

SOT-23 Formed SMD Package

CMBT4126

GENERAL PURPOSE TRANSISTOR

P-N-P transistor

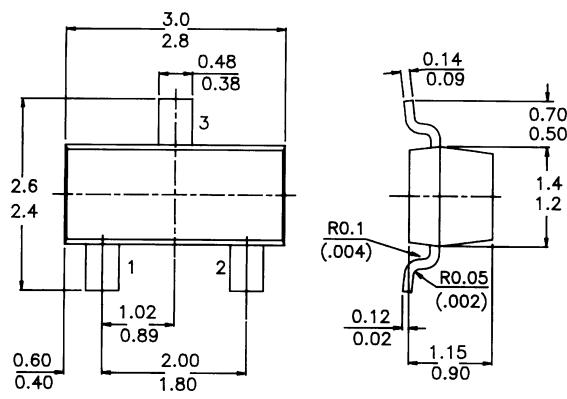
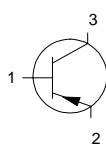
Marking

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 $T_{amb} = 25^\circ C$	P_{tot}	max	350	mW
D.C. current gain $-I_C = 2$ mA; $-V_{CE} = 1$ V	h_{FE}	min.	120	
		max.	360	

RATINGS (at $T_A = 25^\circ C$ 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

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

THERMAL CHARACTERISTICS

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

Thermal resistance

$$\text{from junction to ambient} \quad R_{th\ j-a} \quad 556 \quad ^\circ C/mW$$

CHARACTERISTICS (at $T_A = 25^\circ C$ unless otherwise specified)

Collector-emitter breakdown voltage

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

Collector-base breakdown voltage

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

Emitter-base breakdown voltage

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

Collector cut-off current

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

Emitter cut-off current

$$V_{BE} = 3 \text{ V}; I_C = 0 \quad I_{EBO} \text{ max.} \quad 50 \text{ nA}$$

Output capacitance at $f = 1 \text{ MHz}$

$$I_E = 0; -V_{CB} = 5 \text{ V} \quad C_c \text{ max.} \quad 4.5 \text{ pF}$$

Input capacitance at $f = 1 \text{ MHz}$

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

Saturation voltages

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

$$-V_{BEsat} \text{ max.} \quad 0.95 \quad V$$

D.C. current gain

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

$$h_{FE} \quad \text{max.} \quad 360$$

$$-I_C = 50 \text{ mA}; -V_{CE} = 1 \text{ V} \quad h_{FE} \quad \text{min.} \quad 60$$

Noise figure at $R_S = 1 \text{ k}\Omega$

$$-I_C = 100 \mu A; -V_{CE} = 5 \text{ V} \quad NF \quad \text{max.} \quad 4 \text{ dB}$$

$$f = 10 \text{ Hz to } 15.7 \text{ kHz}$$

Small signal current gain

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

$$h_{fe} \quad \text{max.} \quad 480$$

Transition frequency

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

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