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Should be replaced with:

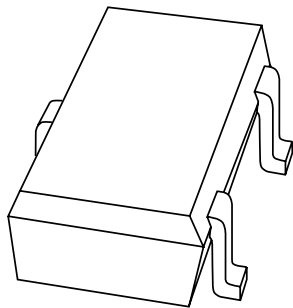
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Kind regards,

Team Nexperia

DATA SHEET



PMST5550; PMST5551 NPN high-voltage transistors

Product data sheet
Supersedes data of 1997 May 20

1999 Apr 29

NPN high-voltage transistors

PMST5550; PMST5551

FEATURES

- Low current (max. 300 mA)
- High voltage (max. 160 V).

APPLICATIONS

- Switching and amplification in high voltage applications such as telephony.

DESCRIPTION

NPN high-voltage transistor in a SOT323 plastic package.
PNP complement: PMST5401.

MARKING

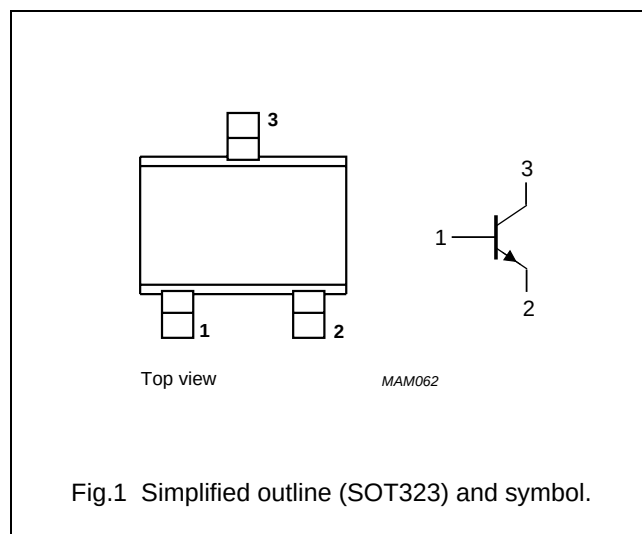
TYPE NUMBER	MARKING CODE ⁽¹⁾
PMST5550	*1F
PMST5551	*G3

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			
	PMST5550		—	160	V
	PMST5551		—	180	V
V_{CEO}	collector-emitter voltage	open base			
	PMST5550		—	140	V
	PMST5551		—	160	V
V_{EBO}	emitter-base voltage	open collector	—	6	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	$T_{amb} \leq 25\text{ °C}$; note 1	—	200	mW
T_{stg}	storage temperature		−65	+150	°C
T_j	junction temperature		—	150	°C
T_{amb}	operating ambient temperature		−65	+150	°C

Note

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

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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

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

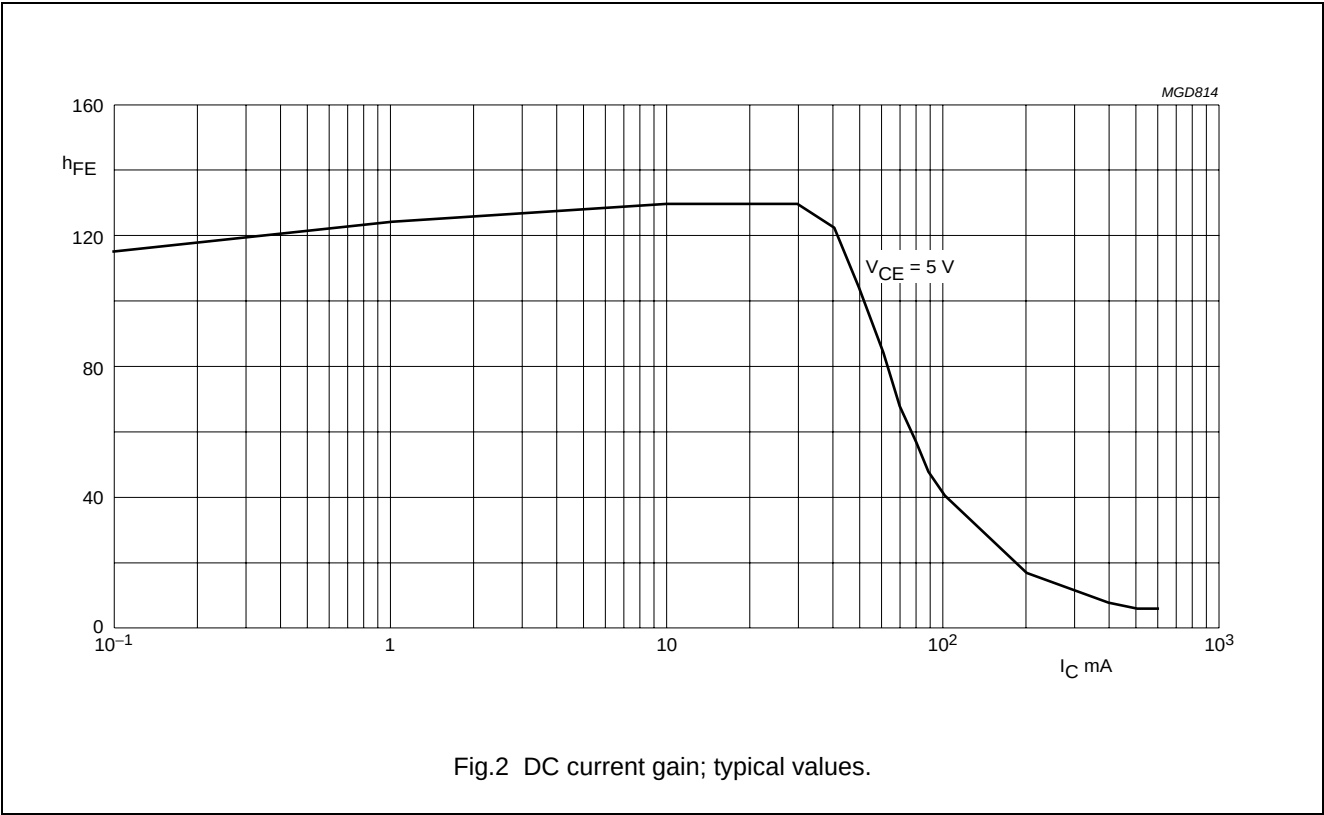
SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector cut-off current PMST5550	$I_E = 0; V_{CB} = 100\text{ V}$	—	100	nA
		$I_E = 0; V_{CB} = 100\text{ V}; T_{amb} = 100\text{ }^{\circ}\text{C}$	—	100	μA
	collector cut-off current PMST5551	$I_E = 0; V_{CB} = 120\text{ V}$	—	50	nA
		$I_E = 0; V_{CB} = 120\text{ V}; T_{amb} = 100\text{ }^{\circ}\text{C}$	—	50	μA
I_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = 4\text{ V}$	—	50	nA
h_{FE}	DC current gain PMST5550	$V_{CE} = 5\text{ V}$; (see Fig.2)			
		$I_C = 1\text{ mA}$	60	—	
		$I_C = 10\text{ mA}$	60	250	
		$I_C = 50\text{ mA}$; note 1	20	—	
	DC current gain PMST5551	$V_{CE} = 5\text{ V}$; (see Fig.2)			
		$I_C = 1\text{ mA}$	80	—	
		$I_C = 10\text{ mA}$	80	250	
		$I_C = 50\text{ mA}$; note 1	30	—	
V_{CEsat}	collector-emitter saturation voltage	$I_C = 10\text{ mA}; I_B = 1\text{ mA}$	—	150	mV
		$I_C = 50\text{ mA}; I_B = 5\text{ mA}$; note 1			
	collector-emitter saturation voltage PMST5550		—	250	mV
			—	200	mV
V_{BEsat}	base-emitter saturation voltage	$I_C = 10\text{ mA}; I_B = 1\text{ mA}$	—	1	V
		$I_C = 50\text{ mA}; I_B = 5\text{ mA}$; note 1			
	base-emitter saturation voltage PMST5550		—	1.2	V
			—	1	V
C_c	collector capacitance	$I_E = I_E = 0; V_{CB} = 10\text{ V}; f = 1\text{ MHz}$	—	6	pF
C_e	emitter capacitance	$I_C = I_C = 0; V_{EB} = 0.5\text{ V}; f = 1\text{ MHz}$	—	30	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 PMST5551	$I_C = 200\text{ }\mu\text{A}; V_{CE} = 5\text{ V}; R_S = 2\text{ k}\Omega$; $f = 10\text{ Hz to }15.7\text{ kHz}$	—	8	dB

Note

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

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PMST5550; PMST5551



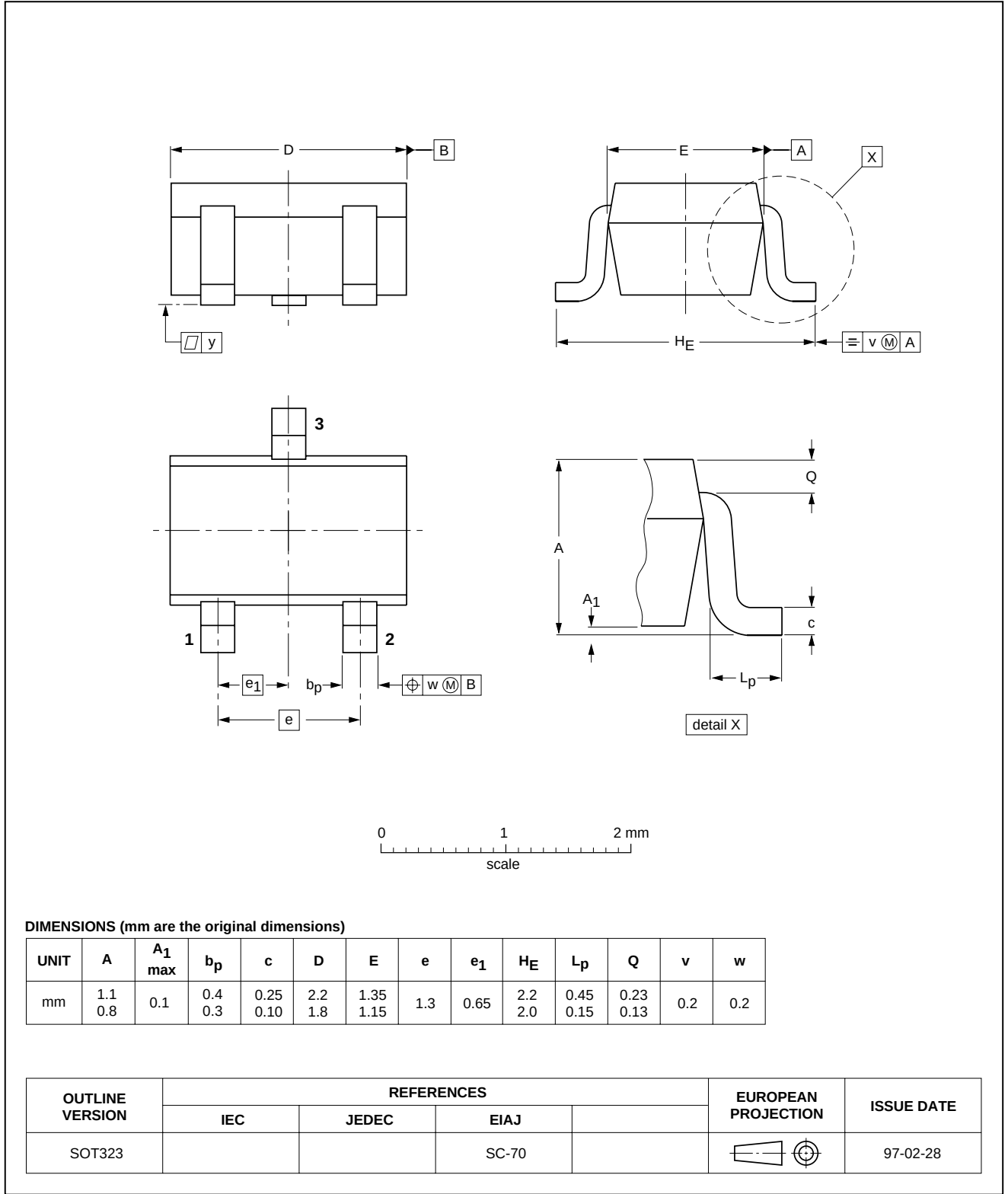
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PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT323



NPN high-voltage transistors

PMST5550; PMST5551

DATA SHEET STATUS

DOCUMENT STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	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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NXP Semiconductors

Customer notification

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Contact information

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