}$                                             | $I_{FSM}$ | max. | 4    | A             |
| $T = 1\ \text{sec}$                                                | $I_{FSM}$ | max. | 0.5  | A             |
| Diode capacitance                                                  |           |      |      |               |
| $V_R = 0$ ; $f = 1\ \text{MHz}$                                    | $C_D$     | max. | 2.5  | pF            |
| Forward voltage                                                    |           |      |      |               |
| $I_F = 1\ \text{mA}$                                               | $V_F$     | min. | 540  | mV            |
|                                                                    |           | max. | 620  | mV            |
|                                                                    |           |      |      |               |
| $I_F = 10\ \text{mA}$                                              | $V_F$     | min. | 660  | mV            |
|                                                                    |           | max. | 740  | mV            |
|                                                                    |           |      |      |               |
| $I_F = 50\ \text{mA}$                                              | $V_F$     | min. | 760  | mV            |
|                                                                    |           | max. | 860  | mV            |
|                                                                    |           |      |      |               |
| $I_F = 100\ \text{mA}$                                             | $V_F$     | min. | 820  | mV            |
|                                                                    |           | max. | 920  | mV            |
|                                                                    |           |      |      |               |
| $I_F = 200\ \text{mA}$                                             | $V_F$     | min. | 870  | mV            |
|                                                                    |           | max. | 1    | V             |
| Reverse breakdown voltage                                          |           |      |      |               |
| $I_R = 100\ \text{mA}$                                             | $V_{BR}$  | min  | 75   | V             |
| Reverse voltage leakage current                                    |           |      |      |               |
| $V_R = 50\ \text{V}$                                               | $I_R$     | max. | 100  | nA            |
| Reverse current                                                    |           |      |      |               |
| $V_R = 50\ \text{V}$ ; $T_j = 150\ ^\circ\text{C}$                 | $I_R$     | max. | 100  | $\mu\text{A}$ |
| Forward recovery voltage                                           |           |      |      |               |
| when switched to $I_F = 10\ \text{mA}$ ; $t_P = 20\ \text{nsec}$ . | $V_{FR}$  | max. | 1.75 | V             |
| Reverse recovery time                                              |           |      |      |               |
| $I_F = I_R = 10 - 200\ \text{mA}$ ; $R_L = 100\ \Omega$            | $t_{rr}$  | max. | 4    | ns            |
| $I_F = I_R = 200 - 400\ \text{mA}$ ; $R_L = 100\ \Omega$           | $t_{rr}$  | max. | 6    | ns            |

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