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Continental Device India Limited

An ISO/TS 16949, ISO 9001 and ISO 14001 Certified Company

SOT-23 Formed SMD Package

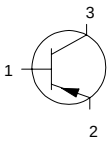
CMBT8598
CMBT8599

GENERAL PURPOSE TRANSISTOR

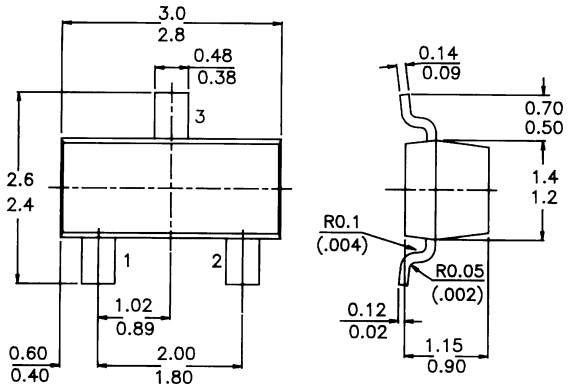
P–N–P transistor

Marking
CMBT8598 = 2K
CMBT8599 = 2W

Pin configuration
1 = BASE
2 = EMITTER
3 = COLLECTOR



PACKAGE OUTLINE DETAILS
ALL DIMENSIONS IN mm



ABSOLUTE MAXIMUM RATINGS

			CMBT 8598		***8599***	
Collector–base voltage (open emitter)	$-V_{CBO}$	*max.*	*60*		*80*	*V*
Collector–emitter voltage (open base)	$-V_{CEO}$	*max.*	*60*		*80*	*V*
Emitter–base voltage (open collector)	$-V_{EBO}$	*max.*		*5*		*V*
Collector current (d.c.)	$-I_C$	*max.*		*500*		*mA*
Total power dissipation at T_{amb} = 25°C	P_{tot}	*max.*		*225*		mW
D.C. current gain						
$-I_C$ = 100 mA; $-V_{CE}$ = 5 V	h_{FE}	*min.*	*75*		*75*	

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

Limiting values						
Collector–base voltage (open emitter)	$-V_{CBO}$	*max.*	*60*		*80*	*V*
Collector–emitter voltage (open base)	$-V_{CEO}$	*max.*	*60*		*80*	*V*
Emitter–base voltage (open collector)	$-V_{EBO}$	*max.*		*5*	*V*	
Collector current (d.c.)	$-I_C$	*max.*		*500*	*mA*	

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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						
$–I_C$ = 1 mA; $–I_E$ = 0	$–V_{(BR)CEO}$	*min.*	*60*		*80*	*V*
Collector–base breakdown voltage						
$–I_C$ = 10 μA; $–I_E$ = 0	$–V_{(BR)CBO}$	*min.*	*60*		*80*	*V*
Emitter–base breakdown voltage						
$–I_E$ = 10 μA; $–I_C$ = 0	$–V_{(BR)EBO}$	*min.*	*5*		*5*	*V*
Collector cut–off current						
$–V_{CB}$ = 20 V; $–I_E$ = 0	$–I_{CBO}$	*max.*	*50*		*50*	*nA*
Emitter cut–off current						
$–V_{BE}$ = 3 V; $–I_C$ = 0	$–I_{EBO}$	*max.*	*50*		*50*	*nA*
Output capacitance at f = 100 kHz						
I_E = 0; $–V_{CB}$ = 5 V	C_c	*max.*	*4.5*		*4.5*	*pF*
Input capacitance at f = 100 kHz						
I_C = 0; $–V_{BE}$ = 0.5 V	C_e	*max.*	*30*		*30*	*pF*
Saturation voltages						
$–I_C$ = 100 mA; $–I_B$ = 5 mA	$–V_{CEsat}$	*max.*	*0.4*		*0.4*	*V*
Base emitter voltage						
IC = 1 mA; VCE = 5 V;	*VBE(on)*	*max.*	*0.7*		*-*	*V*
IC = 10 mA; VCE = 5 V		*max.*	*-*		*0.9*	*V*
D.C. current gain						
$–I_C$ = 1 mA; $–V_{CE}$ = 5 V	h_{FE}	*min.*		*100*		
		max.		*300*		
$–I_C$ = 10 mA; $–V_{CE}$ = 5 V	h_{FE}	*min.*		*100*		
$–I_C$ = 100 mA; $–V_{CE}$ = 5 V	h_{FE}	*min.*		*75*		
Noise figure at R_S = 1 kΩ						
$–I_C$ = 100 μA; $–V_{CE}$ = 5 V						
f = 10 Hz to 15.7 kHz	*NF*	*max.*		*5*		*dB*
Transition frequency						
V_{CE} = 5 V; I_C = 10 mA; f = 100 MHz	f_T	*min.*		*150*		*MHz*
		max.		*225*		*MHz*

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Customer Notes

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Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Discrete Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished on the CDIL Web Site/ CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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