

SILICON EPITAXIAL TRANSISTORS

P-N-P transistor

Marking

CMBTA55 = 2H

CMBTA56 = 2G

PACKAGE OUTLINE DETAILS

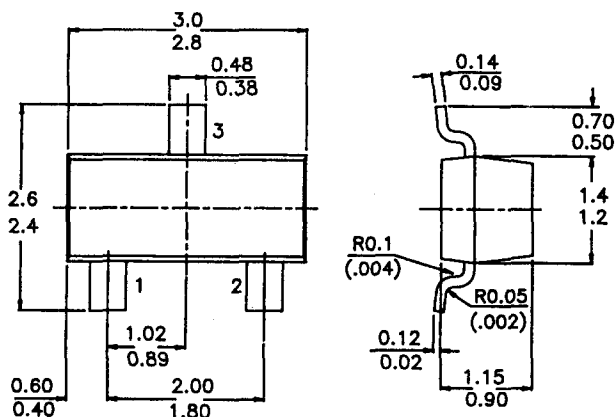
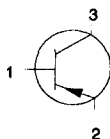
ALL DIMENSIONS IN mm

Pin configuration

1 = BASE

2 = EMITTER

3 = COLLECTOR



ABSOLUTE MAXIMUM RATINGS

		CMBTA55	A56
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 $T_{amb} = 25^\circ\text{C}$	P_{tot}	250	mW
D.C. current gain	h_{FE}	min. 50	
Transition frequency at $f = 100\text{ MHz}$	f_T	min. 50	MHz
Collector-emitter saturation voltage	V_{CEsat}	max. 0.25	V
$-I_C = 100\text{ mA}; -V_{CE} = 1\text{ V}$			
$-I_C = 100\text{ mA}; -V_{CE} = 1\text{ V}$			
$-I_C = 100\text{ mA}; I_B = 10\text{ mA}$			

RATINGS (at $T_A = 25^\circ\text{C}$ unless otherwise specified)

Limiting values

		CMBTA55		A56	
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 $T_{amb} = 25^\circ\text{C}$	P_{tot}	max.	250		mW
Storage temperature	T_{stg}		-55 to +150		$^\circ\text{C}$
Junction temperature	T_j	max.	150		$^\circ\text{C}$

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 $T_A = 25^\circ\text{C}$ unless otherwise specified)

Collector-emitter breakdown voltage		CMBTA55		A56	
$-I_C = 1\text{ mA}; I_B = 0$	$-V_{(BR)CEO\ min.}$		60	80	V
Emitter-base breakdown voltage					
$-I_C = 0; I_E = 100\ \mu\text{A}$	$-V_{(BR)EBO\ min.}$		4		V
Collector cut-off current					
$-V_{CE} = 60\text{ V}; I_B = 0$	$-I_{CEO}$	max.	0.1		μA
$-V_{CB} = 60\text{ V}; I_E = 0$	$-I_{CBO}$	max.	0.1		μA
$-V_{CB} = 80\text{ V}; I_E = 0$	$-I_{CBO}$	max.	0.1		μA
Saturation voltages					
$-I_C = 100\text{ mA}; -I_B = 10\text{ mA}$	$-V_{CEsat}$	max.	0.25		V
Base-emitter On voltage					
$-I_C = 100\text{ mA}; -V_{CE} = 1\text{ V}$	$-V_{BE(on)}$	max.	1.2		V
D.C. current gain					
$-I_C = 10\text{ mA}; -V_{CE} = 1\text{ V}$	h_{FE}	min.	100		
$-I_C = 100\text{ mA}; -V_{CE} = 1\text{ V}$	h_{FE}	min.	100		
Transition frequency at $f = 100\text{ MHz}$					
$-I_C = 100\text{ mA}; -V_{CE} = 1\text{ V}$	f_T	min.	50		MHz