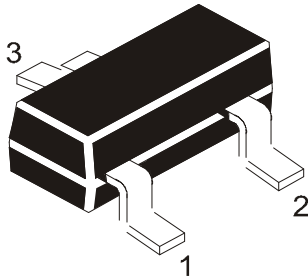


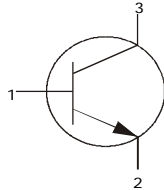
**NPN SILICON PLANAR EPITAXIAL TRANSISTOR**

**CMBT8050**



PIN CONFIGURATION (NPN)

- 1 = BASE
- 2 = EMITTER
- 3 = COLLECTOR



**SOT-23  
Formed SMD Package**

**ABSOLUTE MAXIMUM RATINGS**

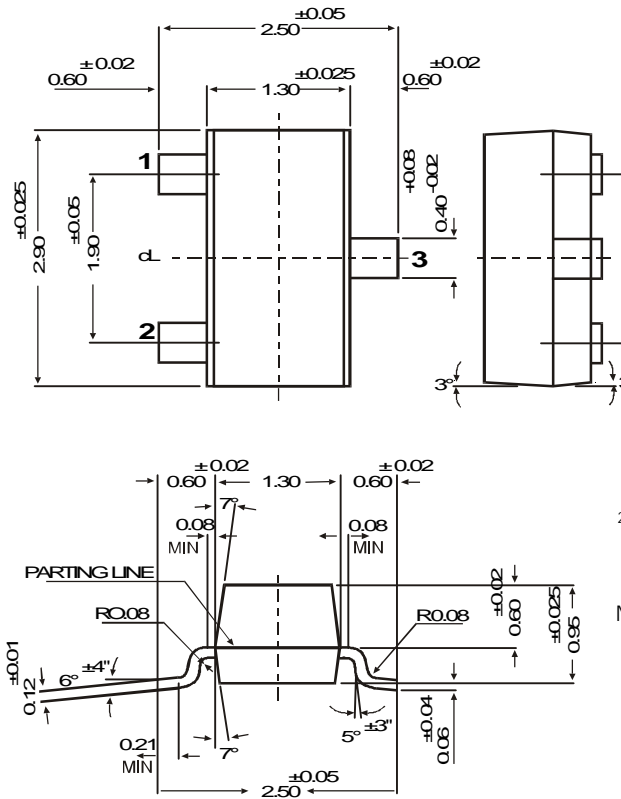
DESCRIPTION	SYMBOL	VALUE	UNITS
Collector Base Voltage	$V_{CBO}$	30	V
Collector Emitter Voltage	$V_{CEO}$	25	V
Emitter Base Voltage	$V_{EBO}$	6	V
Collector Current Continuous	$I_C$	800	mA
Collector Dissipation @ $T_a=25^\circ\text{C}$	$P_C$	250	mW
Operating And Storage Junction Temperature Range	$T_j,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

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

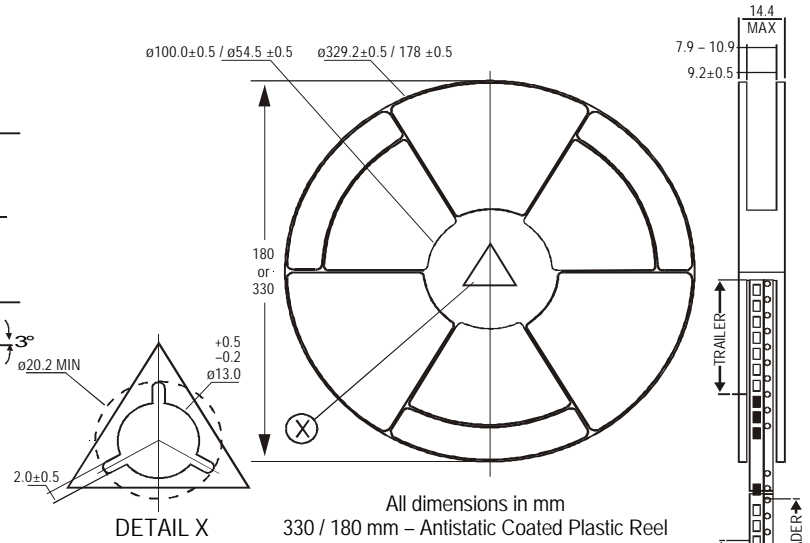
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Collector Base Voltage	$V_{CBO}$	$I_C=100\mu\text{A}, I_E=0$	30			V
Collector Emitter Voltage	$V_{CEO}$	$I_C=10\text{mA}, I_B=0$	25			V
Emitter Base Voltage	$V_{EBO}$	$I_E=10\mu\text{A}, I_C=0$	6			V
Collector Cut Off Current	$I_{CBO}$	$V_{CB}=15\text{V}, I_E=0$			50	nA
Emitter Cut Off Current	$I_{EBO}$	$V_{EB}=4\text{V}, I_C=0$			500	nA
DC Current Gain	$h_{FE}$	* $I_C=50\text{mA}, V_{CE}=1\text{V}$ $I_C=350\text{mA}, V_{CE}=1\text{V}$	100 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 Formed SMD Package**



**SOT-23 Package Reel Information  
Reel Specifications for W Packing (13") and 7"**

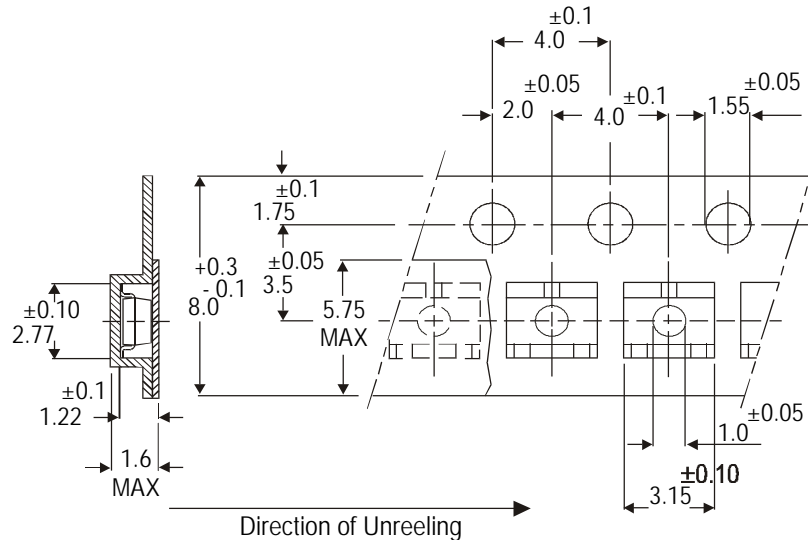


All dimensions in mm  
330 / 180 mm – Antistatic Coated Plastic Reel

**NOTES:**

- |                       |                                  |                                  |
|-----------------------|----------------------------------|----------------------------------|
|                       | <b>8mm Tape<br/>Size of Reel</b> | <b>8mm Tape<br/>Size of Reel</b> |
|                       | 330 mm (13")                     | 180 mm (7")                      |
| <b>No. of Devices</b> | 10,000 Pcs                       | 3,000 Pcs                        |
- The bandolier of 330 mm reel contains at least 10,000 devices.
  - The bandolier of 180 mm reel contains at least 3,000 devices.
  - No more than 0.5% missing devices / reel. 50 empty compartments for 330 mm reel. 15 empty compartments for 180 mm reel.
  - Three consecutive empty places might be found provided this gap is followed by 6 consecutive devices.
  - 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.

**Tape Specification for SOT-23 Surface Mount Device**



All dimensions in mm

**Packing Detail**

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

### **Disclaimer**

The product information and the selection guides facilitate selection of the CDIL's Discrete Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.



CDIL is a registered Trademark of  
Continental Device India Limited

C-120 Naraina Industrial Area, New Delhi 110 028, India.  
Telephone + 91-11-2579 6150, 5141 1112 Fax + 91-11-2579 5290, 5141 1119  
email@cdil.com www.cdilsemi.com