

NPN high-voltage transistor

PZTA42

FEATURES

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

APPLICATIONS

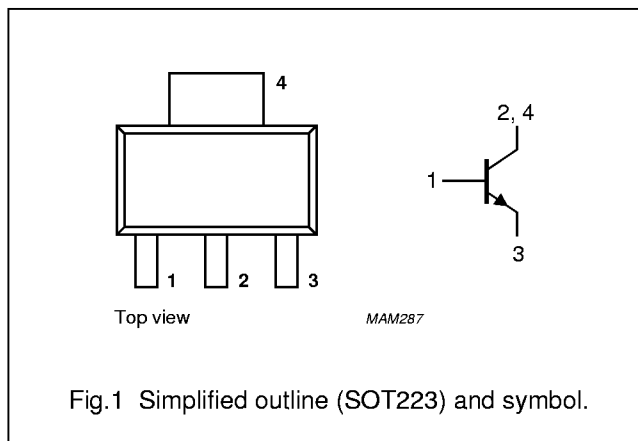
- Telephony and professional communication equipment.

DESCRIPTION

NPN high-voltage transistor in a SOT223 plastic package.
PNP complement: PZTA92.

PINNING

PIN	DESCRIPTION
1	base
2,4	collector
3	emitter



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	—	1.2	W
T_{stg}	storage temperature		−65	+150	°C
T_j	junction temperature		—	150	°C
T_{amb}	operating ambient temperature		−65	+150	°C

Note

1. Device mounted on a printed-circuit board, single-sided copper, tinplated, mounting pad for collector 1 cm². For other mounting conditions, see “*Thermal considerations for SOT223 in the General Part of associated Handbook*”.

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THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	104	K/W
$R_{th\ j-s}$	thermal resistance from junction to soldering point		23	K/W

Note

1. Device mounted on a printed-circuit board, single-sided copper, tinplated, mounting pad for collector 1 cm². For other mounting conditions, see *"Thermal considerations for SOT223 in the General Part of associated Handbook"*.

CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector cut-off current	$I_E = 0$; $V_{CB} = 200\text{ V}$	–	20	nA
I_{EBO}	emitter cut-off current	$I_C = 0$; $V_{BE} = 6\text{ V}$	–	100	nA
h_{FE}	DC current gain	$V_{CE} = 10\text{ V}$ $I_C = 1\text{ mA}$ $I_C = 10\text{ mA}$ $I_C = 30\text{ mA}$	25 40 40	– – –	
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_{re}	feedback capacitance	$I_C = I_C = 0$; $V_{CB} = 20\text{ V}$; $f = 1\text{ MHz}$	–	3	pF
f_T	transition frequency	$I_C = 10\text{ mA}$; $V_{CE} = 20\text{ V}$; $f = 100\text{ MHz}$	50	–	MHz

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PACKAGE OUTLINE

Plastic surface mounted package; collector pad for good heat transfer; 4 leads

SOT223

