

SOT-23 Formed SMD Package

CMBT5400

HIGH VOLTAGE TRANSISTOR

P-N-P transistor

Marking

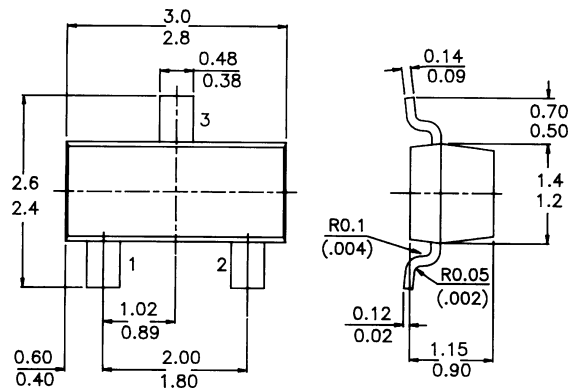
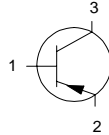
CMBT5400 = K2

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 $T_{amb} = 25^\circ C$	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 $T_A = 25^\circ C$ 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 $T_{amb} = 25^{\circ}C$	P_{tot}	<i>max</i>	250 mW
Storage temperature	T_{stg}		-55 to +150 °C
Junction temperature	T_j	<i>max.</i>	150 °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 °C/mW
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CHARACTERISTICS (at $T_A = 25^{\circ}C$ unless otherwise specified)

Collector-emitter breakdown voltage

- $I_C = 1\ mA$; $I_B = 0$	$-V_{(BR)CEO}$	<i>min.</i>	120 V
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Collector-base breakdown voltage

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

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

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

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

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

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

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

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