

SOT-23 Formed SMD Package

CMBT5087

SILICON PLANAR EPITAXIAL TRANSISTORS

PNP transistor

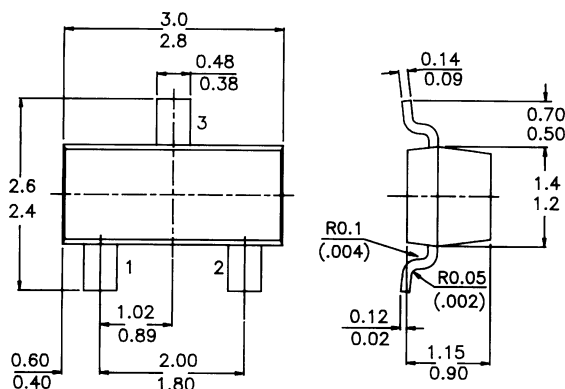
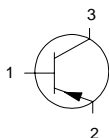
PACKAGE OUTLINE DETAILS
ALL DIMENSIONS IN mm

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 $T_{amb} = 25^\circ\text{C}$	P_{tot}^*	max.	225 mW
Junction temperature	T_j	max.	150 °C
D.C. current gain	h_{FE}	min.	250
		max.	800
Transition frequency at $f = 20$ MHz	f_T	min.	40 MHz
$I_C = 500 \mu\text{A}; V_{CE} = 5$ V			

RATINGS (at $T_A = 25^\circ\text{C}$ 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 = $1.0 \times 0.75 \times 0.062$ in.

CMBT5087

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

THERMAL RESISTANCE

From junction to ambient	$R_{th\ j-a}$	417	$^\circ/W$
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CHARACTERISTICS (at $T_A = 25^\circ C$ 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
$I_C = 100\ \mu A; I_E = 0$	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

$I_C = 100\ \mu A; V_{CE} = 5\ V$	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
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Transition frequency at $f = 20\ MHz$

$I_C = 500\ \mu A; V_{CE} = 5\ V$	f_T	min.	40 MHz
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Small signal current

$I_C = 1\ mA; V_{CE} = 5\ V; f = 1\ KHz$	h_{fe}	min.	250
		max.	900

Noise figure

$I_C = 20\ \mu A; V_{CE} = 5\ V; R_S = 10\ k\Omega$	N_F	max.	2.0 dB
$f = 10\ Hz\ to\ 15.7\ KHz$			
$I_C = 100\ \mu A; V_{CE} = 5\ V; R_S = 3.0\ k\Omega\ f = 1.0\ KHz$	N_F	max.	2.0 dB

*FR-5 Board = $1.0 \times 0.75 \times 0.62\ in.$

Disclaimer

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