SOT-23 Formed SMD Package

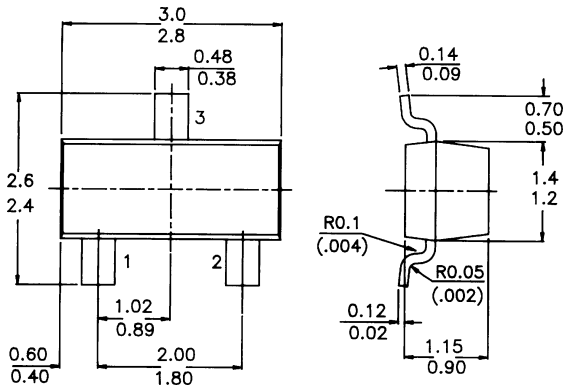
CMBTA05
CMBTA06

SILICON EPITAXIAL TRANSISTORS

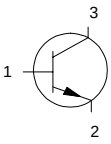
N–P–N transistor

Marking
CMBTA05 = 1H
CMBTA06 = 1G

PACKAGE OUTLINE DETAILS
ALL DIMENSIONS IN mm



Pin configuration
1 = BASE
2 = EMITTER
3 = COLLECTOR



ABSOLUTE MAXIMUM RATINGS

			CMBTA05	***A06***	
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.*	*4*		*V*
Collector current (d.c.)	I_C	*max.*	*500*		*mA*
Total power dissipation up to T_{amb} = 25 °C	P_{tot}	*max.*	*250*		mW
D.C. current gain					
I_C = 100 mA; V_{CE} = 1 V	h_{FE}	*min.*	*100*		
Transition frequency at f = 100 MHz					
I_C = 10 mA; V_{CE} = 2 V	f_T	*min.*	*100*		MHz
Collector–emitter saturation voltage					
I_C = 100 mA; I_B = 10 mA	V_{CEsat}	*max.*	*0.25*		*V*

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.*	*4*	*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}	*max.*	*–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)*

			CMBTA05 | ***A06***	
Collector–emitter breakdown voltage				
I_C = 1 mA; I_B = 0	$V_{(BR)CEO}$	*min.*	*60 | 80*	*V*
Emitter–base breakdown voltage				
I_C = 0; I_E = 100 µA	$V_{(BR)EBO}$	*min.*	*4*	*V*
Collector cut–off current				
V_{CE} = 60 V; I_B = 0	I_{CEO}	*max.*	*0.1*	*µA*
V_{CB} = 60 V; I_E = 0	I_{CBO}	*max.*	*0.1*	*µA*
V_{CB} = 80 V; I_E = 0	I_{CBO}	*max.*	*0.1*	*µA*
Saturation voltages				
I_C = 100 mA; I_B = 10 mA	V_{CEsat}	*max.*	*0.25*	*V*
Base–emitter on voltage				
I_C = 100 mA; V_{CE} = 1 V	$V_{BE(on)}$	*max.*	*1.2*	*V*
D.C. current gain				
I_C = 10 mA; V_{CE} = 1 V	h_{FE}	*min.*	*100*	
I_C = 100 mA; V_{CE} = 1 V	h_{FE}	*min.*	*100*	
Transition frequency at f = 100 MHz				
I_C = 10 mA; V_{CE} = 2 V	f_T	*min.*	*100*	MHz

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 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).

CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.

CDIL is a registered Trademark of
Continental Device India Limited
C-120 Naraina Industrial Area, New Delhi 110 028, India.
Telephone + 91-11-2579 6150, 5141 1112 Fax + 91-11-2579 5290, 5141 1119
email@cdil.com www.cdilsemi.com