

SOT-23 Formed SMD Package

CMBT4126

GENERAL PURPOSE TRANSISTOR

P-N-P transistor

Marking

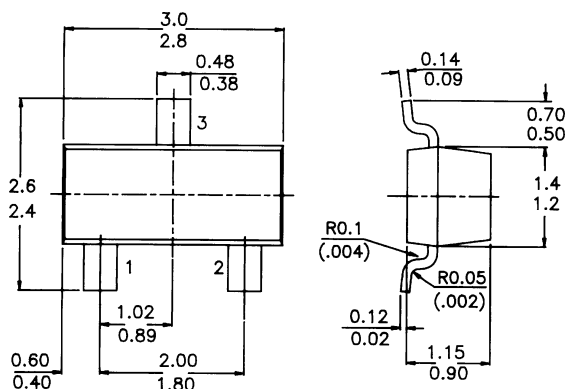
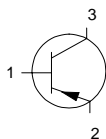
CMBT4126 = 5E

PACKAGE OUTLINE DETAILS

ALL DIMENSIONS IN mm

Pin configuration

1 = BASE
2 = EMITTER
3 = COLLECTOR



ABSOLUTE MAXIMUM RATINGS

Collector-base voltage (open emitter)	$-V_{CBO}$	max.	25 V
Collector-emitter voltage (open base)	$-V_{CEO}$	max.	25 V
Emitter-base voltage (open collector)	$-V_{EBO}$	max.	4 V
Collector current (d.c.)	$-I_C$	max.	200 mA
Total power dissipation at $T_{amb} = 25^\circ\text{C}$	P_{tot}	max	350 mW
D.C. current gain	h_{FE}	min.	120
$-I_C = 2 \text{ mA}; -V_{CE} = 1 \text{ V}$		max.	360

RATINGS (at $T_A = 25^\circ\text{C}$ unless otherwise specified)

Limiting values

Collector-base voltage (open emitter)	$-V_{CBO}$	max.	25 V
Collector-emitter voltage (open base)	$-V_{CEO}$	max.	25 V
Emitter-base voltage (open collector)	$-V_{EBO}$	max.	4 V
Collector current (d.c.)	$-I_C$	max.	200 mA

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Total power dissipation at $T_{amb} = 25^{\circ}\text{C}$	P_{tot}	max	350	mW
Storage temperature	T_{stg}	-55 to +150		$^{\circ}\text{C}$
Junction temperature	T_j	max.	150	$^{\circ}\text{C}$

THERMAL CHARACTERISTICS

$$T_j = P (R_{th\ j-t} + R_{th\ s-a}) + T_{amb}$$

Thermal resistance

from junction to ambient	$R_{th\ j-a}$	556	$^{\circ}\text{C/mW}$
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CHARACTERISTICS (at $T_A = 25^{\circ}\text{C}$ unless otherwise specified)

Collector-emitter breakdown voltage

$-I_C = 1\text{ mA}; I_B = 0$	$-V_{(BR)CEO\ min.}$	25	V
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Collector-base breakdown voltage

$-I_C = 10\ \mu\text{A}; I_E = 0$	$-V_{(BR)CBO\ min.}$	25	V
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Emitter-base breakdown voltage

$-I_E = 10\ \mu\text{A}; I_C = 0$	$-V_{(BR)EBO\ min.}$	4	V
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Collector cut-off current

$-V_{CB} = 20\text{ V}; I_E = 0\text{ V}$	$-I_{CBO}$	max.	50	nA
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Emitter cut-off current

$V_{BE} = 3\text{ V}; I_C = 0$	I_{EBO}	max.	50	nA
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Output capacitance at $f = 1\text{ MHz}$

$I_E = 0; -V_{CB} = 5\text{ V}$	C_c	max.	4.5	pF
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Input capacitance at $f = 1\text{ MHz}$

$I_C = 0; -V_{BE} = 0.5\text{ V}$	C_e	max.	10	pF
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Saturation voltages

$-I_C = 50\text{ mA}; -I_B = 5\text{ mA}$	$-V_{CEsat}$	max.	0.4	V
	$-V_{BEsat}$	max.	0.95	V

D.C. current gain

$-I_C = 2\text{ mA}; -V_{CE} = 1\text{ V}$	h_{FE}	min.	120
		max.	360

$-I_C = 50\text{ mA}; -V_{CE} = 1\text{ V}$

h_{FE}	min.	60
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Noise figure at $R_S = 1\text{ k}\Omega$

$-I_C = 100\ \mu\text{A}; -V_{CE} = 5\text{ V}$	NF	max.	4	dB
$f = 10\text{ Hz to } 15.7\text{ kHz}$				

Small signal current gain

$-V_{CE} = 1\text{ V}; -I_C = 2\text{ mA}; f = 1\text{ KHz}$	h_{fe}	min.	120
		max.	480

Transition frequency

$-V_{CE} = 20\text{ V}; -I_C = 10\text{ mA}; f = 100\text{ MHz}$	f_T	min.	250	MHz
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