

NPN high-voltage transistor MMBTA42

Features

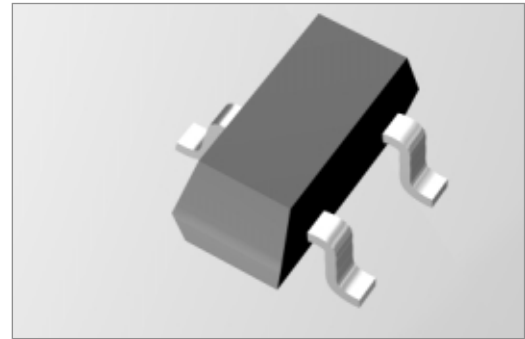
- Low current (max. 100 mA)
- High voltage (max. 300 V)

Applications

- Telephony
- Professional communication equipment.

Description

- NPN high-voltage transistor in a SOT23 plastic package
- PNP complement: MMBTA92.

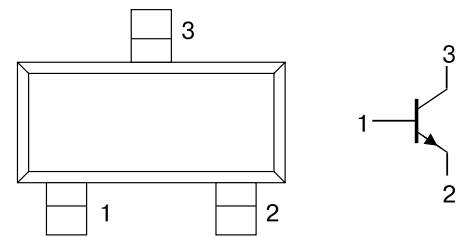


Pinning

Pin	Description
1	base
2	emitter
3	collector

Marking

Type Number	Marking Code
MMBTA42	7D*



Top view

MAM255

Fig.1 Simplified outline (SOT23) and symbol.

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	–	6	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

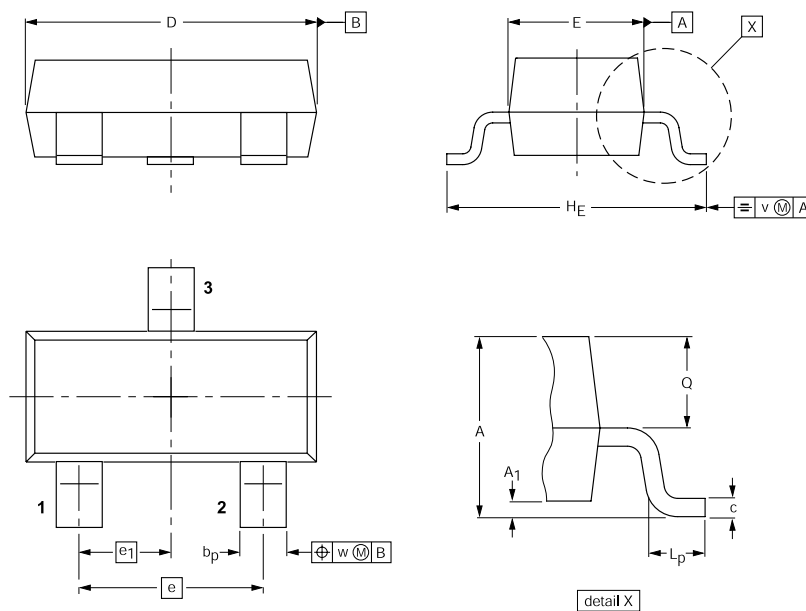
T_{amb} = 25 °C unless otherwise specified.

Symbol	Parameter	Conditions	Min.	Max.	Unit
I _{CBO}	collector cut-off current	I _E = 0; V _{CB} = 200 V	–	100	nA
I _{EBO}	emitter cut-off current	I _C = 0; V _{EB} = 6 V	–	100	nA
h _{FE}	DC current gain	V _{CE} = 10 V I _C = 1 mA I _C = 10 mA I _C = 30 mA	25 40 40	– – –	
V _{CEsat}	collector-emitter saturation voltage	I _C = 20 mA; I _B = 2 mA	–	500	mV
V _{BEsat}	base-emitter saturation voltage	I _C = 20 mA; I _B = 2 mA	–	900	mV
C _{re}	feedback capacitance	I _C = I _C = 0; V _{CB} = 20 V; f = 1 MHz	–	3	pF
f _T	transition frequency	I _C = 10 mA; V _{CE} = 20 V; f = 100 MHz	50	–	MHz

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