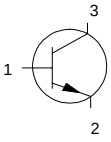
SOT-23 Formed SMD Package **CMBT918**

VHF/UHF TRANSISTOR

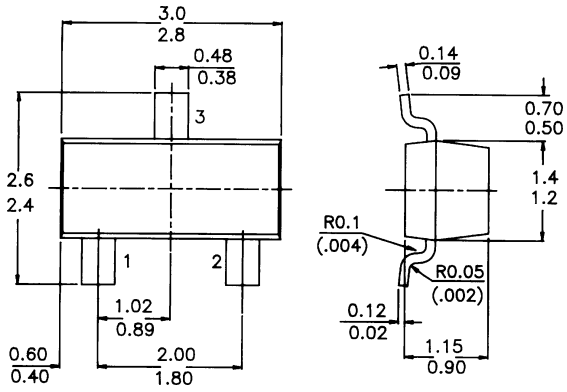
N–P–N transistor

Marking
CMBT918 = 3B

Pin configuration
1 = BASE
2 = EMITTER
3 = COLLECTOR



PACKAGE OUTLINE DETAILS
ALL DIMENSIONS IN mm



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°C	P_{tot}	*max*	*225*	*mW*
D.C. current gain				
$-I_C$ = 3 mA; $-V_{CE}$ = 1 V	h_{FE}	*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*

Total power dissipation at T_{amb} = 25°C	P_{tot}	*max*	*225*	*mW*
Storage temperature	T_{stg}	*–55 to +150*		*° C*
Junction temperature	*Tj*	*max.*	*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

CHARACTERISTICS *(at T_A = 25°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 µA; $–I_E$ = 0	$–V_{(BR)CBO}$	*min.*	*30*	*V*
Emitter–base breakdown voltage				
$–I_E$ = 10 µA; $–I_C$ = 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 Ω				
$–I_C$ = 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*

Customer Notes

Disclaimer

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