

SOT-23 Formed SMD Package

CMBT918

VHF/UHF TRANSISTOR

N-P-N transistor

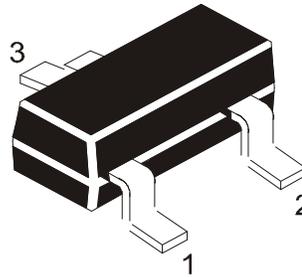
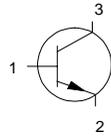
Marking

CMBT918 = 3B

www.datasheet4u.com

Pin configuration

- 1 = BASE
- 2 = EMITTER
- 3 = COLLECTOR



ABSOLUTE MAXIMUM RATINGS

| | | | |
|---|------------|------|--------|
| Collector-base voltage (open emitter) | $-V_{CB0}$ | 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 $T_{amb} = 25^\circ C$ | 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 $T_A = 25^\circ C$ unless otherwise specified)

Limiting values

| | | | |
|---------------------------------------|------------|------|--------|
| Collector-base voltage (open emitter) | $-V_{CB0}$ | 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} | max | 225 | mW |
| Storage temperature | T_{stg} | | -55 to +150 | $^{\circ}C$ |
| Junction temperature | T_j | max. | 150 | $^{\circ}C$ |

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 | $^{\circ}C/mW$ |
|--------------------------|---------------|--|-----|----------------|

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

Collector-emitter breakdown voltage

| | | | | |
|--------------------------|----------------------|--|----|---|
| $-I_C = 3\ mA; -I_B = 0$ | $-V_{(BR)CEO\ min.}$ | | 15 | V |
|--------------------------|----------------------|--|----|---|

Collector-base breakdown voltage

| | | | | |
|-----------------------------|----------------------|--|----|---|
| $-I_C = 1\ \mu A; -I_E = 0$ | $-V_{(BR)CBO\ min.}$ | | 30 | V |
|-----------------------------|----------------------|--|----|---|

Emitter-base breakdown voltage

| | | | | |
|------------------------------|----------------------|--|---|---|
| $-I_E = 10\ \mu A; -I_C = 0$ | $-V_{(BR)EBO\ min.}$ | | 3 | V |
|------------------------------|----------------------|--|---|---|

Collector cut-off current

| | | | | |
|-----------------------------|------------|------|----|----|
| $-V_{CB} = 15\ V; -I_E = 0$ | $-I_{CBO}$ | max. | 50 | nA |
|-----------------------------|------------|------|----|----|

Output capacitance at $f = 1\ MHz$

| | | | | |
|----------------------------|-------|------|-----|----|
| $-V_{CB} = 10\ V; I_E = 0$ | C_c | max. | 1.7 | pF |
|----------------------------|-------|------|-----|----|

Input capacitance at $f = 1\ MHz$

| | | | | |
|-----------------------------|-------|------|---|----|
| $-V_{EB} = 0.5\ V; I_C = 0$ | C_e | max. | 2 | pF |
|-----------------------------|-------|------|---|----|

Saturation voltages

| | | | | |
|-------------------------------|--------------|------|-----|---|
| $-I_C = 10\ mA; -I_B = 1\ mA$ | $-V_{CEsat}$ | max. | 0.4 | V |
|-------------------------------|--------------|------|-----|---|

| | | | | |
|--|--------------|------|---|---|
| | $-V_{BEsat}$ | max. | 1 | V |
|--|--------------|------|---|---|

D.C. current gain

| | | | | |
|--------------------------------|----------|------|----|--|
| $-I_C = 3\ mA; -V_{CE} = 1\ V$ | h_{FE} | min. | 20 | |
|--------------------------------|----------|------|----|--|

Noise figure at $R_S = 50\ \Omega$

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

| | | | | |
|---------------|----|------|---|----|
| $f = 60\ MHz$ | NF | max. | 6 | dB |
|---------------|----|------|---|----|

Transition frequency

| | | | | |
|---|-------|------|-----|-----|
| $V_{CE} = 10\ V; I_C = 4\ mA; f = 100\ MHz$ | f_T | min. | 600 | MHz |
|---|-------|------|-----|-----|

Packing Detail

| PACKAGE | STANDARD PACK | | INNER CARTON BOX | | OUTER CARTON BOX | | |
|------------|---------------|----------------|------------------|-------|-------------------|--------|--------|
| | Details | Net Weight/Qty | Size | Qty | Size | Qty | Gr Wt |
| SOT-23 T&R | 3K/reel | 136 gm/3K pcs | 3" x 7.5" x 7.5" | 12.0K | 17" x 15" x 13.5" | 192.0K | 12 kgs |
| | | | 9" x 9" x 9" | 51.0K | 19" x 19" x 19" | 408.0K | 28 kgs |
| | 10K/reel | 415 gm/10K pcs | 13" x 13" x 0.5" | 10.0K | 17" x 15" x 13.5" | 300.0K | 16 kgs |

Customer Notes

Component Disposal Instructions

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

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