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Should be replaced with:

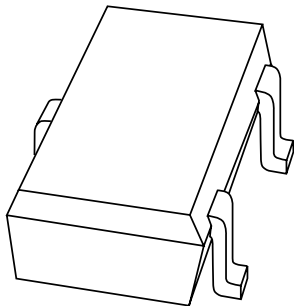
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If you have any questions related to the data sheet, please contact our nearest sales office via e-mail or telephone (details via [salesaddresses@nexperia.com](mailto:salesaddresses@nexperia.com)). Thank you for your cooperation and understanding,

Kind regards,

Team Nexperia

# DATA SHEET



## **PMSTA42; PMSTA43** NPN high-voltage transistors

Product data sheet  
Supersedes data of 1997 Jun 19

1999 May 21

# NPN high-voltage transistors

# PMSTA42; PMSTA43

### FEATURES

- High current (max. 500 mA)
- High voltage (max. 200 V).

### APPLICATIONS

- High-voltage switching in telephony applications.

### DESCRIPTION

NPN high-voltage transistor in a SOT323 plastic package.  
PNP complements: PMSTA92 and PMSTA93.

### MARKING

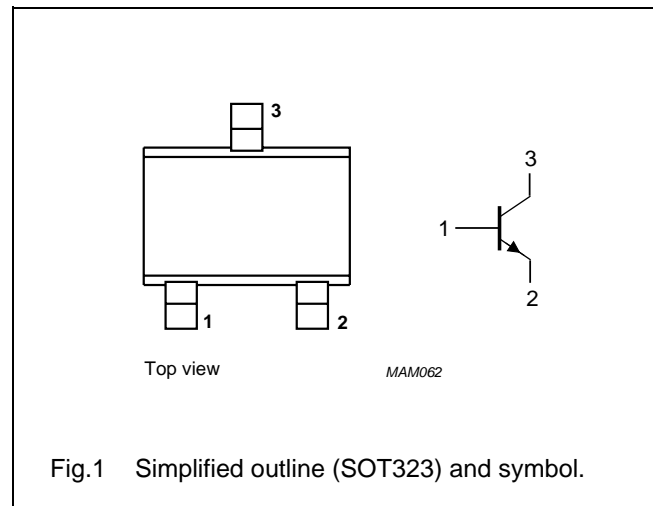
TYPE NUMBER	MARKING CODE <sup>(1)</sup>
PMSTA42	*1D
PMSTA43	*1E

### 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 <sub>CBO</sub>	collector-base voltage	open emitter			
	PMSTA42		–	300	V
	PMSTA43		–	200	V
V <sub>CEO</sub>	collector-emitter voltage	open base			
	PMSTA42		–	300	V
	PMSTA43		–	200	V
V <sub>EBO</sub>	emitter-base voltage	open collector	–	6	V
I <sub>C</sub>	collector current (DC)		–	100	mA
I <sub>CM</sub>	peak collector current		–	200	mA
I <sub>BM</sub>	peak base current		–	100	mA
P <sub>tot</sub>	total power dissipation	T <sub>amb</sub> ≤ 25 °C; note 1	–	200	mW
T <sub>stg</sub>	storage temperature		–65	+150	°C
T <sub>j</sub>	junction temperature		–	150	°C
T <sub>amb</sub>	operating ambient temperature		–65	+150	°C

### Note

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

## NPN high-voltage transistors

## PMSTA42; PMSTA43

## 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				
	PMSTA42	$I_E = 0; V_{CB} = 200\text{ V}$	–	100	nA
	PMSTA43	$I_E = 0; V_{CB} = 160\text{ V}$	–	100	nA
$I_{EBO}$	emitter cut-off current				
	PMSTA42	$I_C = 0; V_{EB} = 6\text{ V}$	–	100	nA
	PMSTA43	$I_C = 0; V_{EB} = 4\text{ V}$	–	100	nA
$h_{FE}$	DC current gain	$I_C = 1\text{ mA}; V_{CE} = 10\text{ V}$	25	–	
		$I_C = 10\text{ mA}; V_{CE} = 10\text{ V}$	40	–	
		$I_C = 30\text{ mA}; V_{CE} = 10\text{ V}; \text{note 1}$	40	–	
$V_{CEsat}$	collector-emitter saturation voltage	$I_C = 20\text{ mA}; I_B = 2\text{ mA}$	–	500	mV
$C_{re}$	feedback capacitance	$I_C = i_c = 0; V_{CB} = 20\text{ V}; f = 1\text{ MHz}$			
	PMSTA42		–	3	pF
	PMSTA43		–	4	pF
$f_T$	transition frequency	$I_C = 10\text{ mA}; V_{CE} = 20\text{ V}; f = 100\text{ MHz}$	50	–	MHz

## Note

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

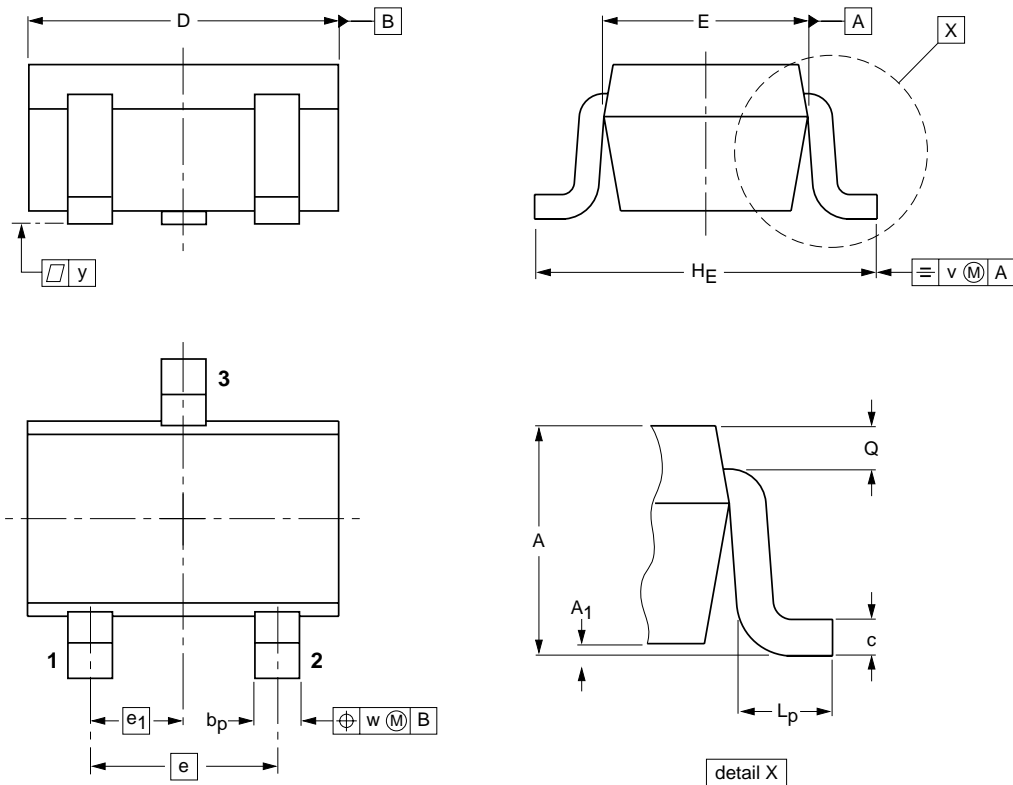
NPN high-voltage transistors

PMSTA42; PMSTA43

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

## NPN high-voltage transistors

## PMSTA42; PMSTA43

## 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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# ***NXP Semiconductors***

## **Customer notification**

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## **Contact information**

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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