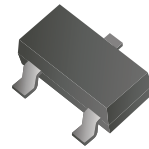


## CDBT-54/S/C/A-G

**Reverse Voltage: 30 Volts**

**Forward Current: 200 mA**

**RoHS Device**



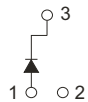
### Features

- Design for mounting on small surface.
- High speed switching application, circuit protection.
- Low forward voltage drop.

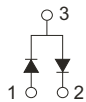
### Mechanical data

- Case: SOT-23, molded plastic.
- Terminals: solderable per MIL-STD-750, method 2026.
- Approx. weight: 0.008 grams

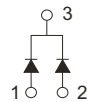
### Circuit diagram



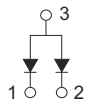
CDBT-54-G



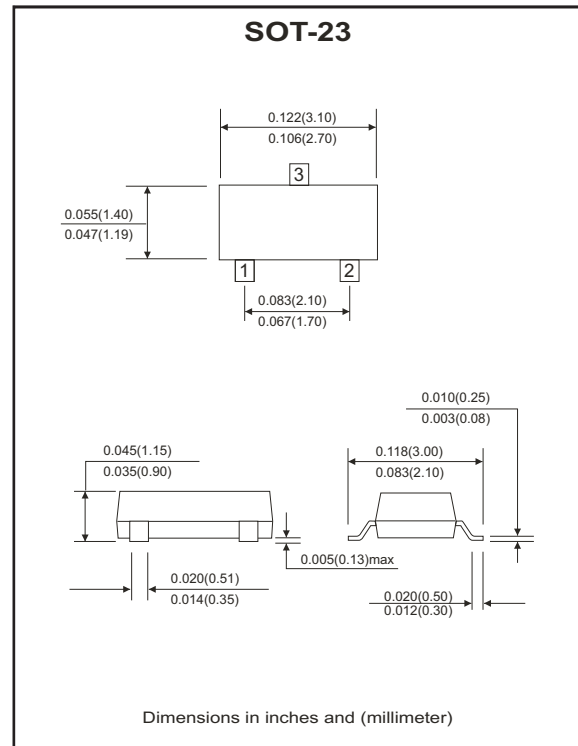
CDBT-54S-G



CDBT-54C-G



CDBT-54A-G



### Maximum Ratings and Electrical Characteristics

(at Ta=25°C unless otherwise noted)

| Parameter                       | Symbol    | Conditions                                                                                                                      | Value                                | Units         |
|---------------------------------|-----------|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|---------------|
| Repetitive peak reverse voltage | $V_{RRM}$ |                                                                                                                                 | 30                                   | V             |
| Reverse voltage                 | $V_R$     |                                                                                                                                 | 30                                   | V             |
| Forward current                 | $I_F$     |                                                                                                                                 | 200                                  | mA            |
| Peak surge forward current      | $I_{FSM}$ | $T < 1.0 \text{ sec}$                                                                                                           | 600                                  | mA            |
| Power dissipation               | $P_D$     |                                                                                                                                 | 225                                  | mW            |
| Maximum forward voltage         | $V_F$     | $@I_F = 0.1 \text{ mA}$<br>$@I_F = 1 \text{ mA}$<br>$@I_F = 10 \text{ mA}$<br>$@I_F = 30 \text{ mA}$<br>$@I_F = 100 \text{ mA}$ | 0.24<br>0.32<br>0.40<br>0.50<br>1.00 | V             |
| Maximum reverse current         | $I_R$     | $@V_R = 25 \text{ V}$                                                                                                           | 2                                    | $\mu\text{A}$ |
| Maximum reverse recovery time   | $T_{rr}$  | $I_F = I_R = 10 \text{ mA}, R_L = 100 \Omega$                                                                                   | 5                                    | nS            |
| Maximum diode capacitance       | $C_J$     | $V_R = 1 \text{ V}, f = 1.0 \text{ MHz}$                                                                                        | 10                                   | pF            |
| Maximum junction temperature    | $T_J$     |                                                                                                                                 | 125                                  | °C            |
| Storage temperature             | $T_{STG}$ |                                                                                                                                 | -55 to +125                          | °C            |

## RATING AND CHARACTERISTIC CURVES (CDBT-54/S/C/A-G)

Fig.1- Forward characteristics

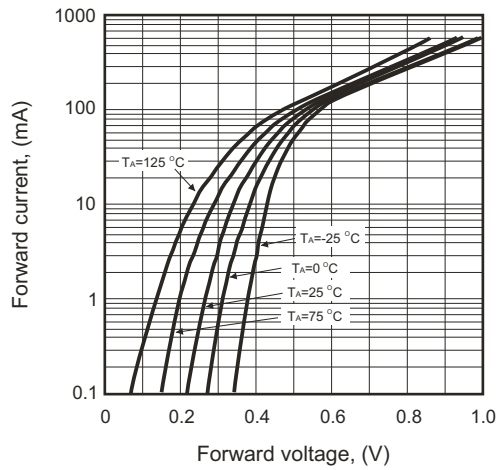


Fig.2- Reverse characteristics

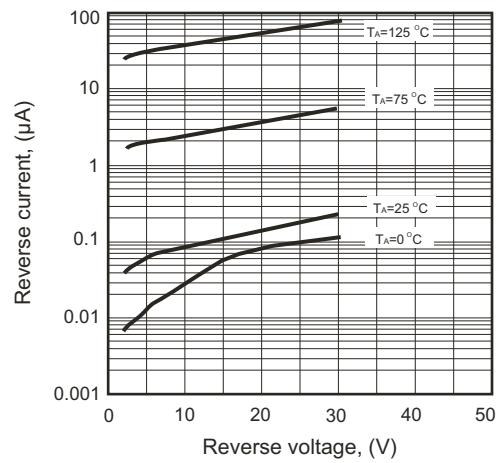


Fig.3- Capacitance between terminals characteristics

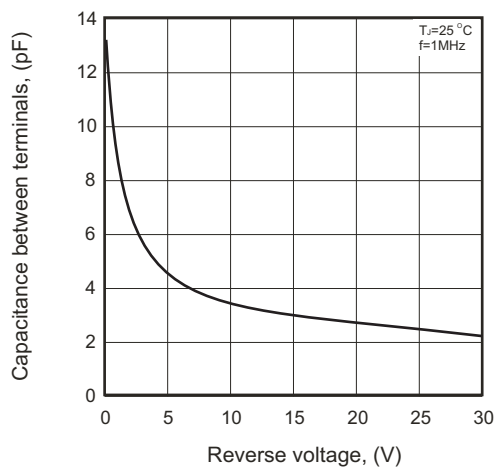
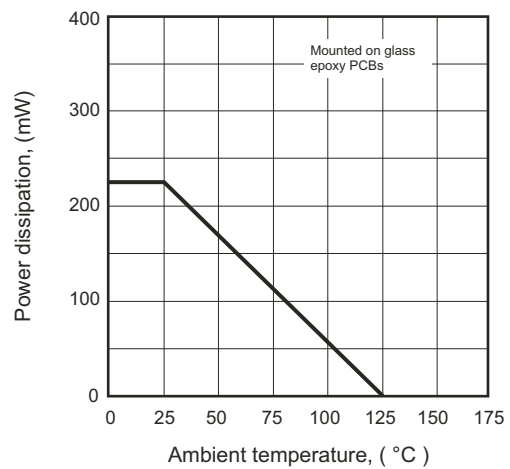
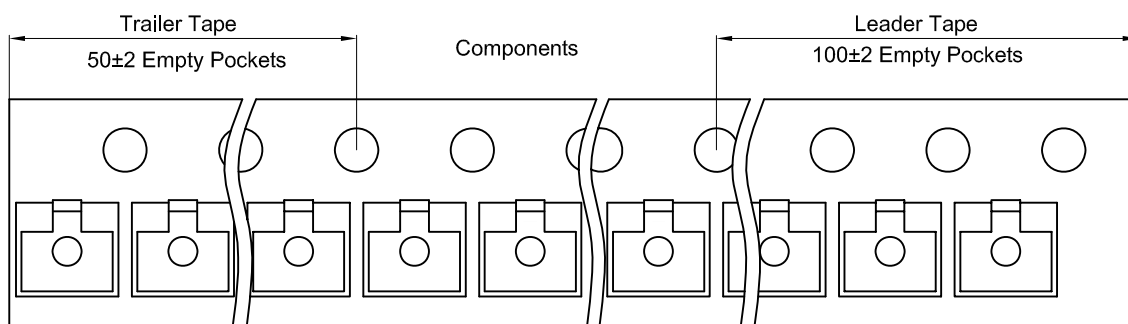
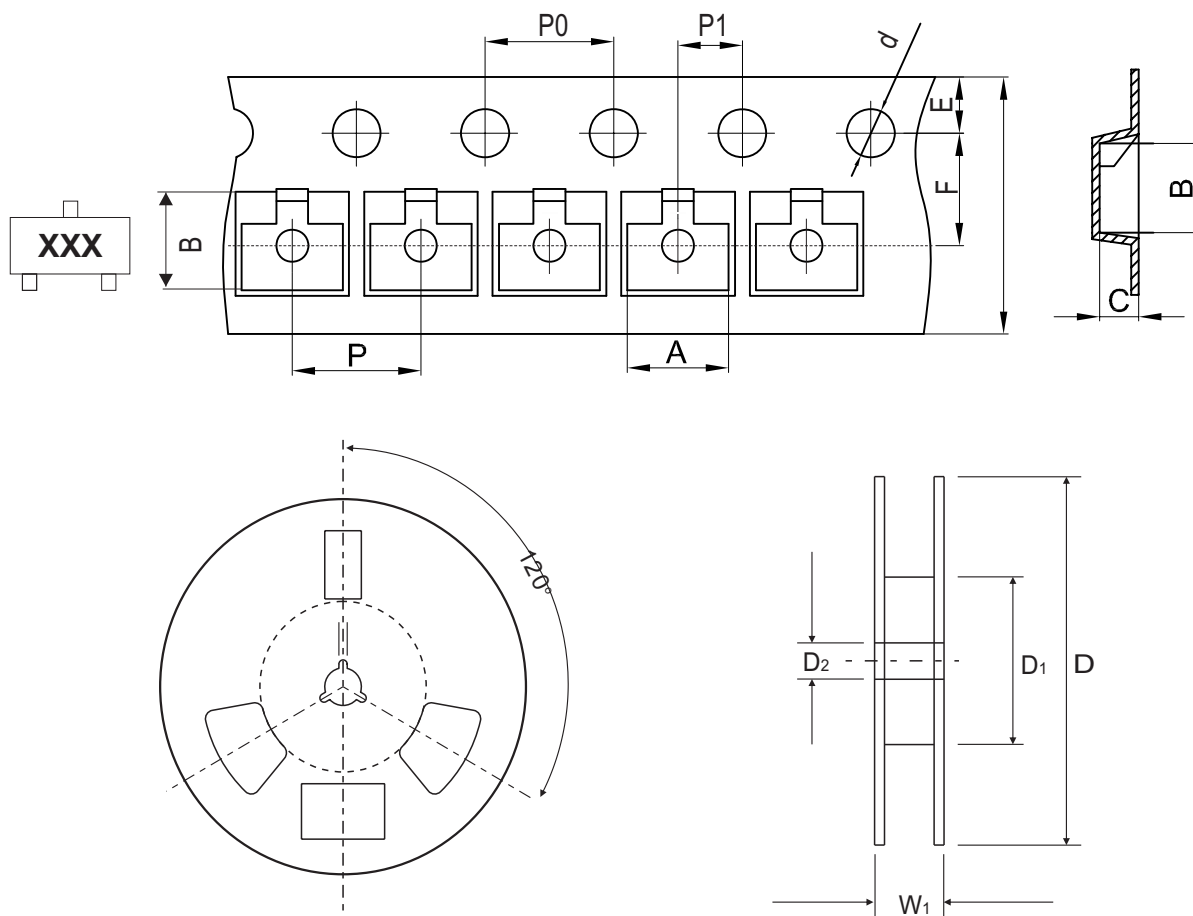


Fig.4- Power derating curve



## Reel Taping Specification

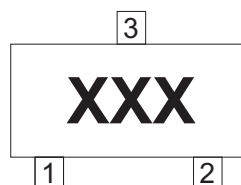


| SOT-23 | SYMBOL | A             | B             | C             | d             | D             | D1            | D2            |
|--------|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|        | (mm)   | 3.15 ± 0.10   | 2.77 ± 0.10   | 1.22 ± 0.10   | 1.50 ± 0.10   | 178 ± 2.00    | 54.40 ± 1.00  | 13.00 ± 1.00  |
|        | (inch) | 0.124 ± 0.004 | 0.109 ± 0.004 | 0.048 ± 0.004 | 0.059 ± 0.004 | 7.008 ± 0.079 | 2.142 ± 0.039 | 0.512 ± 0.039 |

| SOT-23 | 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 ± 1.0   |
|        | (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

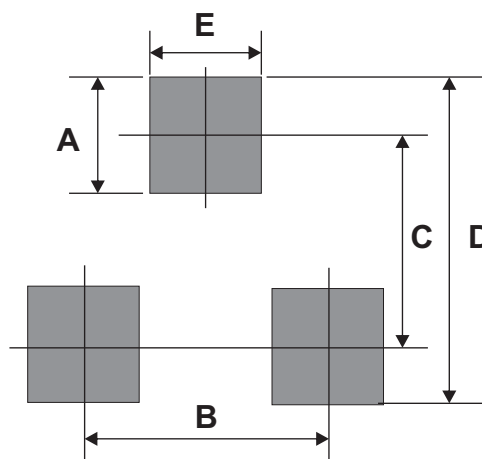
| Part Number | Marking Code |     |
|-------------|--------------|-----|
| CDBT-54-G   | KL1          | JV3 |
| CDBT-54A-G  | KL2          | B6  |
| CDBT-54C-G  | KL3          | 5C  |
| CDBT-54S-G  | KL4          | LD3 |



xx/xxx = Product type marking code

## Suggested PAD Layout

| SIZE | SOT-23 |        |
|------|--------|--------|
|      | (mm)   | (inch) |
| A    | 0.80   | 0.031  |
| B    | 1.90   | 0.075  |
| C    | 2.02   | 0.080  |
| D    | 2.82   | 0.111  |
| E    | 0.80   | 0.031  |



## Standard Packaging

| Case Type | REEL PACK       |                     |
|-----------|-----------------|---------------------|
|           | REEL<br>( pcs ) | Reel Size<br>(inch) |
| SOT-23    | 3,000           | 7                   |