

PNP high-voltage transistor MMBTA92

Features

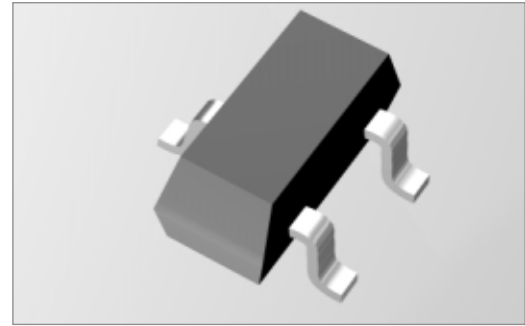
- Low current (max. 100 mA)
- High voltage (max. 300 V)

Applications

- Telephony
- Professional communication equipment.

Description

- PNP high-voltage transistor in a SOT23 plastic package
- NPN complement: MMBTA42.



Pinning

Pin	Description
1	base
2	emitter
3	collector

Marking

Type Number	Marking Code (1)
MMBTA92	7E*

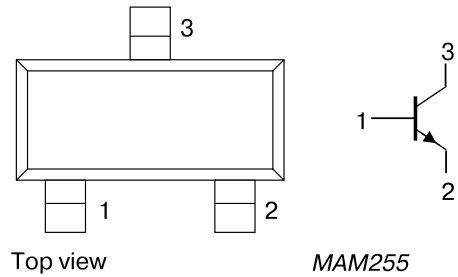


Fig.1 Simplified outline (SOT23) and symbol.

Ordering Information

Type Number	Package		
	Name	Description	VERSION
MMBTA92	–	plastic surface mounted package; 3 leads	SOT23

Limiting Values

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

Symbol	Parameter	Conditions	Min.	Max.	Unit
V_{CBO}	collector-base voltage	open emitter	–	–300	V
V_{CEO}	collector-emitter voltage	open base	–	–300	V
V_{EBO}	emitter-base voltage	open collector	–	–5	V
I_C	collector current (DC)		–	–100	mA
I_{CM}	peak collector current		–	–200	mA
I_{BM}	peak base current		–	–100	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ °C}$; note 1	–	250	mW
T_{stg}	storage temperature		–65	+150	°C
T_J	junction temperature		–	150	°C
T_{amb}	operating ambient temperature		–65	+150	°C

Thermal Characteristics

Symbol	Parameter	Conditions	Value	Unit
$R_{th(j-a)}$	thermal resistance from junction to ambient	note 1	500	K/W

Note

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

Characteristics

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

Symbol	Parameter	Conditions	Min.	Max.	Unit
I_{CBO}	collector cut-off current	$I_E = 0; V_{CB} = -200\text{ V}$	—	-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_{rC}	feedback capacitance	$I_C = i_c = 0; V_{CB} = -20\text{ V}; f = 1\text{ MHz}$	—	6	pF
f_T	transition frequency	$I_C = -10\text{mA}; V_{CE} = -20\text{ V}; f = 100\text{ MHz}$	50	—	MHz

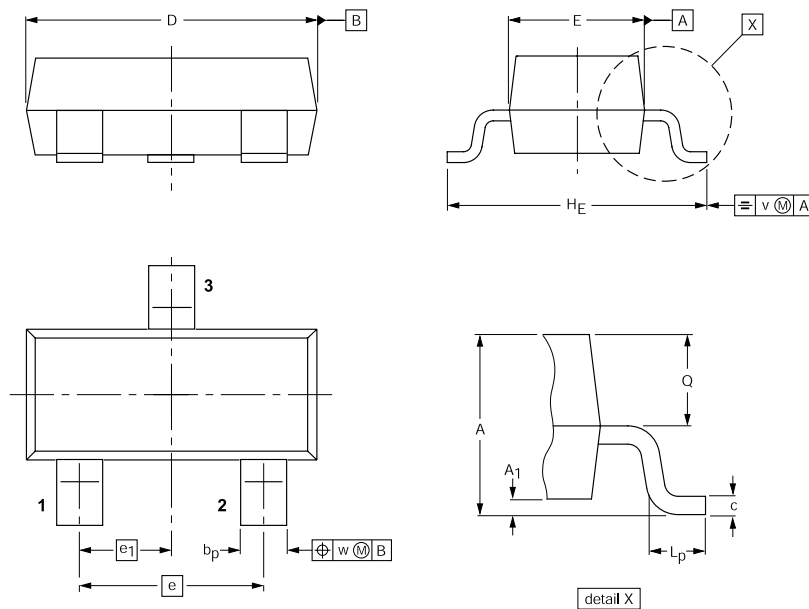
Note

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

Package Outline

Plastic surface mounted package; 3 leads

SOT23



Dimensions (mm are the original dimensions)

Unit	A	A ₁ max.	b _p	c	D	E	e	e ₁	H _E	L _p	Q	V	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1

Outline Version	References			European Projection	Issue Date
	IEC	JEDEC	EIAJ		
SOT23		TO-236AB			97-02-28 99-09-13