

SILICON EPITAXIAL TRANSISTORS

P-N-P 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

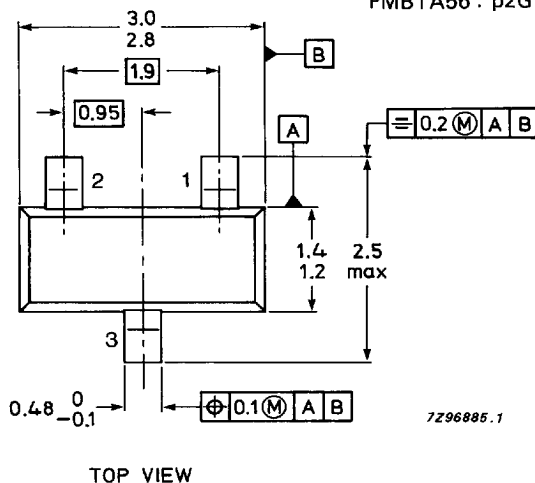
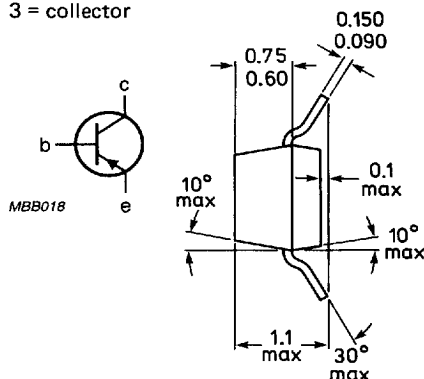
			PMBTA55	PMBTA56
Collector-base voltage (open emitter)	$-V_{CB0}$	max.	60	80 V
Collector-emitter voltage (open base)	$-V_{CEO}$	max.	60	80 V
Emitter-base voltage (open collector)	$-V_{EB0}$	max.	4	V
Collector current (d.c.)	$-I_C$	max.	500	mA
Total power dissipation up to $T_{amb} = 25^\circ\text{C}$	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 $f = 100\text{ MHz}$				
$-I_C = 100\text{ mA}; -V_{CE} = 1\text{ V}$	f_T	min.	50	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

PMBTA55 : p2H

PMBTA56 : p2G

See also Soldering recommendations.

RATINGS

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

			PMBTA55	PMBTA56
Collector-base voltage (open emitter)	$-V_{CB0}$	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}		-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

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

CHARACTERISTICS

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

			PMBTA55	PMBTA56
Collector-emitter breakdown voltage▲ $-I_C = 1 \text{ mA}; I_B = 0$	$-V_{(BR)CEO}$	min.	60	80 V
Emitter-base breakdown voltage $-I_C = 0; I_E = 100 \mu\text{A}$	$-V_{(BR)EBO}$	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. max.	0,1 0,1	μA 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 $-I_C = 10 \text{ mA}; -V_{CE} = 1 \text{ V}$ $-I_C = 100 \text{ mA}; -V_{CE} = 1 \text{ V}$	h_{FE}	min. min.	50 50	
Transition frequency at $f = 100 \text{ MHz}$ $-I_C = 100 \text{ mA}; -V_{CE} = 1 \text{ V}$	f_T	min.	50	MHz

* Mounted on a ceramic substrate: area = $10 \times 8 \text{ mm}$; thickness = $0,7 \text{ mm}$.

** See Thermal characteristics.

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