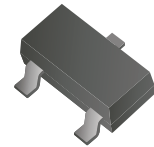


## CDBT-54/S/C/A-G

**Reverse Voltage: 30 Volts**

**Forward Current: 200 mA**

**RoHS Device**



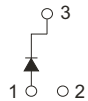
### Features

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

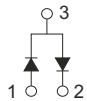
### Mechanical data

- Case: SOT-23, molded plastic.
- Terminals: Solderable per MIL-STD-750, method 2026.
- Weight: 0.0078 grams(approx.).

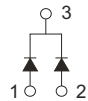
### Circuit diagram



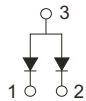
CDBT-54-G



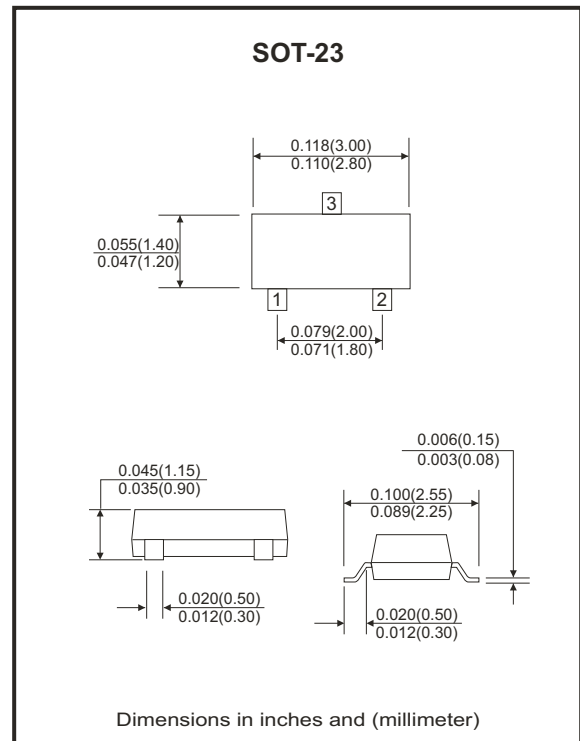
CDBT-54S-G



CDBT-54C-G



CDBT-54A-G



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

| Parameter                                 | Symbol          | Conditions          | Value       | Unit |
|-------------------------------------------|-----------------|---------------------|-------------|------|
| Peak repetitive peak reverse voltage      | $V_{RRM}$       |                     | 30          | V    |
| Working peak reverse voltage              | $V_{RWM}$       |                     | 30          | V    |
| DC blocking voltage                       | $V_R$           |                     | 30          | V    |
| Forward continuous current                | $I_F$           |                     | 200         | mA   |
| Non-repetitive peak forward surge current | $I_{FSM}$       | $t=8.3ms$           | 600         | mA   |
| Power dissipation                         | $P_D$           |                     | 200         | mW   |
| Thermal resistance                        | $R_{\theta JA}$ | Junction to ambient | 500         | °C/W |
| Junction temperature range                | $T_J$           |                     | 125         | °C   |
| Storage temperature range                 | $T_{STG}$       |                     | -55 to +150 | °C   |

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

| Parameter             | Symbol     | Conditions                                                                                                            | Min. | Typ. | Max.                                 | Unit          |
|-----------------------|------------|-----------------------------------------------------------------------------------------------------------------------|------|------|--------------------------------------|---------------|
| Reverse voltage       | $V_{(BR)}$ | $I_R = 100\mu\text{A}$                                                                                                | 30   |      |                                      | V             |
| 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             |
| Reverse current       | $I_R$      | $@V_R = 25\text{V}$                                                                                                   |      |      | 2                                    | $\mu\text{A}$ |
| Diode capacitance     | $C_J$      | $V_R = 1\text{V}, f = 1.0\text{MHz}$                                                                                  |      |      | 10                                   | pF            |
| Reverse recovery time | $T_{rr}$   | $I_F = I_R = 10\text{mA},$<br>$I_{RR} = 0.1I_R, R_L = 100\Omega$                                                      |      |      | 5                                    | nS            |

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

Fig.1 - Forward Characteristics

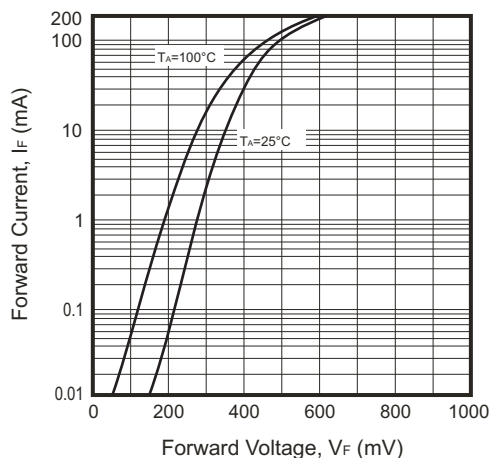


Fig.2 - Reverse Characteristics

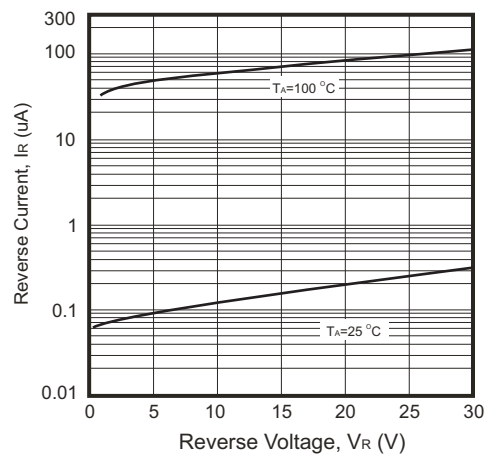


Fig.3 - Capacitance Characteristics

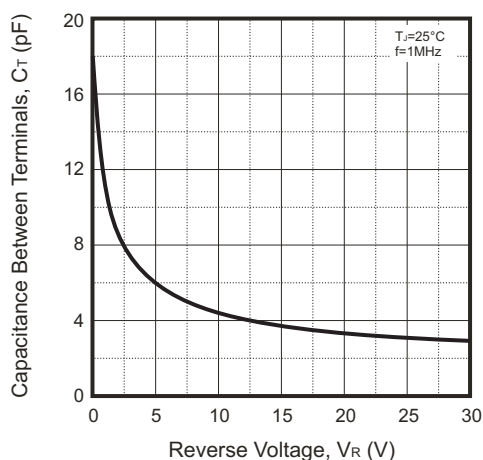
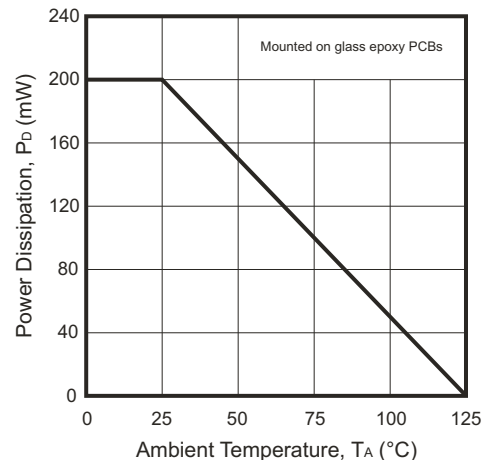
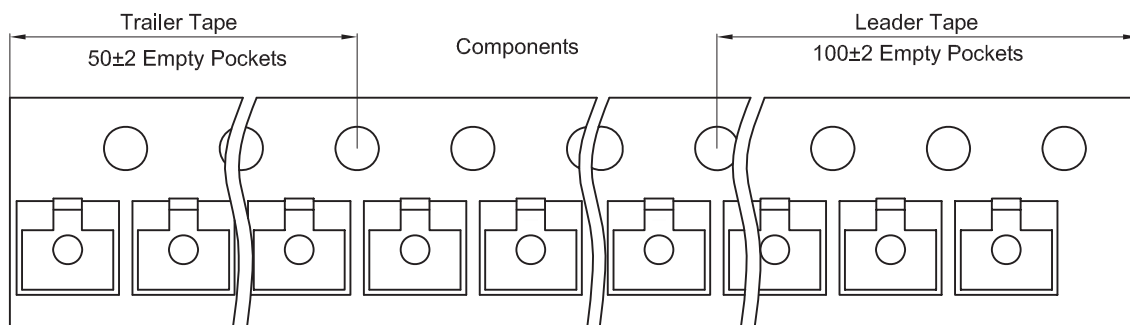
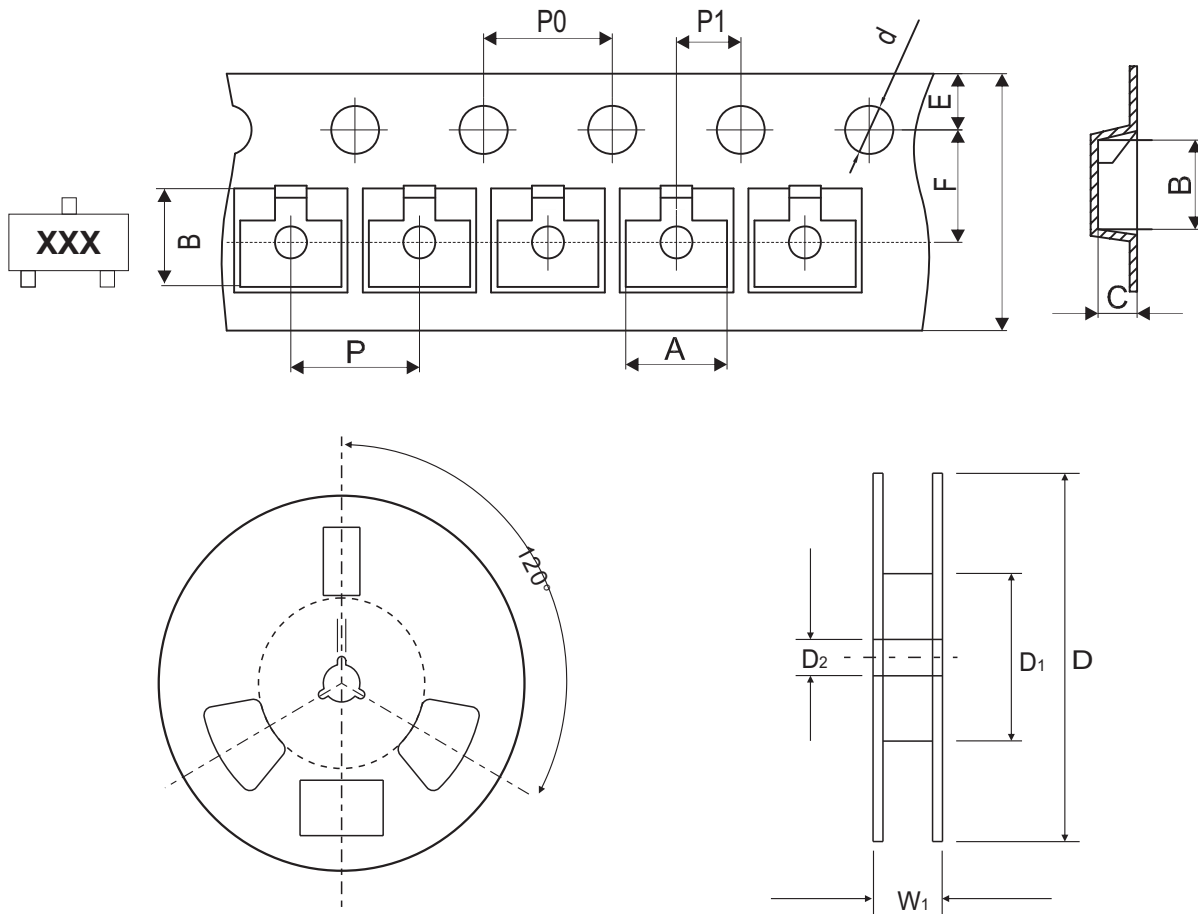


Fig.4 - Power Derating Curve



## Reel Taping Specification

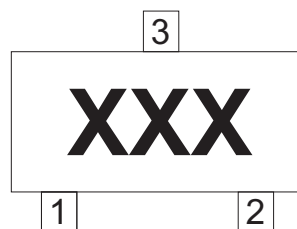


| SOT-23 | SYMBOL | A                 | B                 | C                 | d                 | D                 | D1                | D2                |
|--------|--------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|        | (mm)   | $3.15 \pm 0.10$   | $2.77 \pm 0.10$   | $1.22 \pm 0.10$   | $1.50 \pm 0.10$   | $178.00 \pm 2.00$ | $54.40 \pm 1.00$  | $13.00 \pm 1.00$  |
|        | (inch) | $0.124 \pm 0.004$ | $0.109 \pm 0.004$ | $0.048 \pm 0.004$ | $0.059 \pm 0.004$ | $7.008 \pm 0.079$ | $2.142 \pm 0.039$ | $0.512 \pm 0.039$ |

| SOT-23 | SYMBOL | E                 | F                 | P                 | P0                | P1                | W                         | W1                |
|--------|--------|-------------------|-------------------|-------------------|-------------------|-------------------|---------------------------|-------------------|
|        | (mm)   | $1.75 \pm 0.10$   | $3.50 \pm 0.10$   | $4.00 \pm 0.10$   | $4.00 \pm 0.10$   | $2.00 \pm 0.10$   | $8.00 + 0.30 / - 0.10$    | $12.30 \pm 1.00$  |
|        | (inch) | $0.069 \pm 0.004$ | $0.138 \pm 0.004$ | $0.157 \pm 0.004$ | $0.157 \pm 0.004$ | $0.079 \pm 0.004$ | $0.315 + 0.012 / - 0.004$ | $0.484 \pm 0.039$ |

## Marking Code

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

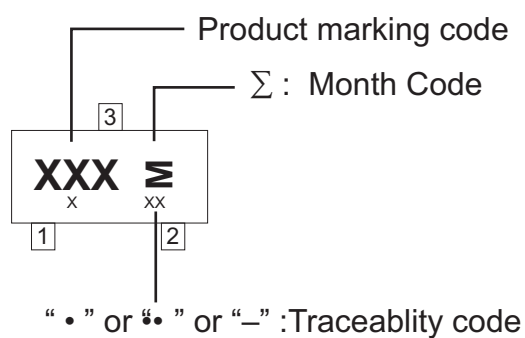


**XX = Product type marking code**

## Month Code:

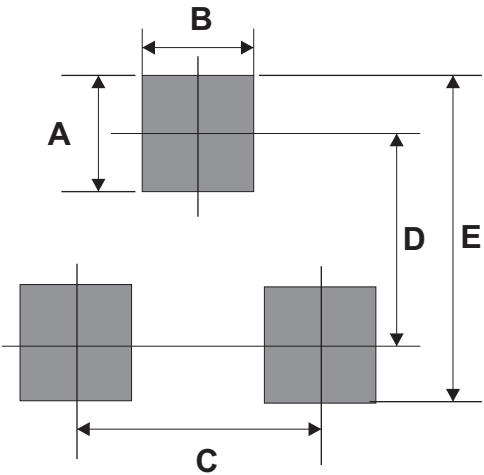
| Month | Odd Year<br>(per A.D.) | Even Year<br>(per A.D.) |
|-------|------------------------|-------------------------|
| Jan   | 1                      | E                       |
| Feb   | 2                      | F                       |
| Wer   | 3                      | H                       |
| Apr   | 4                      | J                       |
| May   | 5                      | K                       |
| Jun   | 6                      | L                       |

| Month | Odd Year<br>(per A.D.) | Even Year<br>(per A.D.) |
|-------|------------------------|-------------------------|
| Jul   | 7                      | N                       |
| Aug   | 8                      | P                       |
| Sep   | 9                      | U                       |
| Oct   | T                      | X                       |
| Nov   | V                      | Y                       |
| Dec   | C                      | Z                       |



## Suggested PAD Layout

| SIZE | SOT-23 |        |
|------|--------|--------|
|      | (mm)   | (inch) |
| A    | 0.80   | 0.031  |
| B    | 0.60   | 0.024  |
| C    | 1.90   | 0.075  |
| D    | 2.02   | 0.080  |
| E    | 2.82   | 0.111  |



## Standard Packaging

| Case Type | Qty Per Reel | Reel Size |
|-----------|--------------|-----------|
|           | (Pcs)        | (inch)    |
| SOT-23    | 3,000        | 7         |

# Mouser Electronics

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