

## PNP high-voltage transistors

## PMBTA92; PMBTA93

## FEATURES

- Low current (max. 100 mA)
- High voltage (max. 300 V).

## APPLICATIONS

- Telephony
- Professional communication equipment.

## DESCRIPTION

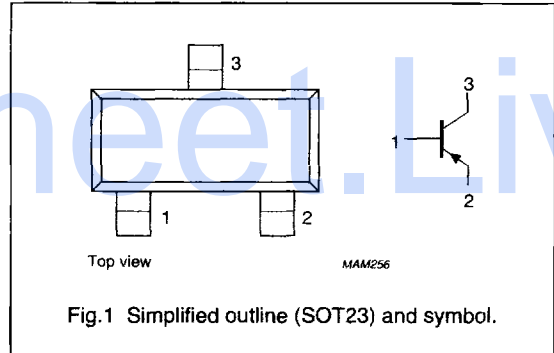
PNP high-voltage transistor in a SOT23 plastic package.  
NPN complements: PMBTA42 and PMBTA43.

## MARKING

TYPE NUMBER	MARKING CODE
PMBTA92	p2D
PMBTA93	p2E

## PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector



## QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{CBO}$	collector-base voltage	open emitter			
	PMBTA92		-	-300	V
	PMBTA93		-	-200	V
$V_{CEO}$	collector-emitter voltage	open base			
	PMBTA92		-	-300	V
	PMBTA93		-	-200	V
$I_{CM}$	peak collector current		-	-200	mA
$P_{tot}$	total power dissipation	$T_{amb} \leq 25 \text{ }^\circ\text{C}$	-	250	mW
$h_{FE}$	DC current gain	$I_C = -10 \text{ mA}; V_{CE} = -10 \text{ V}$	40	-	
$f_T$	transition frequency	$I_C = -10 \text{ mA}; V_{CE} = -20 \text{ V}; f = 100 \text{ MHz}$	50	-	MHz

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**LIMITING VALUES**

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V <sub>CBO</sub>	collector-base voltage	open emitter	-	-300	V
	PMBTA92			-200	V
V <sub>CEO</sub>	collector-emitter voltage	open base	-	-300	V
	PMBTA92			-200	V
V <sub>EBO</sub>	emitter-base voltage	open collector	-	-5	V
I <sub>C</sub>	collector current (DC)		-	-100	mA
I <sub>CM</sub>	peak collector current		-	-200	mA
I <sub>BM</sub>	peak base current		-	-100	mA
P <sub>tot</sub>	total power dissipation	T <sub>amb</sub> ≤ 25 °C; note 1	-	250	mW
T <sub>stg</sub>	storage temperature		-65	+150	°C
T <sub>j</sub>	junction temperature		-	150	°C
T <sub>amb</sub>	operating ambient temperature		-65	+150	°C

**Note**

1. Transistor mounted on an FR4 printed-circuit board.

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R <sub>th j-a</sub>	thermal resistance from junction to ambient	note 1	500	K/W

**Note**

1. Transistor mounted on an FR4 printed-circuit board.

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**CHARACTERISTICS**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$I_{CBO}$	collector cut-off current PMBTA92	$I_E = 0; V_{CB} = -200\text{ V}$	–	–250	nA
$I_{CBO}$	collector cut-off current PMBTA93	$I_E = 0; V_{CB} = -160\text{ V}$	–	–250	nA
$I_{EBO}$	emitter cut-off current	$I_C = 0; V_{EB} = -3\text{ V}$	–	–100	nA
$h_{FE}$	DC current gain	$V_{CE} = -10\text{ V}$ ; note 1 $I_C = -1\text{ mA}$ ; $I_C = -10\text{ mA}$ $I_C = -30\text{ mA}$	25 40 25	– – –	
$V_{CEsat}$	collector-emitter saturation voltage	$I_C = -20\text{ mA}; I_B = -2\text{ mA}$	–	–500	mV
$V_{BEsat}$	base-emitter saturation voltage	$I_C = -20\text{ mA}; I_B = -2\text{ mA}$	–	–900	mV
$C_c$	collector capacitance PMBTA92 PMBTA93	$I_E = I_B = 0; V_{CB} = -20\text{ V}; f = 1\text{ MHz}$	– –	6 8	pF pF

**Note**

1. Pulse test:  $t_p \leq 300\text{ }\mu\text{s}$ ;  $\delta \leq 0.02$ .