

**SOT-23 Formed SMD Package**

**CMBT918**

**VHF/UHF TRANSISTOR**

*N-P-N transistor*

**Marking**

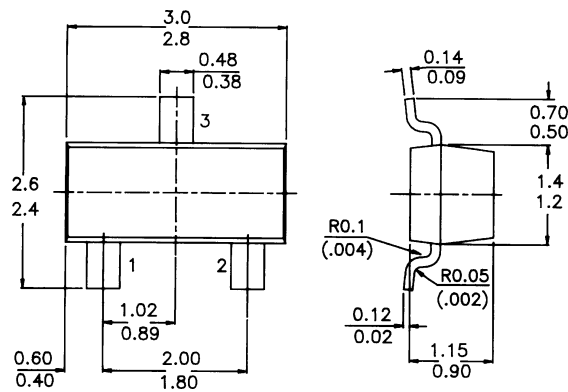
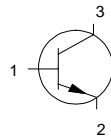
CMBT918 = 3B

**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

## CMBT918

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  $R_S = 50\ \Omega$

- $I_C = 1\text{ mA}$ ; - $V_{CE} = 6\text{ V}$ $f = 60\text{ MHz}$	$NF$	<i>max.</i>	6 dB
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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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**Continental Device India Limited**

C-120 Naraina Industrial Area, New Delhi 110 028, India.  
Telephone + 91-11-2579 6150, 5141 1112 Fax + 91-11-2579 5290, 5141 1119  
email@cdil.com www.cdilsemi.com