

SILICON EPITAXIAL TRANSISTORS

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

QUICK REFERENCE DATA

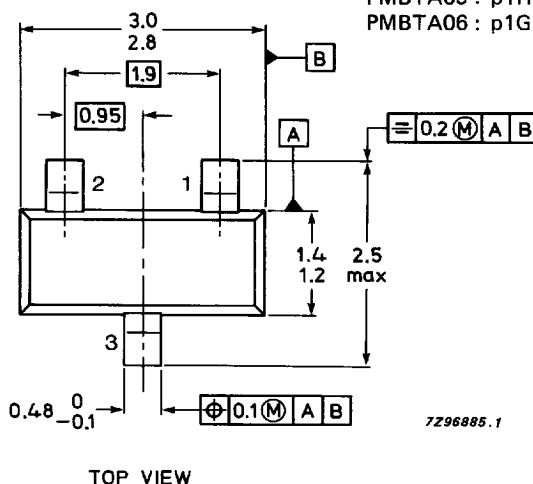
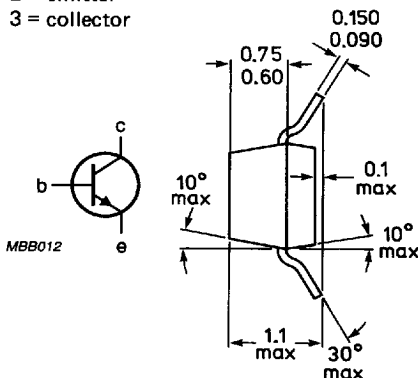
			PMBTA05	PMBTA06
Collector-base voltage (open emitter)	V_{CB0}	max.	60	80 V
Collector-emitter voltage (open base)	V_{CE0}	max.	60	80 V
Emitter-base voltage (open collector)	V_{EB0}	max.	4	V
Collector current (d.c.)	I_C	max.	500	mA
Total power dissipation up to $T_{amb} = 25^\circ C$	P_{tot}	max.	250	mW
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



See also Soldering recommendations.

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 °C	P _{tot}	max.	250	mW
Storage temperature	T _{stg}		-65 to +150	°C
Junction temperature	T _j	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

$$R_{th j-a} = 500 \text{ K/W}$$

CHARACTERISTICS

T_{amb} = 25 °C unless otherwise specified

			PMBTA05	PMBTA06
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
Collector cut-off current V _{CB} = 60 V; I _E = 0 V _{CB} = 80 V; I _E = 0	I _{CBO}	max. max.	0,1 0,1	μA 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.	50	
I _C = 100 mA; V _{CE} = 1 V	h _{FE}	min.	50	
Transition frequency at f = 100 MHz I _C = 10 mA; V _{CE} = 2 V	f _T	min.	100	MHz

* Mounted on a ceramic substrate: area = 10 x 8 mm; thickness = 0,7 mm.

** See Thermal characteristics.

▲ Pulse test conditions: t_p = 300 μs; duty cycle ≤ 2%.