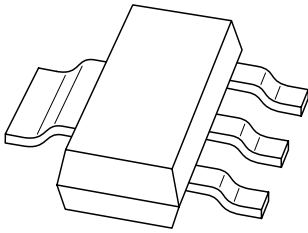


DATA SHEET



PZT4403 PNP switching transistor

Product specification

1999 May 10

PNP switching transistor

PZT4403

FEATURES

- High current (max. 600 mA)
- Low voltage (max. 40 V).

APPLICATIONS

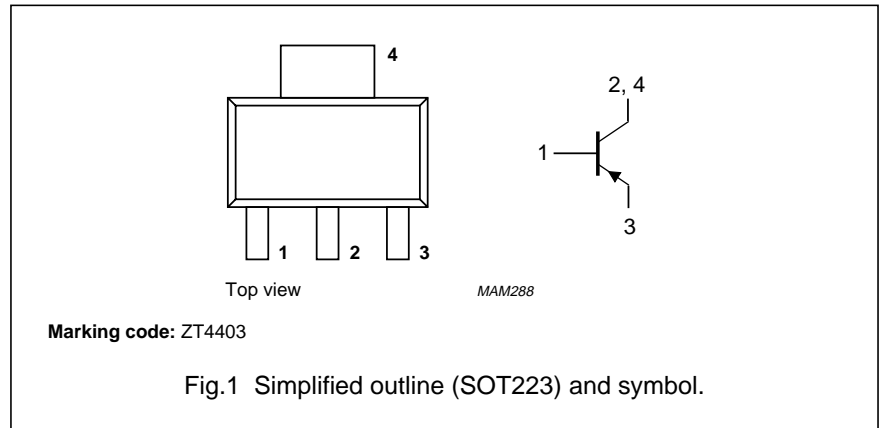
- Switching and linear amplification.

DESCRIPTION

PNP switching transistor in a SOT223 plastic package. NPN complement: PZT4401.

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	–	–40	V
V_{CEO}	collector-emitter voltage	open base	–	–40	V
V_{EBO}	emitter-base voltage	open collector	–	–6	V
I_C	collector current (DC)		–	–600	mA
I_{CM}	peak collector current		–	–800	mA
I_{BM}	peak base current		–	–200	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ }^\circ\text{C}$; note 1	–	1 150	mW
T_{stg}	storage temperature		–65	+150	$^\circ\text{C}$
T_j	junction temperature		–	150	$^\circ\text{C}$
T_{amb}	operating ambient temperature		–65	+150	$^\circ\text{C}$

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*”.

PNP switching transistor

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THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	106	K/W
$R_{th\ j-s}$	thermal resistance from junction to soldering point		25	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

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector cut-off current	$I_E = 0; V_{CB} = -40\text{ V}$	–	–50	nA
I_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = -5\text{ V}$	–	–50	nA
h_{FE}	DC current gain	$V_{CE} = -1\text{ V}$; see Fig.2			
		$I_C = -0.1\text{ mA}$	30	–	
		$I_C = -1\text{ mA}$	60	–	
		$I_C = -10\text{ mA}$	100	–	
		$I_C = -150\text{ mA}$; note 1	100	300	
		$V_{CE} = -2\text{ V}; I_C = -500\text{ mA}$; note 1	20	–	
V_{CEsat}	collector-emitter saturation voltage	$I_C = -150\text{ mA}; I_B = -15\text{ mA}$; note 1	–	–400	mV
		$I_C = -500\text{ mA}; I_B = -50\text{ mA}$; note 1	–	–750	mV
V_{BEsat}	base-emitter saturation voltage	$I_C = -150\text{ mA}; I_B = -15\text{ mA}$; note 1	–	–950	mV
		$I_C = -500\text{ mA}; I_B = -50\text{ mA}$; note 1	–	–1300	mV
C_c	collector capacitance	$I_E = i_e = 0; V_{CB} = -5\text{ V}; f = 1\text{ MHz}$	–	8.5	pF
C_e	emitter capacitance	$I_C = i_c = 0; V_{EB} = -500\text{ mV}; f = 1\text{ MHz}$	–	35	pF
f_T	transition frequency	$I_C = -20\text{ mA}; V_{CE} = -10\text{ V}; f = 100\text{ MHz}$	200	–	MHz

Switching times (between 10% and 90% levels); see Fig.3

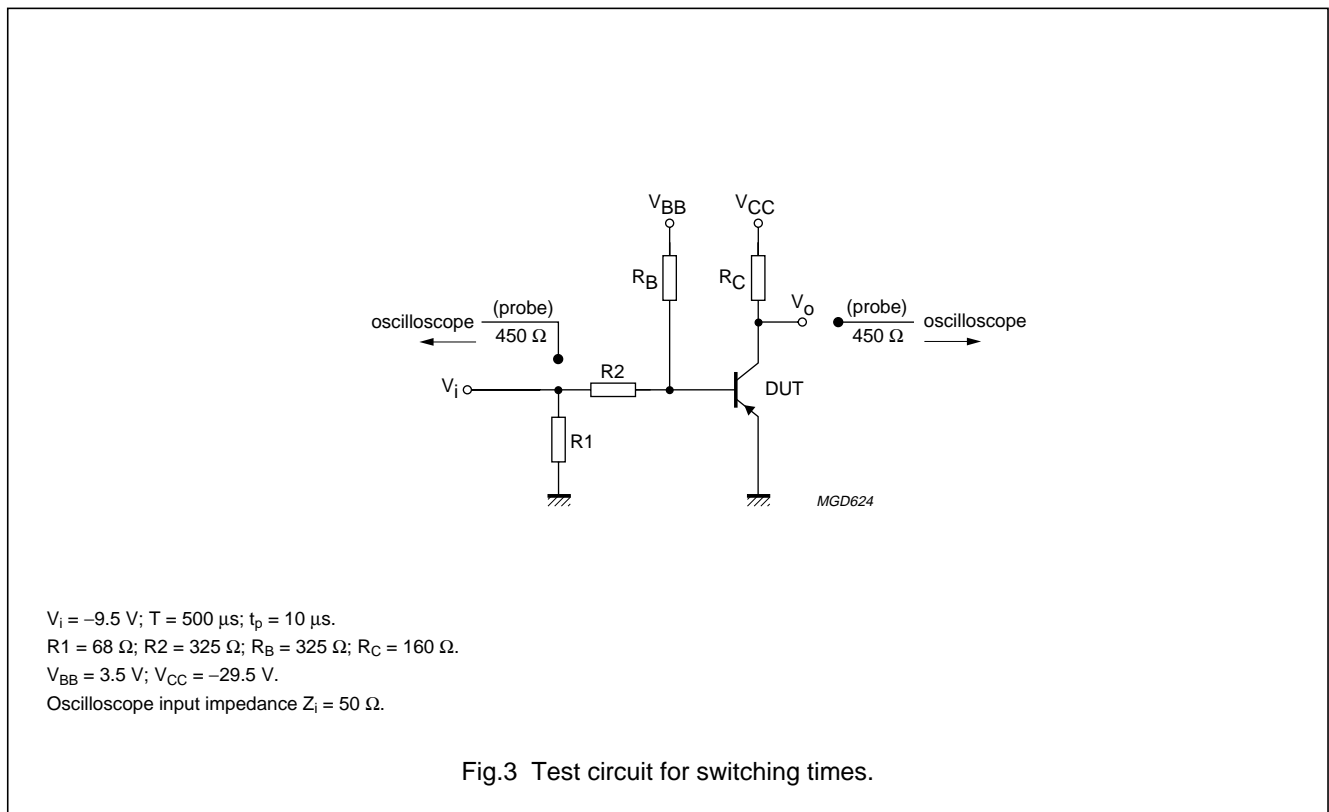
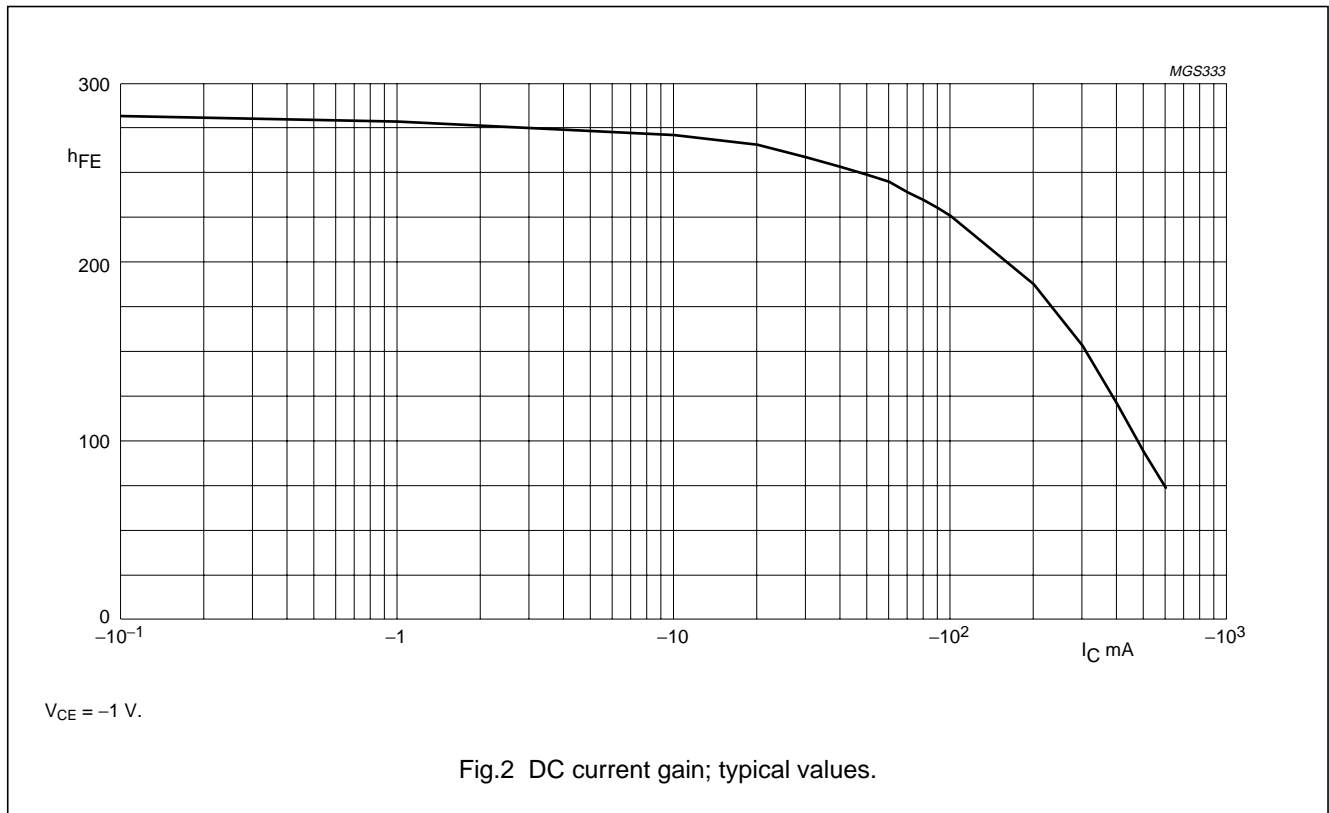
t_{on}	turn-on time	$I_{Con} = -150\text{ mA}; I_{Bon} = 15\text{ mA};$ $I_{Boff} = -15\text{ mA}; V_{BB} = 3.5\text{ V};$ $V_{CC} = -29.5\text{ V}$	–	40	ns
t_d	delay time		–	15	ns
t_r	rise time		–	30	ns
t_{off}	turn-off time		–	350	ns
t_s	storage time		–	300	ns
t_f	fall time		–	50	ns

Note

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

PNP switching transistor

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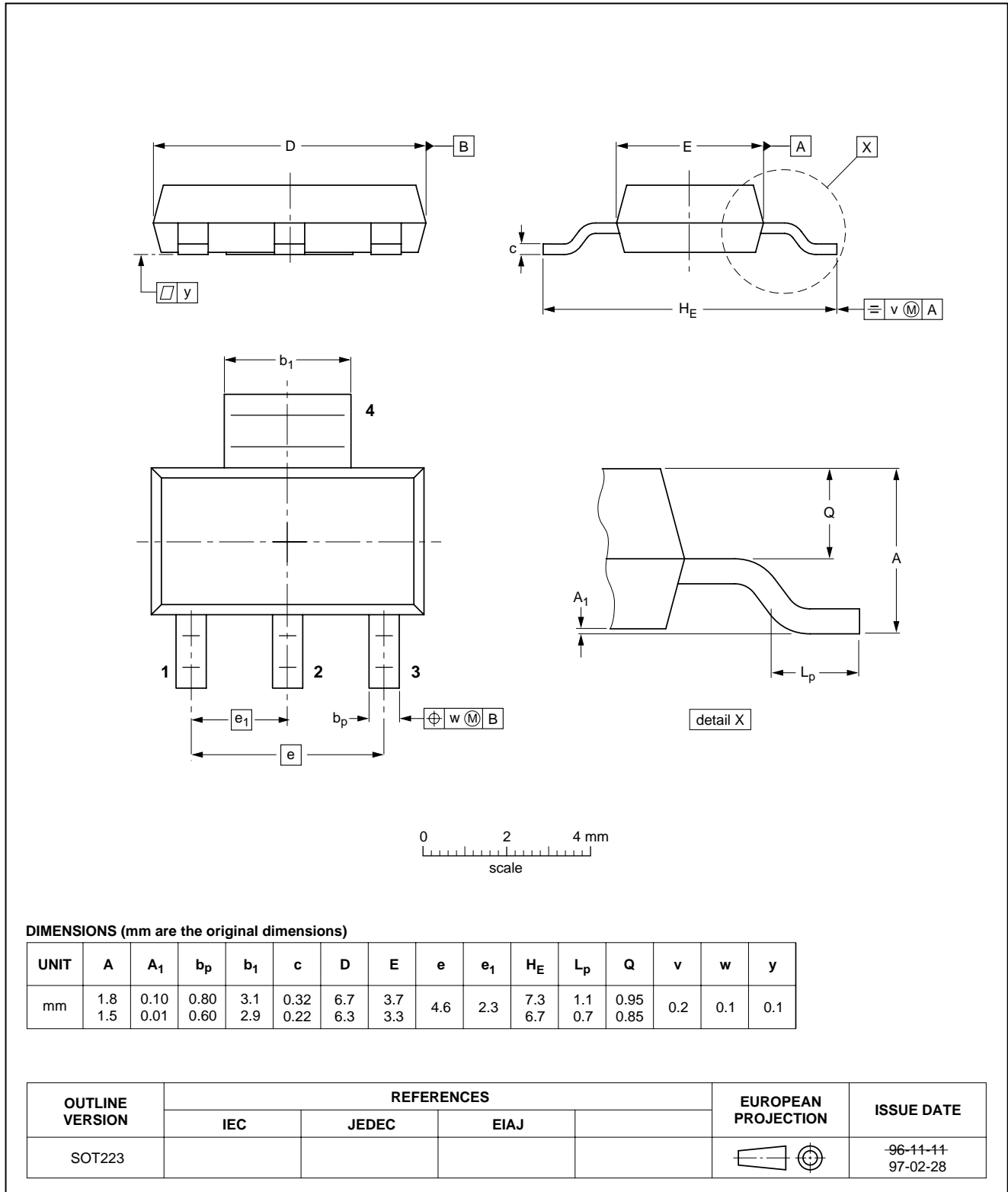
PNP switching transistor

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PACKAGE OUTLINE

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

SOT223



PNP switching transistor

PZT4403

DEFINITIONS

Data sheet status	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
Limiting values	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
Application information	
Where application information is given, it is advisory and does not form part of the specification.	

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PNP switching transistor

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