

SOT-23 Formed SMD Package

CMBT918

VHF/UHF TRANSISTOR

N-P-N transistor

Marking

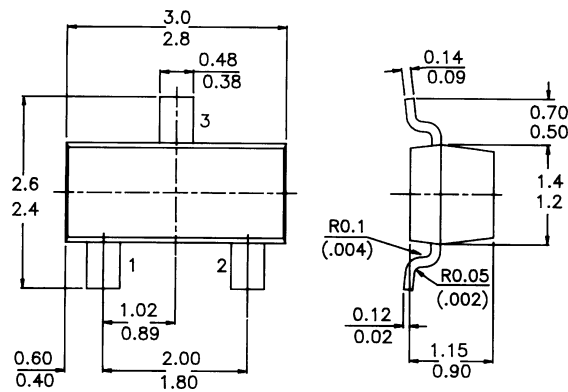
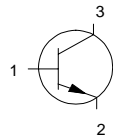
CMBT918 = 3B

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.	30 V
Collector-emitter voltage (open base)	$-V_{CEO}$	max.	15 V
Emitter-base voltage (open collector)	$-V_{EBO}$	max.	3 V
Collector current (d.c.)	$-I_C$	max.	350 mA
Total power dissipation at $T_{amb} = 25^\circ\text{C}$	P_{tot}	max	225 mW
D.C. current gain	h_{FE}	min.	20
$-I_C = 3 \text{ mA}; -V_{CE} = 1 \text{ V}$			

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

Limiting values

Collector-base voltage (open emitter)	$-V_{CBO}$	max.	30 V
Collector-emitter voltage (open base)	$-V_{CEO}$	max.	15 V
Emitter-base voltage (open collector)	$-V_{EBO}$	max.	3 V
Collector current (d.c.)	$-I_C$	max.	350 mA

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Total power dissipation at $T_{amb} = 25^{\circ}C$	P_{tot}	<i>max</i>	225 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	$R_{th\ j-a}$	556 °C/mW
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CHARACTERISTICS (at $T_A = 25^{\circ}C$ unless otherwise specified)

Collector-emitter breakdown voltage

- $I_C = 3\text{ mA}$; - $I_B = 0$	$-V_{(BR)CEO}$	<i>min.</i>	15 V
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Collector-base breakdown voltage

- $I_C = 1\ \mu A$; - $I_E = 0$	$-V_{(BR)CBO}$	<i>min.</i>	30 V
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Emitter-base breakdown voltage

- $I_E = 10\ \mu A$; - $I_C = 0$	$-V_{(BR)EBO}$	<i>min.</i>	3 V
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Collector cut-off current

- $V_{CB} = 15\text{ V}$; - $I_E = 0$	$-I_{CBO}$	<i>max.</i>	50 nA
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Output capacitance at $f = 1\text{ MHz}$

- $V_{CB} = 10\text{ V}$; $I_E = 0$	C_c	<i>max.</i>	1.7 pF
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Input capacitance at $f = 1\text{ MHz}$

- $V_{EB} = 0.5\text{ V}$; $I_C = 0$	C_e	<i>max.</i>	2 pF
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Saturation voltages

- $I_C = 10\text{ mA}$; - $I_B = 1\text{ mA}$	$-V_{CEsat}$	<i>max.</i>	0.4 V
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	$-V_{BEsat}$	<i>max.</i>	1 V
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D.C. current gain

- $I_C = 3\text{ mA}$; - $V_{CE} = 1\text{ V}$	h_{FE}	<i>min.</i>	20
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Noise figure at $R_S = 50\ \Omega$

- $I_C = 1\text{ mA}$; - $V_{CE} = 6\text{ V}$	NF	<i>max.</i>	6 dB
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$f = 60\text{ MHz}$			
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Transition frequency

- $V_{CE} = 10\text{ V}$; $I_C = 4\text{ mA}$; $f = 100\text{ MHz}$	f_T	<i>min.</i>	600 MHz
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