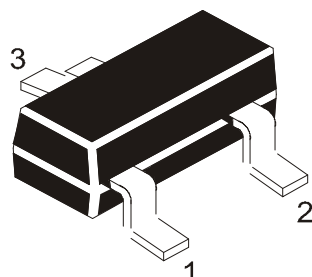


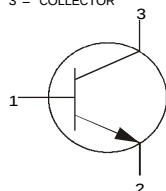
## NPN SILICON PLANAR EPITAXIAL TRANSISTOR

**CMBT8050**



### PIN CONFIGURATION (NPN)

1 = BASE  
2 = EMITTER  
3 = COLLECTOR



**SOT-23**

**Formed SMD Package**

## ABSOLUTE MAXIMUM RATINGS

| DESCRIPTION                                      | SYMBOL         | VALUE        | UNITS            |
|--------------------------------------------------|----------------|--------------|------------------|
| Collector Base Voltage                           | $V_{CBO}$      | 30           | V                |
| Collector Emitter Voltage                        | $V_{CEO}$      | 25           | V                |
| Emitter Base Voltage                             | $V_{EBO}$      | 6            | V                |
| Collector Current Continuous                     | $I_C$          | 800          | mA               |
| Collector Dissipation @ $T_a=25^\circ\text{C}$   | $P_C$          | 250          | mW               |
| Operating And Storage Junction Temperature Range | $T_j, T_{stg}$ | - 55 to +125 | $^\circ\text{C}$ |

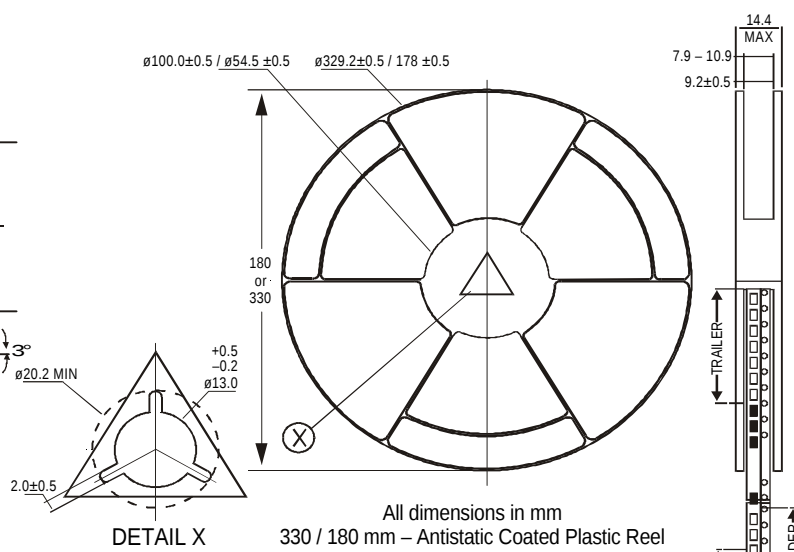
## ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ unless specified otherwise)

| DESCRIPTION                          | SYMBOL        | TEST CONDITION                                                               | MIN       | TYP | MAX | UNITS |
|--------------------------------------|---------------|------------------------------------------------------------------------------|-----------|-----|-----|-------|
| Collector Base Voltage               | $V_{CBO}$     | $I_C=100\mu\text{A}, I_E=0$                                                  | 30        |     |     | V     |
| Collector Emitter Voltage            | $V_{CEO}$     | $I_C=10\text{mA}, I_B=0$                                                     | 25        |     |     | V     |
| Emitter Base Voltage                 | $V_{EBO}$     | $I_E=10\mu\text{A}, I_C=0$                                                   | 6         |     |     | V     |
| Collector Cut Off Current            | $I_{CBO}$     | $V_{CB}=15\text{V}, I_E=0$                                                   |           |     | 50  | nA    |
| Emitter Cut Off Current              | $I_{EBO}$     | $V_{EB}=4\text{V}, I_C=0$                                                    |           |     | 500 | nA    |
| DC Current Gain                      | $h_{FE}$      | $*I_C=50\text{mA}, V_{CE}=1\text{V}$<br>$I_C=350\text{mA}, V_{CE}=1\text{V}$ | 100<br>60 |     | 400 |       |
| Collector Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=500\text{mA}, I_B=50\text{mA}$                                          |           |     | 0.5 | V     |
| Base Emitter Saturation Voltage      | $V_{BE(sat)}$ | $I_C=500\text{mA}, I_B=50\text{mA}$                                          |           |     | 1.2 | V     |
| Transition Frequency                 | $f_T$         | $I_C=100\text{mA}, V_{CE}=10\text{V}, f=100\text{MHz}$                       | 150       |     |     | MHz   |
| Output Capacitance                   | $C_{ob}$      | $V_{CB}=10\text{V}, f=1\text{MHz}$                                           |           |     | 20  | pF    |

| CLASSIFICATIONS | CMBT8050  | C         | D         | E         |
|-----------------|-----------|-----------|-----------|-----------|
| $*h_{FE}$       | 100 - 400 | 100 - 200 | 150 - 300 | 280 - 400 |
| MARKING         | 05        | 05C       | 05D       | 05E       |

### SOT-23 Package Reel Information

#### Reel Specifications for W Packing (13") and 7"



|    | No. of Devices                                                                                                                                                                                                                                                       | 10,000 Pcs | 3,000 Pcs |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|
| 1. | The bandolier of 330 mm reel contains at least 10,000 devices.                                                                                                                                                                                                       |            |           |
| 2. | The bandolier of 180 mm reel contains at least 3,000 devices.                                                                                                                                                                                                        |            |           |
| 3. | No more than 0.5% missing devices / reel. 50 empty compartments for 330 mm reel. 15 empty compartments for 180 mm reel.                                                                                                                                              |            |           |
| 4. | Three consecutive empty places might be found provided this gap is followed by 6 consecutive devices.                                                                                                                                                                |            |           |
| 5. | The carrier tape (leader) starts with at least 75 empty positions (equivalent to 330 mm). In order to fix the carrier tape a self adhesive tape of 20 to 50 mm is applied. At the end of the bandolier at least 40 empty positions (equivalent to 160 mm) are there. |            |           |

[illegible]

| PACKAGE    | STANDARD PACK |                | INNER CARTON BOX |      | OUTER CARTON BOX  |       |        |
|------------|---------------|----------------|------------------|------|-------------------|-------|--------|
|            | Details       | Net Weight/Qty | Size             | Qty  | Size              | Qty   | Gr Wt  |
| SOT-23 T&R | 3K/reel       | 136 gm/3K pcs  | 3" x 7.5" x 7.5" | 12 K | 17" x 15" x 13.5" | 192 K | 12 kgs |
|            |               |                | 9" x 9" x 9"     | 51 K | 19" x 19" x 19"   | 408 K | 28 kgs |
|            | 10K/reel      | 415 gm/10K pcs | 13" x 13" x 0.5" | 10 K | 17" x 15" x 13.5" | 300 K | 16 kgs |

### **Disclaimer**

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- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
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- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



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