

VHF/UHF TRANSISTOR

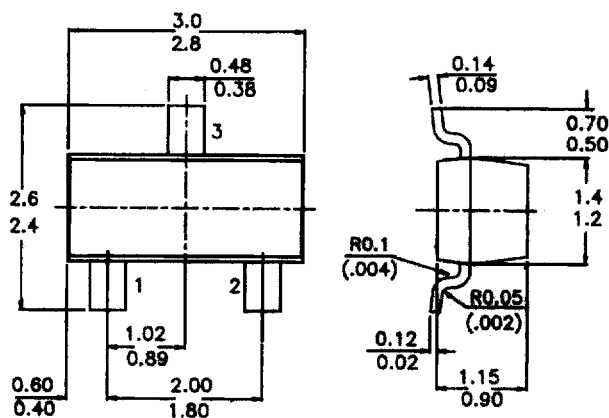
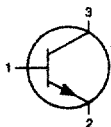
N-P-N transistor

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

Total power dissipation at $T_{amb} = 25^{\circ}\text{C}$	P_{tot}	max	225	mW
Storage temperature	T_{stg}	-55 to +150		$^{\circ}\text{C}$
Junction temperature	T_j	max.	150	$^{\circ}\text{C}$

THERMAL CHARACTERISTICS

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

Thermal resistance

from junction to ambient

$R_{th\ j-a}$	556	$^{\circ}\text{C/mW}$
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CHARACTERISTICS (at $T_A = 25^{\circ}\text{C}$ unless otherwise specified)

Collector-emitter breakdown voltage

$$-I_C = 3\text{ mA}; -I_B = 0$$

$-V_{(BR)CEO}$	min.	15	V
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Collector-base breakdown voltage

$$-I_C = 1\text{ }\mu\text{A}; -I_E = 0$$

$-V_{(BR)CBO}$	min.	30	V
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Emitter-base breakdown voltage

$$-I_E = 10\text{ }\mu\text{A}; -I_C = 0$$

$-V_{(BR)EBO}$	min.	3	V
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Collector cut-off current

$$-V_{CB} = 15\text{ V}; -I_E = 0$$

$-I_{CBO}$	max.	50	nA
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Output capacitance at $f = 1\text{ MHz}$

$$-V_{CB} = 10\text{ V}; I_E = 0$$

C_c	max.	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	max.	2	pF
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Saturation voltages

$$-I_C = 10\text{ mA}; -I_B = 1\text{ mA}$$

$-V_{CEsat}$	max.	0.4	V
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$-V_{BEsat}$	max.	1	V
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D.C. current gain

$$-I_C = 3\text{ mA}; -V_{CE} = 1\text{ V}$$

h_{FE}	min.	20	
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Noise figure at $R_S = 50\text{ }\Omega$

$$-I_C = 1\text{ mA}; -V_{CE} = 6\text{ V}$$

$$f = 60\text{ MHz}$$

NF	max.	6	dB
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Transition frequency

$$V_{CE} = 10\text{ V}; I_C = 4\text{ mA}; f = 100\text{ MHz}$$

f_T	min.	600	MHz
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