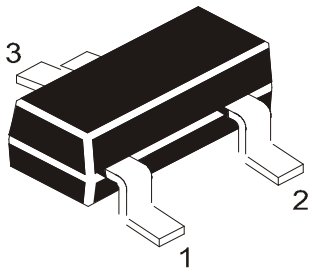
SOT-23 Formed SMD Package **CMBT5087**

SILICON PLANAR EPITAXIAL TRANSISTORS

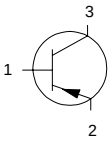
PNP transistor

Marking
CMBT5087= 2Q



Pin configuration

1 = BASE
2 = EMITTER
3 = COLLECTOR



ABSOLUTE MAXIMUM RATINGS

Collector-base voltage (open emitter)	V_{CBO}	*max.*	50	*V*
Collector-emitter voltage (open base)	V_{CEO}	*max.*	50	*V*
Emitter-base voltage (open collector)	V_{EBO}	*max.*	3	*V*
Collector current	I_C	*max.*	50	*mA*
Total power dissipation at T_{amb} = 25°C	P_{tot}*	*max.*	225	*mW*
Junction temperature	T_j	*max.*	150	*° C*
D.C. current gain				
$-I_C$ = 100 µA; V_{CE} = 5 V	h_{FE}	*min.*	250	
		max.	800	
Transition frequency at f = 20 MHz				
I_C = 500 µA; V_{CE} = 5 V	f_T	*min.*	40	*MHz*

***RATINGS** (at T_A = 25°C unless otherwise specified)*

Limiting values				
Collector-base voltage (open emitter)	V_{CBO}	*max.*	50	*V*
Collector-emitter voltage (open base)	V_{CEO}	*max.*	50	*V*

**FR-5 Board = 1.0 × 0.75 × 0.062 in.*

Emitter-base voltage (open collector)	V_{EBO}	*max.*	*3 V*
Collector current (d.c.)	I_C	*max.*	*50 mA*
Total power dissipation at T_{amb} = 25°C	P_{tot}*	*max.*	*225 mW*
Storage temperature	T_{stg}	*-55 to +150*	*° C*
Junction temperature	T_j	*max.*	*150 ° C*

THERMAL RESISTANCE

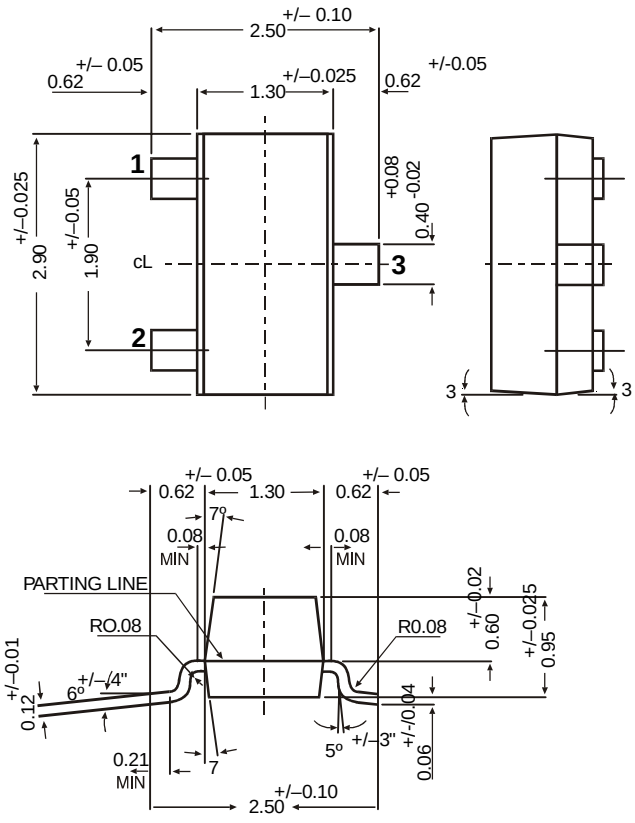
From junction to ambient	$R_{th\ j-a}$		*417 °/ W*

CHARACTERISTICS *(at T_A = 25°C unless otherwise specified)*

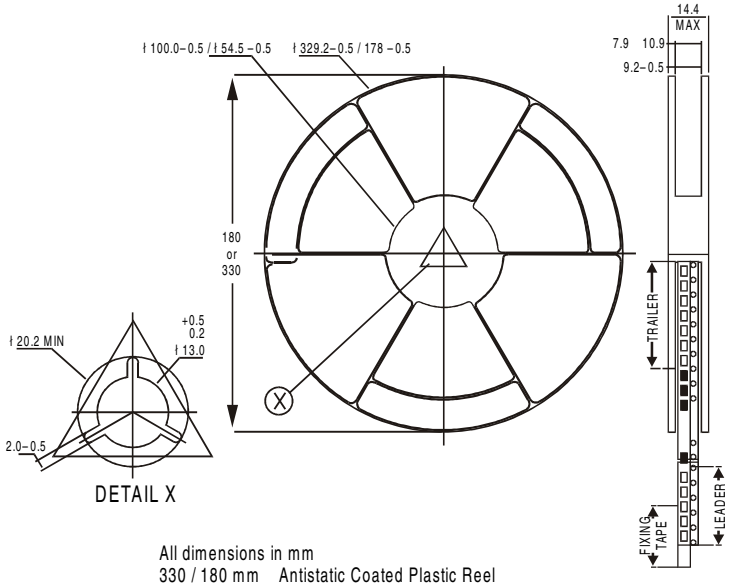
Collector cut-off current			
I_E = 0; V_{CB} = 10 V	I_{CBO}	*max.*	*10 nA*
I_E = 0; V_{CB} = 35 V		*max.*	*50 nA*
Breakdown voltages			
I_C = 1 mA; I_B = 0	V_{CEO}	*min.*	*50 V*
I_C = 100 µA; I_E = 0	V_{CBO}	*min.*	*50 V*
Saturation voltage			
I_C = 10 mA; I_B = 1.0 mA	V_{CEsat}	*max.*	*300 mV*
I_C = 10 mA; I_B = 1.0 mA	V_{BEsat}	*max.*	*0.85 V*
D.C. current gain			
I_C = 100 µA; V_{CE} = 5 V	h_{FE}	*min.*	*250*
		max.	*800*
I_C = 1 mA; V_{CE} = 5 V		*min.*	*250*
I_C = 10 mA; V_{CE} = 5 V		*min.*	*250*
Collector capacitance at f = 100 KHz			
I_E = 0; V_{CB} = 5 V	C_{ob}	*max.*	*4.0 pF*
Transition frequency at f = 20 MHz			
I_C = 500 µA; V_{CE} = 5 V	f_T	*min.*	*40 MHz*
Small signal current			
IC = 1 mA; VCE = 5 V; f = 1 KHz	h_{fe}	*min.*	*250*
		max.	*900*
Noise figure			
I_C = 20 µA; V_{CE} = 5 V; R_S = 10 kΩ	N_F	*max.*	*2.0 dB*
f = 10 Hz to 15.7 KHz			
I_C = 100 µA; V_{CE} = 5 V; R_S = 3.0 kΩ, f = 1.0 KHz	N_F	*max.*	*2.0 dB*

**FR-5 Board = 1.0 × 0.75 × 0.62 in.*

SOT-23 Formed SMD Package



SOT-23 Package Reel Information
Reel specifications for Packing (13"/7" reels)

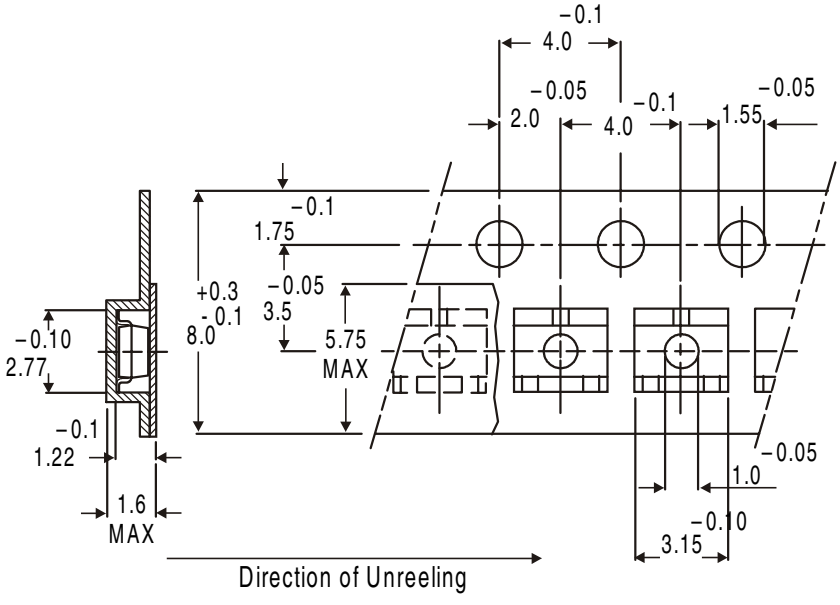


All dimensions in mm
330 / 180 mm Antistatic Coated Plastic Reel

NOTES:	8mm Tape Size of Reel 330 mm (13")	8mm Tape Size of Reel 180 mm (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.

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/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

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