

SILICON EPITAXIAL TRANSISTORS

N-P-N transistors in a microminiature (SMD) plastic package intended for surface mounted applications. They are primarily intended for use in telephony and professional communication equipment.

QUICK REFERENCE DATA

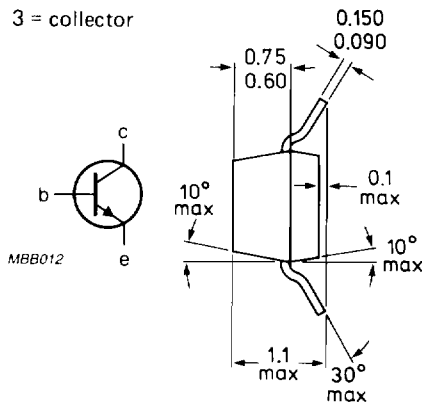
		PMBTA05	PMBTA06
Collector-base voltage (open emitter)	V_{CBO}	max. 60	80 V
Collector-emitter voltage (open base)	V_{CEO}	max. 60	80 V
Emitter-base voltage (open collector)	V_{EBO}	max. 4	V
Collector current (d.c.)	I_C	max. 500	mA
Total power dissipation up to $T_{amb} = 25\text{ }^\circ\text{C}$	P_{tot}	max. 250	mW
D.C. current gain $I_C = 100\text{ mA}; V_{CE} = 1\text{ V}$	h_{FE}	min. 50	
Transition frequency at $f = 100\text{ MHz}$ $I_C = 10\text{ mA}; V_{CE} = 2\text{ V}$	f_T	min. 100	MHz
Collector-emitter saturation voltage $I_C = 100\text{ mA}; I_B = 10\text{ mA}$	V_{CEsat}	max. 0,25	V

MECHANICAL DATA

Fig. 1 SOT-23.

Pinning:

- 1 = base
- 2 = emitter
- 3 = collector

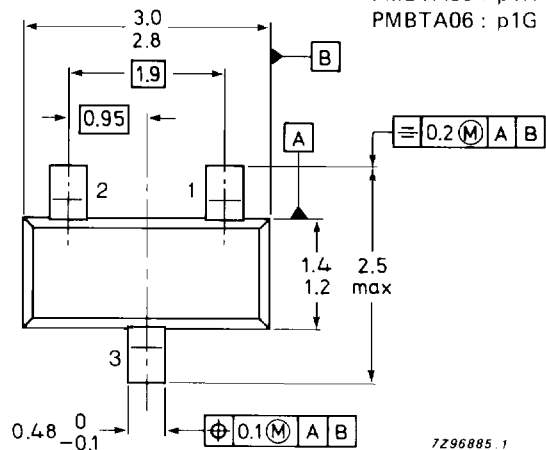


Dimensions in mm

Marking code

PMBTA05 : p1H

PMBTA06 : p1G



7296885.1

TOP VIEW

RATINGS

Limiting values in accordance with the Absolute Maximum System (IEC 134)

			PMBTA05	PMBTA06
Collector-base voltage	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 $T_{amb} = 25\text{ }^{\circ}\text{C}$	P_{tot}	max.	250	mW
Storage temperature	T_{stg}		-65 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
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CHARACTERISTICS

$T_{amb} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified

			PMBTA05	PMBTA06
Collector-emitter breakdown voltage ▲ $I_C = 1\text{ mA}; I_B = 0$	$V_{(BR)CEO}$	min.	60	80 V
Emitter-base breakdown voltage $I_C = 0; I_E = 100\text{ }\mu\text{A}$	$V_{(BR)EBO}$	min.	4	V
Collector cut-off current $V_{CE} = 60\text{ V}; I_B = 0$	I_{CEO}	max.	0,1	μA
Collector cut-off current $V_{CB} = 60\text{ V}; I_E = 0$ $V_{CB} = 80\text{ V}; I_E = 0$	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.	50	
$I_C = 100\text{ mA}; V_{CE} = 1\text{ V}$	h_{FE}	min.	50	
Transition frequency at $f = 100\text{ MHz}$ $I_C = 10\text{ mA}; V_{CE} = 2\text{ V}$	f_T	min.	100	MHz

* Mounted on an FR4 printed-circuit board 8 mm x 10 mm x 0.7 mm.

** See Thermal characteristics.

▲ Pulse test conditions: $t_p = 300\text{ }\mu\text{s}$; duty cycle $\leq 2\%$.