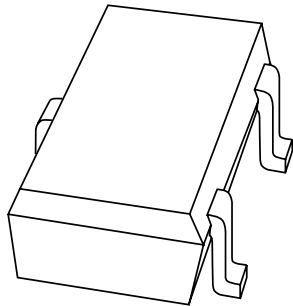


# DATA SHEET



## **PMST5401** PNP high-voltage transistor

Product data sheet  
Supersedes data of 1997 Jun 20

1999 Apr 29

# PNP high-voltage transistor

# PMST5401

### FEATURES

- Low current (max. 300 mA)
- High voltage (max. 150 V).

### APPLICATIONS

- General purpose
- Telephony.

### DESCRIPTION

PNP high-voltage transistor in a SOT323 plastic package.  
NPN complements: PMST5550 and PMST5551.

### MARKING

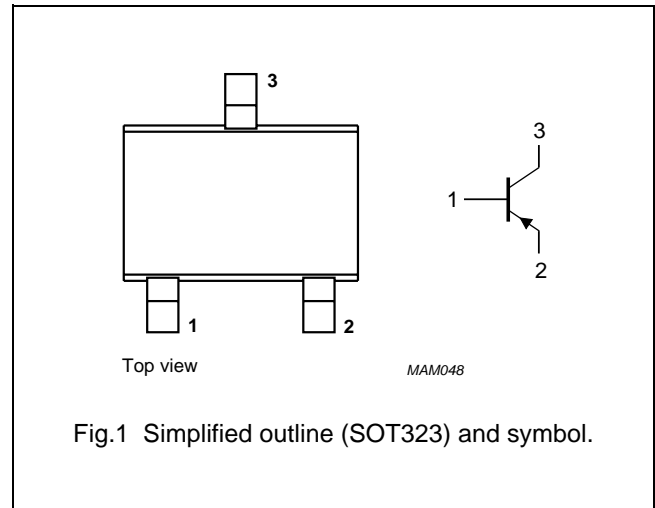
TYPE NUMBER	MARKING CODE <sup>(1)</sup>
PMST5401	*2L

### Note

- \* = - : Made in Hong Kong.  
\* = t : Made in Malaysia.

### PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector



### 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	-	-160	V
$V_{CEO}$	collector-emitter voltage	open base	-	-150	V
$V_{EBO}$	emitter-base voltage	open collector	-	-5	V
$I_C$	collector current (DC)		-	-300	mA
$I_{CM}$	peak collector current		-	-600	mA
$I_{BM}$	peak base current		-	-100	mA
$P_{tot}$	total power dissipation	$T_{amb} \leq 25\text{ }^\circ\text{C}$ ; note 1	-	200	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. Transistor mounted on an FR4 printed-circuit board.

## PNP high-voltage transistor

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## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	625	K/W

## Note

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

## CHARACTERISTICS

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

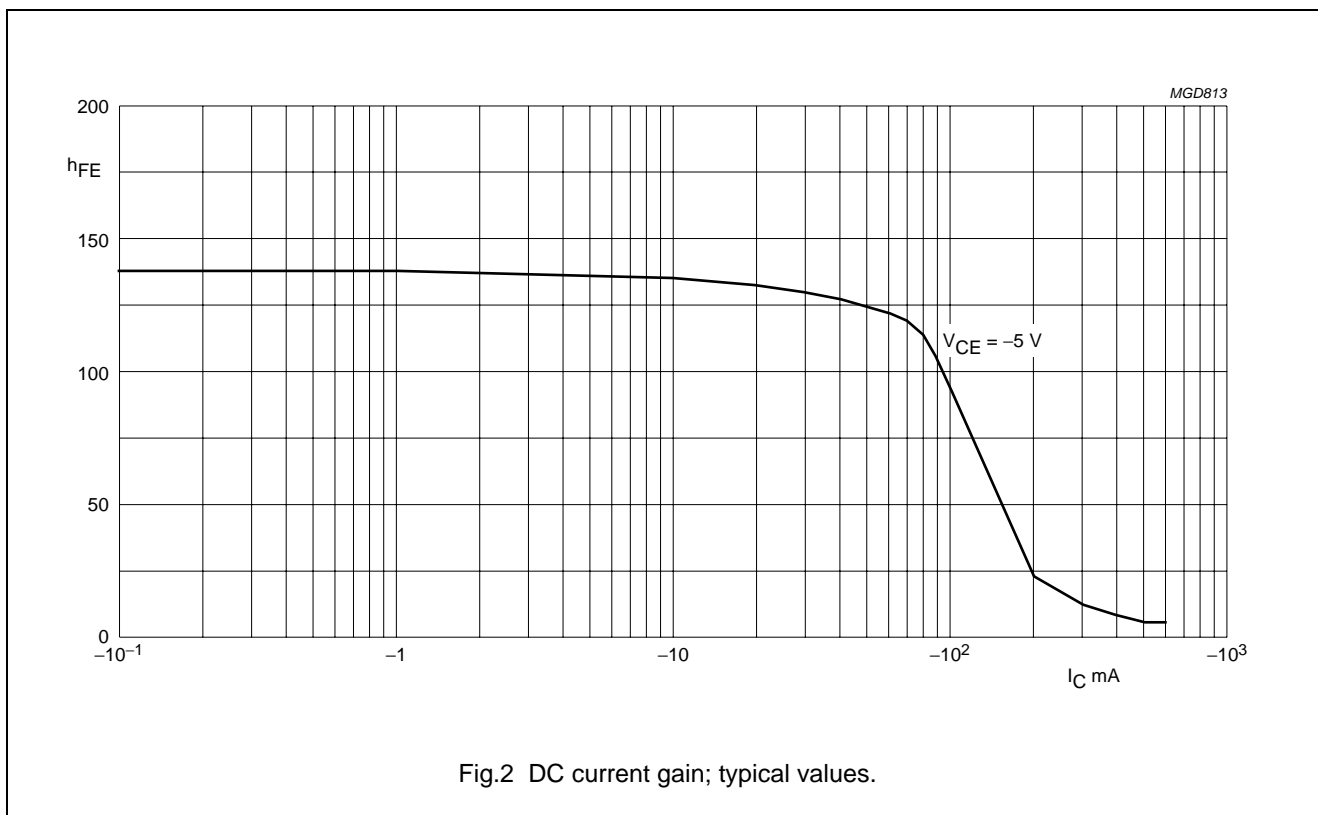
SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$I_{CBO}$	collector cut-off current	$I_E = 0; V_{CB} = -120\text{ V}$	–	–50	nA
		$I_E = 0; V_{CB} = -120\text{ V}; T_j = 150\text{ °C}$	–	–50	$\mu\text{A}$
$I_{EBO}$	emitter cut-off current	$I_C = 0; V_{EB} = -4\text{ V}$	–	–50	nA
$h_{FE}$	DC current gain	$V_{CE} = -5\text{ V}$ ; (see Fig.2) $I_C = -1\text{ mA}$	50	–	
		$I_C = -10\text{ mA}$	60	240	
		$I_C = -50\text{ mA}$ ; note 1	50	–	
$V_{CEsat}$	collector-emitter saturation voltage	$I_C = -10\text{ mA}; I_B = -1\text{ mA}$	–	–200	mV
		$I_C = -50\text{ mA}; I_B = -5\text{ mA}$ ; note 1	–	–500	mV
$V_{BEsat}$	base-emitter saturation voltage	$I_C = -10\text{ mA}; I_B = -1\text{ mA}$	–	–1	V
		$I_C = -50\text{ mA}; I_B = -5\text{ mA}$	–	–1	V
$C_c$	collector capacitance	$I_E = i_e = 0; V_{CB} = -10\text{ V}; f = 1\text{ MHz}$	–	6	pF
$f_T$	transition frequency	$I_C = -10\text{ mA}; V_{CE} = -10\text{ V}; f = 100\text{ MHz}$	100	300	MHz
F	noise figure	$I_C = -200\text{ }\mu\text{A}; V_{CE} = -5\text{ V}; R_S = 2\text{ k}\Omega$ $f = 10\text{ Hz to }15.7\text{ kHz}$	–	8	dB

## Note

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

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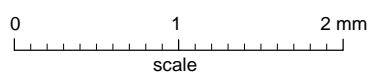
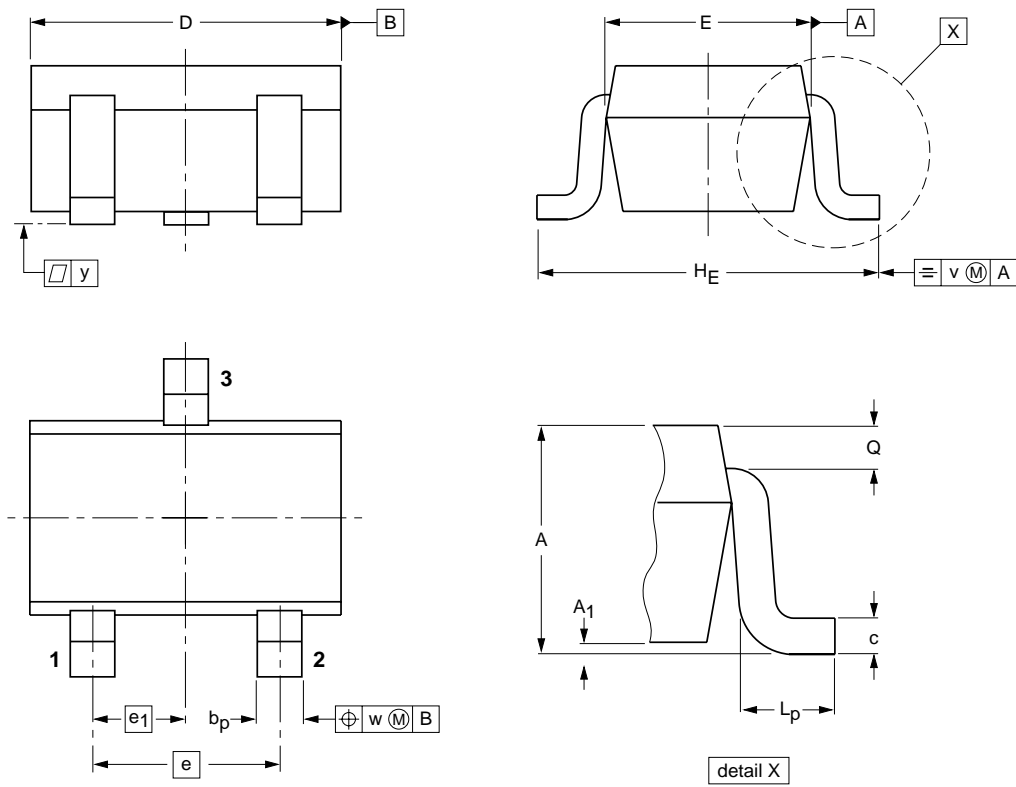
PNP high-voltage transistor

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PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT323



DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub> max	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	Q	v	w
mm	1.1 0.8	0.1	0.4 0.3	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.23 0.13	0.2	0.2

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT323			SC-70			97-02-28

## PNP high-voltage transistor

## PMST5401

## DATA SHEET STATUS

DOCUMENT STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

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For additional information please visit: **<http://www.nxp.com>**

For sales offices addresses send e-mail to: **[salesaddresses@nxp.com](mailto:salesaddresses@nxp.com)**

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