

SOT-23 Formed SMD Package

CMBT5400

HIGH VOLTAGE TRANSISTOR

P-N-P transistor

Marking

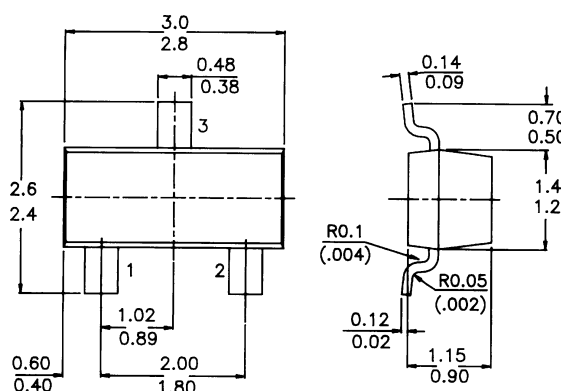
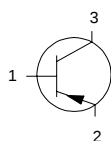
CMBT5400 = K2

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.	130 V
Collector-emitter voltage (open base)	$-V_{CEO}$	max.	120 V
Emitter-base voltage (open collector)	$-V_{EBO}$	max.	5 V
Collector current (d.c.)	$-I_C$	max.	500 mA
Total power dissipation at $T_{amb} = 25^\circ\text{C}$	P_{tot}	max.	250 mW
D.C. current gain	h_{FE}	min.	40
$-I_C = 10 \text{ mA}; -V_{CE} = 5 \text{ V}$		max.	180

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

Limiting values

Collector-base voltage (open emitter)	$-V_{CBO}$	max.	130 V
Collector-emitter voltage (open base)	$-V_{CEO}$	max.	120 V
Emitter-base voltage (open collector)	$-V_{EBO}$	max.	5 V
Collector current (d.c.)	$-I_C$	max.	500 mA

CMBT5400

Total power dissipation at $T_{amb} = 25^{\circ}\text{C}$	P_{tot}	max	250	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	$R_{th\ j-a}$	200	$^{\circ}\text{C/mW}$
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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.	120	V
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Collector-base breakdown voltage

$-I_C = 100\text{ }\mu\text{A}; I_E = 0$	$-V_{(BR)CBO}$	min.	130	V
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Emitter-base breakdown voltage

$-I_E = 10\text{ }\mu\text{A}; I_C = 0$	$-V_{(BR)EBO}$	min.	5	V
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Collector cut-off current

$-V_{CB} = 100\text{ V}; I_E = 0\text{ V}$	$-I_{CBO}$	max.	100	nA
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Emitter cut-off current

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

$I_E = 0; -V_{CB} = 10\text{ V}$	C_c	max.	6	pF
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Saturation voltages

$-I_C = 10\text{ mA}; -I_B = 1\text{ mA}$	$-V_{CEsat}$	max.	0.2	V
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	$-V_{BEsat}$	max.	1	V
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$-I_C = 50\text{ mA}; -I_B = 5\text{ mA}$	$-V_{CEsat}$	max.	0.5	V
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$-I_C = 50\text{ mA}; -I_B = 5\text{ mA}$	$-V_{BEsat}$	max.	1	V
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D.C. current gain

$-I_C = 1\text{ mA}; -V_{CE} = 5\text{ V}$	h_{FE}	min.	50	
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$-I_C = 10\text{ mA}; -V_{CE} = 5\text{ V}$	h_{FE}	min.	40	
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		max.	180	
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$-I_C = 50\text{ mA}; -V_{CE} = 5\text{ V}$	h_{FE}	min.	40	
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Noise figure at $R_S = 1\text{ k}\Omega$

$-I_C = 200\text{ }\mu\text{A}; -V_{CE} = 5\text{ V}$	NF	max.	8	dB
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 $f = 10\text{ Hz to }15.7\text{ kHz}$

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