

SOT-23 Formed SMD Package

CMBT5550

SILICON N-P-N HIGH-VOLTAGE TRANSISTOR

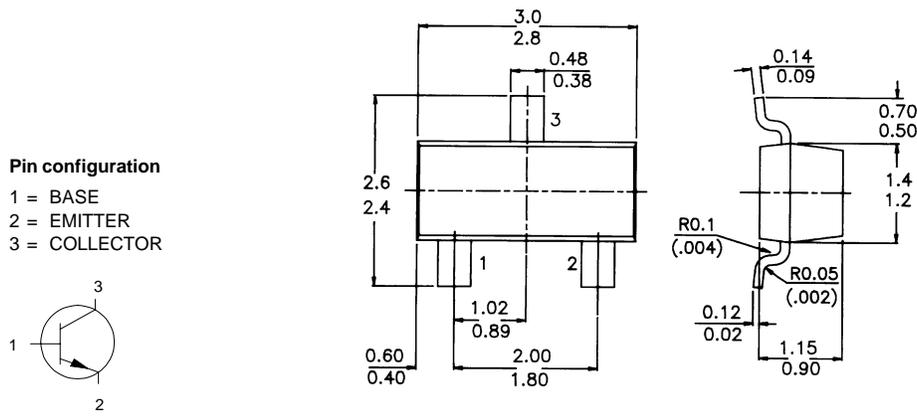
N-P-N transistor

Marking

CMBT5550 = 1F

PACKAGE OUTLINE DETAILS

ALL DIMENSIONS IN mm



ABSOLUTE MAXIMUM RATINGS

Collector-base voltage (open emitter)	V_{CBO}	max.	160 V
Collector-emitter voltage (open base)	V_{CEO}	max.	140 V
Collector current	I_C	max.	600 mA
Total power dissipation up to $T_{amb} = 25^\circ C$	P_{tot}	max.	250 mW
Collector-emitter saturation voltage $I_C = 50 \text{ mA}; I_B = 5 \text{ mA}$	V_{CEsat}	max.	0.25 V
D.C. current gain $I_C = 10 \text{ mA}; V_{CE} = 5 \text{ V}$	h_{FE}		60 to 250

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

Limiting values

Collector-base voltage (open emitter)	V_{CBO}	max.	160 V
Collector-emitter voltage (open base)	V_{CEO}	max.	140 V
Emitter-base voltage (open collector)	V_{EBO}	max.	6 V
Collector current	I_C	max.	600 mA

CMBT5550

Total power dissipation up to $T_{amb} = 25^{\circ}C$	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 RESISTANCE

from junction to ambient	$R_{th\ j-a}$	500 K/W
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CHARACTERISTICS (at $T_A = 25^{\circ}C$ unless otherwise specified)

Collector cut-off current

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

$I_C = 0; V_{EB} = 4.0\ V$	I_{EBO}	<i>max.</i>	50 nA
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Breakdown voltages

$I_C = 1\ mA; I_B = 0$	$V_{(BR)CEO}$	<i>min.</i>	140 V
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$I_C = 10\ \mu A; I_E = 0$	$V_{(BR)CBO}$	<i>min.</i>	160 V
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$I_C = 0; I_E = 10\ \mu A$	$V_{(BR)EBO}$	<i>min.</i>	6 V
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Saturation voltages

$I_C = 10\ mA; I_B = 1\ mA$	V_{CEsat}	<i>max.</i>	0.15 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>	0.25 V
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	V_{BEsat}	<i>max.</i>	1.2 V
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D.C. current gain

$I_C = 1\ mA; V_{CE} = 5\ V$	h_{FE}	<i>min.</i>	60
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$I_C = 10\ mA; V_{CE} = 5\ V$	h_{FE}	<i>min.</i>	60
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		<i>max.</i>	250
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$I_C = 50\ mA; V_{CE} = 5\ V$	h_{FE}	<i>min.</i>	20
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Output capacitance at $f = 1\ MHz$

$I_E = 0; V_{CB} = 10\ V$	C_o	<i>max.</i>	6 pF
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Input capacitance at $f = 1\ MHz$

$I_C = 0; V_{EB} = 10\ V$	C_i	<i>max.</i>	30 pF
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Transition frequency at $f = 100\ MHz$

$I_C = 10\ mA; V_{CE} = 10\ V; T_{amb} = 25\ ^{\circ}C$	f_T	<i>min.</i>	100 MHz
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		<i>max.</i>	300 MHz
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