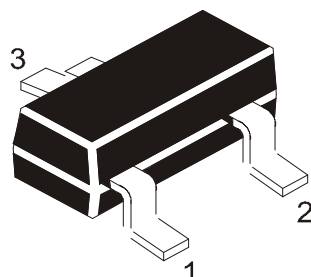


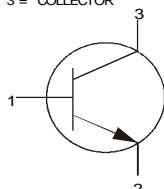
NPN SILICON PLANAR EPITAXIAL TRANSISTOR

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	$^\circ\text{C}$

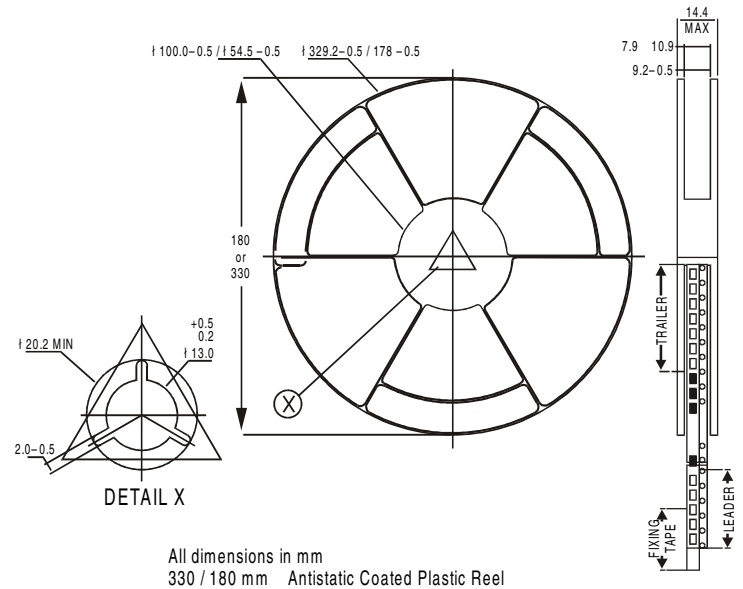
ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless specified otherwise)

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 Package Reel Information

Reel specifications for Packing (13"/7" reels)



- | NOTES: | | 8mm Tape
Size of Reel
330 mm (13")
10,000 Pcs | 8mm Tape
Size of Reel
180 mm (7")
3,000 Pcs |
|----------------|--|--|--|
| No. of Devices | | | |
| 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. | | |

Technical drawing of a metal strip with a cross-section and a plan view. The cross-section on the left shows a U-shaped profile with dimensions: top flange width 1.6 MAX, bottom flange width 1.22, total height 2.77, and wall thickness 0.10. The plan view on the right shows a series of three circular holes with a diameter of 4.0 mm and a center-to-center distance of 2.0 mm. The strip has a width of 8.0 mm and a thickness of 1.75 mm. The drawing includes various tolerances and a 'Direction of Unreeling' arrow.

Dimensions and Tolerances:

- Top flange width: 1.6 MAX
- Bottom flange width: 1.22
- Total height: 2.77
- Wall thickness: 0.10
- Strip width: 8.0
- Strip thickness: 1.75
- Hole diameter: 4.0
- Center-to-center distance: 2.0
- Distance from edge to first hole: 4.0
- Distance between holes: 4.0
- Distance from last hole to edge: 1.55
- Distance from edge to first hole: 2.0
- Distance between holes: 4.0
- Distance from last hole to edge: 1.55
- Distance from edge to first hole: 2.0
- Distance between holes: 4.0
- Distance from last hole to edge: 1.55

Tolerances:

- Top flange width: ± 0.10
- Bottom flange width: ± 0.1
- Wall thickness: ± 0.1
- Strip width: ± 0.3
- Strip thickness: ± 0.1
- Hole diameter: ± 0.05
- Center-to-center distance: ± 0.1
- Distance from edge to first hole: ± 0.05
- Distance between holes: ± 0.1
- Distance from last hole to edge: ± 0.05

Direction of Unreeling: Indicated by an arrow pointing to the right.

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/reel	136 gm/3K pcs	3" x 7.5" x 7.5"	12.0K	17" x 15" x 13.5"	192.0K	12 kgs
			9" x 9" x 9"	51.0K	19" x 19" x 19"	408.0K	28 kgs
	10K/reel	415 gm/10K pcs	13" x 13" x 0.5"	10.0K	17" x 15" x 13.5"	300.0K	16 kgs

Customer Notes

Component Disposal Instructions

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

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 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).

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