SOT-23 Formed SMD Package **CMBT5087**

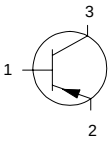
SILICON PLANAR EPITAXIAL TRANSISTORS

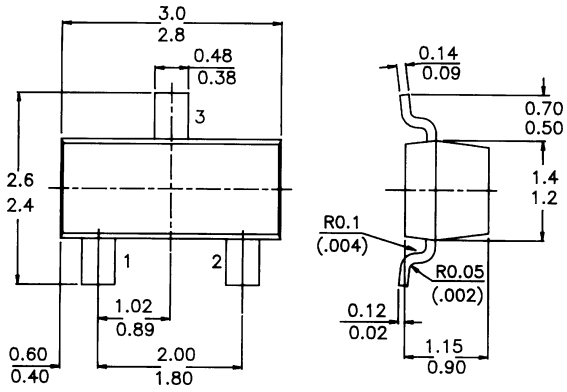
PNP transistor

PACKAGE OUTLINE DETAILS
ALL DIMENSIONS IN mm

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.*

Customer Notes

Disclaimer

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