



## **SOT-23 Formed SMD Package**

## **CMBT918**

# VHF/UHF TRANSISTOR

N-P-N transistor

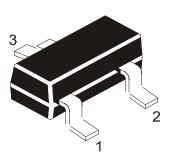
**Marking** CMBT918 = 3B

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- 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.	<i>350</i>	mA
Total power dissipation at $T_{amb} = 25^{\circ}C$	$P_{tot}$	max	225	mW
D.C. current gain				
$-I_C = 3 \text{ mA; } -V_{CF} = 1 \text{ V}$	$h_{FF}$	min.	20	

# **RATINGS** (at $T_A = 25$ °C unless otherwise specified)

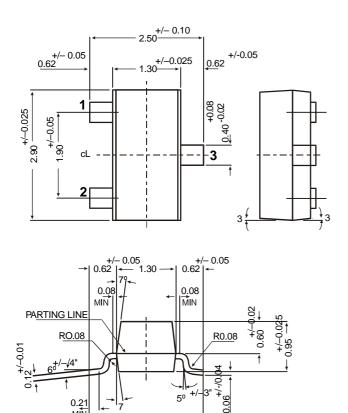
Limiting values

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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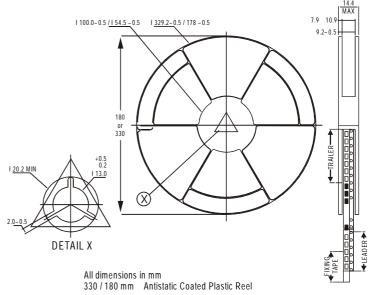
Total power dissipation at $T_{amb} = 25^{\circ}C$ Storage temperature Junction temperature	P <sub>tot</sub> T <sub>stg</sub> Tj	max -55 max.	225 to +150 150	mW ° C ° C
THERMAL CHARACTERISTICS $T_{j} = P (R_{th j-t} + R_{th s-a}) + T_{amb}$ Thermal resistance from junction to ambient	P., .		556	°C/mW
CHARACTERISTICS (at $T_A = 25^{\circ}$ C unless otherwise Collector–emitter breakdown voltage	R <sub>th j-a</sub>		330	Ciniv
$-I_C = 3 \text{ mA}; -I_B = 0$ Collector-base breakdown voltage	-V <sub>(BR)</sub> CEO	min.	15	V
$-I_C = 1 \mu A; -I_E = 0$ Emitter-base breakdown voltage	-V <sub>(BR)</sub> CBO	min.	30	V
$-I_E = 10 \ \mu A; -I_C = 0$ Collector cut-off current	-V <sub>(BR)EBO</sub>	min.	3	V
$-V_{CB} = 15 \ V; -I_{E} = 0$ Output capacitance at $f = 1 \ MHz$	-I <sub>CBO</sub>	max.	50	nA
$-V_{CB} = 10 \text{ V}; I_E = 0$ Input capacitance at $f = 1 \text{ MHz}$	$C_c$	max.	1.7	pF
$-V_{EB} = 0.5 \ V; I_{C}=0$	$C_e$	max.	2	pF
Saturation voltages $-I_C = 10 \text{ mA; } -I_B = 1 \text{ mA}$	-V <sub>CEsat</sub> -V <sub>BEsat</sub>	max. max.	0.4 1	$V \ V$
D.C. current gain $-I_C = 3 \text{ mA; } -V_{CE} = 1 \text{ V}$ Noise figure at $R_S = 50 \Omega$	$h_{FE}$	min.	20	
From the second $A = A + A + A + A + A + A + A + A + A + $	NF	max.	6	dВ
Transition frequency $V_{CE} = 10 \text{ V; } I_C = 4 \text{ mA; } f = 100 \text{ MHz}$	$f_T$	min.	600	MHz

# **SOT-23 Formed SMD Package**



2.50 +/-0.10

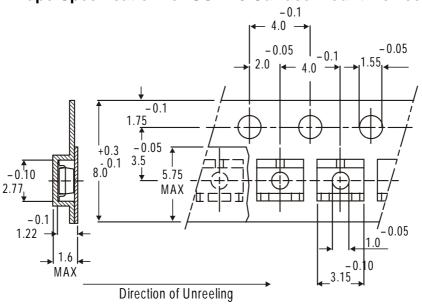
# SOT-23 Package Reel Information Reel specifications for Packing (13"/7" reels)



 NOTES:
 8mm Tape
 8mm Tape
 Size of Reel
 Size of Reel
 Size of Reel
 180 mm (7")
 180 mm (7")
 180 mm (7")
 3,000 Pcs
 3,000 Pcs

- 1. The bandolier of 330 mm reel contains at least 10,000 devices.
- 2. The bandolier of 180 mm reel contains at least 3,000 devices.
- No more than 0.5% missing devices / reel. 50 empty compartments for 330 mm reel. 15 empty compartments for 180 mm reel.
- Three consecutive empty places might be found provided this gap is followed by 6 consecutive devices.
- The carrier tape (leader) starts with at least 75 empty positions (equivalent to 330 mm). In order to fix the carrier tape a self adhesive tape of 20 to 50 mm is applied. At the end of the bandolier at least 40 empty positions (equivalent to 160 mm) are there.

## **Tape Specification for SOT-23 Surface Mount Device**



All dimensions in mm

# Packing Detail

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
S0T-23 T&R	3K/reel	J	3" x 7.5" x 7.5" 9" x 9" x 9"	12.0K 51.0K	17" x 15" x 13.5" 19" x 19" x 19"	192.0K 408.0K	12 kgs 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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