**Product data sheet** 

# 1. General description

PNP high-voltage transistor in a very small SOT323 (SC-70) Surface-Mounted Device (SMD) plastic package.

NPN complement: PMSTA42

#### 2. Features and benefits

- Very small package
- High voltage
- AEC-Q101 qualified

## 3. Applications

· Primarily intended for use in telephony and professional communication equipment.

#### 4. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Тур	Max	Unit
V <sub>CEO</sub>	collector-emitter voltage	open base	-	-	-300	V
I <sub>C</sub>	collector current		-	-	-100	mA
h <sub>FE</sub>	DC current gain	V <sub>CE</sub> = -10 V; I <sub>C</sub> = -30 mA	30	-	-	

# 5. Pinning information

**Table 2. Pinning information** 

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	В	base	□ 3	C
2	Е	emitter		в
3	С	collector		, k
			SC-70 (SOT323)	sym132



#### PNP high-voltage transistor

# 6. Ordering information

#### **Table 3. Ordering information**

Type number	Package	e					
	Name	Description	Version				
PMSTA92	SC-70	plastic surface-mounted package; 3 leads	SOT323				

## 7. Marking

#### Table 4. Marking codes

Type number	Marking code[1]
PMSTA92	%2D

<sup>[1] % =</sup> placeholder for manufacturing site code

# 8. Limiting values

#### Table 5. Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134).

Symbol	Parameter	Conditions		Min	Max	Unit
V <sub>CBO</sub>	collector-base voltage	open emitter		-	-300	V
V <sub>CEO</sub>	collector-emitter voltage	open base		-	-300	V
V <sub>EBO</sub>	emitter-base voltage	open collector		-	-5	V
I <sub>C</sub>	collector current			-	-100	mA
I <sub>CM</sub>	peak collector current	single pulse; t <sub>p</sub> ≤ 1 ms		-	-200	mA
I <sub>BM</sub>	peak base current			-	-100	mA
P <sub>tot</sub>	total power dissipation	T <sub>amb</sub> ≤ 25 °C	[1]	-	200	mW
T <sub>j</sub>	junction temperature			-	150	°C
T <sub>amb</sub>	ambient temperature			-65	150	°C
T <sub>stg</sub>	storage temperature			-65	150	°C

<sup>[1]</sup> Refer to SOT323 (SC-70) standard mounting conditions.

#### 9. Thermal characteristics

#### **Table 6. Thermal characteristics**

Symbol	Parameter	Conditions		Min	Тур	Max	Unit
$R_{th(j-a)}$	thermal resistance from junction to ambient	in free air	[1]	-	-	625	K/W

[1] Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.

## PNP high-voltage transistor

# 10. Characteristics

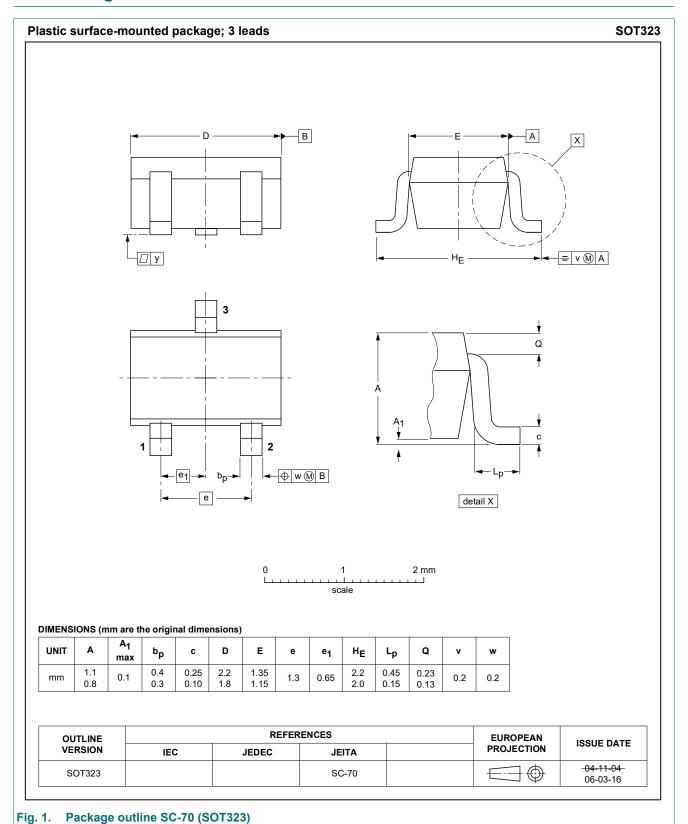
#### **Table 7. Characteristics**

 $T_{amb}$  = 25 °C, unless otherwise specified

Symbol	Parameter	Conditions	Min	Тур	Max	Unit
I <sub>CBO</sub>	collector-base cut-off current	V <sub>CB</sub> = -200 V; I <sub>E</sub> = 0 A	-	-	-100	nA
I <sub>EBO</sub>	emitter-base cut-off current	V <sub>EB</sub> = -3 V; I <sub>C</sub> = 0 A	-	-	-100	nA
h <sub>FE</sub>	DC current gain	V <sub>CE</sub> = -10 V; I <sub>C</sub> = -1 mA	40	-	-	
		V <sub>CE</sub> = -10 V; I <sub>C</sub> = -10 mA	40	-	-	
		V <sub>CE</sub> = -10 V; I <sub>C</sub> = -30 mA	30	-	-	
V <sub>CEsat</sub>	collector-emitter saturation voltage	$I_C$ = -20 mA; $I_B$ = -2 mA; pulsed; $t_p$ ≤ 300 μs; δ ≤ 0.02; $T_{amb}$ = 25 °C	-	-	-250	mV
V <sub>BEsat</sub>	base-emitter saturation voltage		-	-	-900	mV
C <sub>c</sub>	collector capacitance	$V_{CB} = -20 \text{ V}; I_E = 0 \text{ A}; i_e = 0 \text{ A};$ f = 1 MHz	-	1.9	3.5	pF
Ce	emitter capacitance	$V_{EB} = -5 \text{ V}; I_C = 0 \text{ A}; i_C = 0 \text{ A}; f = 1 \text{ MHz}$	-	20	-	pF
f <sub>T</sub>	transition frequency	V <sub>CE</sub> = -20 V; I <sub>C</sub> = -10 mA; f = 100 MHz	50	-	-	MHz

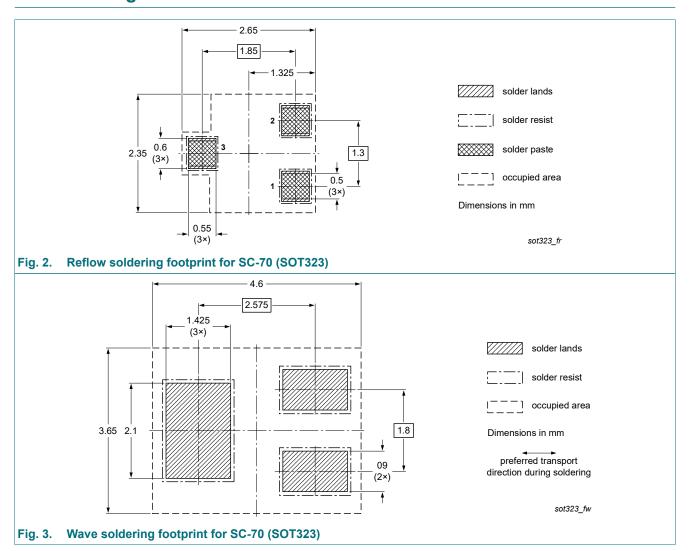
#### **PNP** high-voltage transistor

# 11. Package outline



#### PNP high-voltage transistor

# 12. Soldering



## PNP high-voltage transistor

# 13. Revision history

#### **Table 8. Revision history**

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
PMSTA92 v.4	20190516	Product data sheet	-	PMSTA92 v.3
Modifications:	The format of the Nexperia.	ing code corrected this data sheet has been rede we been adapted to the new o	. ,	
PMSTA92 v.3	20010220	Product data sheet	-	PMSTA92_93 v.2
PMSTA92_93 v.2	19990601	Product data sheet	-	PMSTA92_93 v.1
PMSTA92_93 v.1	19961209	Product data sheet	-	-

#### PNP high-voltage transistor

## 14. Legal information

#### **Data sheet status**

Document status [1][2]	Product status [3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

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PMSTA92

#### PNP high-voltage transistor

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