Continental Device India Limited

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

SOT-23 Formed SMD Package

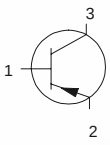
CMBTA92
CMBTA93

SILICON EPITAXIAL TRANSISTORS

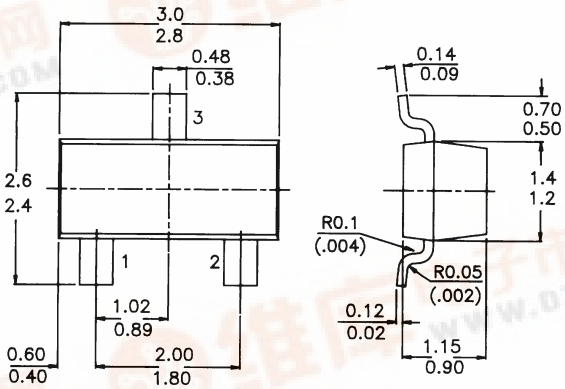
P–N–P transistor

Marking
CMBTA92 = 2D
CMBTA93 = 2E

Pin configuration
1 = BASE
2 = EMITTER
3 = COLLECTOR



PACKAGE OUTLINE DETAILS
ALL DIMENSIONS IN mm



ABSOLUTE MAXIMUM RATINGS

			CMBTA92	A93	
Collector–base voltage (open emitter)	$-V_{CBO}$	*max.*	300	200	V
Collector–emitter voltage (open base)	$-V_{CEO}$	*max.*	300	200	V
Emitter–base voltage (open collector)	$-V_{EBO}$	*max.*	5		V
Collector current (d.c.)	$-I_C$	*max.*	500		mA
Total power dissipation up to T_{amb} = 25 °C	P_{tot}		250		mW
D.C. current gain					
$-I_C$ = 10 mA; $-V_{CE}$ = 10 V	h_{FE}	*min.*	40		
Transition frequency at f = 100 MHz					
$-I_C$ = 10 mA; $-V_{CE}$ = 20 V	f_T	*min.*	50		MHz
Collector–base capacitance at f = 1 MHz					
I_E = 0; $-V_{CB}$ = 20 V	C_{cb}	*max.*	6	8	pF

CMBTA92
CMBTA93

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

			CMBTA92	A93	
Collector–base voltage (open emitter)	$-V_{CBO}$	*max.*	*300*	*200*	*V*
Collector–emitter voltage (open base)	$-V_{CEO}$	*max.*	*300*	*200*	*V*
Emitter–base voltage (open collector)	$-V_{EBO}$	*max.*	*5*		*V*
Collector current (d.c.)	$-I_C$	*max.*	*500*		*mA*
Total power dissipation up to T_{amb} = 25 °C	P_{tot}	*max*	*250*		mW
Storage temperature	T_{stg}		*–55 to +150*		*° C*
Junction temperature	*Tj*	*max.*	*150*		*° C*

THERMAL CHARACTERISTICS
$T_j = P\ (R_{th\ j-t} + R_{th\ t-s} + R_{th\ s-a}) + T_{amb}$
Thermal resistance

from junction to ambient	$R_{th\ j-a}$		*500*	K/W

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

			CMBTA92	A93	
Collector–emitter breakdown voltage					
$-I_C$ = 1 mA; I_B = 0	$-V_{(BR)CEO}$	*min.*	*300*	*200*	*V*
Collector–base breakdown voltage					
$-I_C$ = 100 µA; I_E = 0	$-V_{(BR)CBO}$	*min.*	*300*	*200*	*V*
Collector cut–off current					
$-V_{CB}$ = 200 V; I_E = 0	$-I_{CBO}$	*max.*	*0.25*	*–*	*µA*
$-V_{CB}$ = 160 V; I_E = 0	$-I_{CBO}$	*max.*	*–*	*0.25*	*µA*
Emitter–base breakdown voltage					
$-I_E$ = 100 µA; I_C = 0	$-V_{(BR)EBO}$	*min.*	*5*		*V*
Emitter cut–off current					
I_C = 0; $-V_{BE}$ = 3 V;	$-I_{EBO}$	*max.*	*0.1*	*0.1*	*mA*
Collector–base capacitance at f= 1 MHz					
I_E = 0; $-V_{CB}$ = 20 V	C_{cb}	*max.*	*6*	*8*	*pF*
Saturation voltages					
$-I_C$ = 20 mA; $-I_B$ = 2 mA	$-V_{CEsat}$	*max.*	*0.5*	*0.5*	*V*
$-I_C$ = 20 mA; $-I_B$ = 2 mA	$-V_{BEsat}$	*max.*	*0.9*	*0.9*	*V*
D.C. current gain					
$-I_C$ = 1 mA; $-V_{CE}$ = 10 V	h_{FE}	*min.*	*25*		
$-I_C$ = 10 mA; $-V_{CE}$ = 10 V	h_{FE}	*min.*	*40*		
$-I_C$ = 30 mA; $-V_{CE}$ = 10 V	h_{FE}	*min.*	*25*		

Customer Notes

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 is 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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