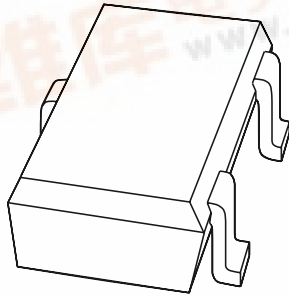


**DISCRETE SEMICONDUCTORS**

# DATA SHEET



## **PMSTA05; PMSTA06** NPN general purpose transistors

Product specification  
Supersedes data of 1997 Jun 16

1999 Apr 29

# NPN general purpose transistors

# PMSTA05; PMSTA06

### FEATURES

- High current (max. 500 mA)
- Low voltage (max. 80 V).

### APPLICATIONS

- Primarily intended for telephony and professional communication equipment.

### DESCRIPTION

NPN transistor in a SOT323 plastic package.  
PNP complements: PMSTA55 and PMSTA56.

### MARKING

TYPE NUMBER	MARKING CODE <sup>(1)</sup>
PMSTA05	*1H
PMATA06	*1G

### Note

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

### PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector

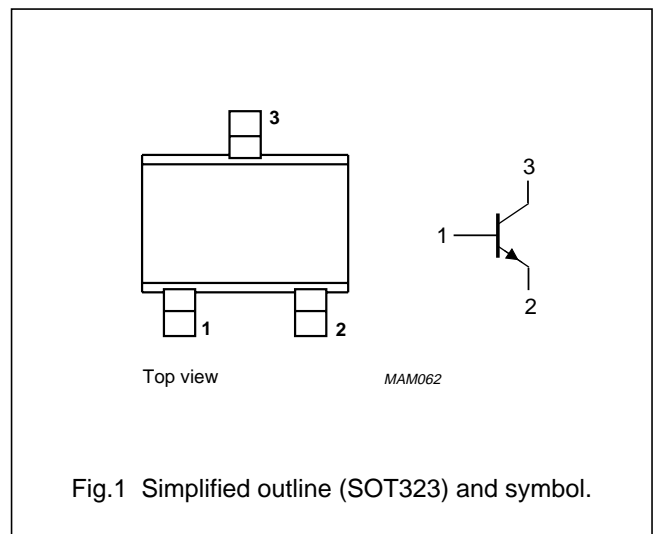


Fig.1 Simplified outline (SOT323) and symbol.

### 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			
	PMSTA05		–	60	V
	PMSTA06		–	80	V
V <sub>CEO</sub>	collector-emitter voltage	open base			
	PMSTA05		–	60	V
	PMSTA06		–	80	V
V <sub>EBO</sub>	emitter-base voltage	open collector	–	4	V
I <sub>C</sub>	collector current (DC)		–	500	mA
I <sub>CM</sub>	peak collector current		–	500	mA
I <sub>BM</sub>	peak base current		–	500	mA
P <sub>tot</sub>	total power dissipation	T <sub>amb</sub> ≤ 25 °C	–	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

## NPN general purpose transistors

## PMSTA05; PMSTA06

## 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				
	PMSTA05	$I_E = 0; V_{CB} = 60\text{ V}$	–	100	nA
	PMSTA06	$I_E = 0; V_{CB} = 80\text{ V}$	–	100	nA
$I_{EBO}$	emitter cut-off current	$I_C = 0; V_{EB} = 3\text{ V}$	–	500	nA
$h_{FE}$	DC current gain	$I_C = 10\text{ mA}; V_{CE} = 2\text{ V}$	50	–	
		$I_C = 100\text{ mA}; V_{CE} = 1\text{ V}; \text{note 1}$	50	–	
$V_{CEsat}$	collector-emitter saturation voltage	$I_C = 100\text{ mA}; I_B = 10\text{ mA}; \text{note 1}$	–	250	mV
$V_{BEsat}$	base-emitter saturation voltage	$I_C = 100\text{ mA}; I_B = 10\text{ mA}; \text{note 1}$	–	900	mV
$V_{BE}$	base-emitter voltage	$I_C = 100\text{ mA}; V_{CE} = 1\text{ V}$	–	1.2	V
$f_T$	transition frequency	$I_C = 10\text{ mA}; V_{CE} = 2\text{ V}; f = 100\text{ MHz}$	100	–	MHz

## Note

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

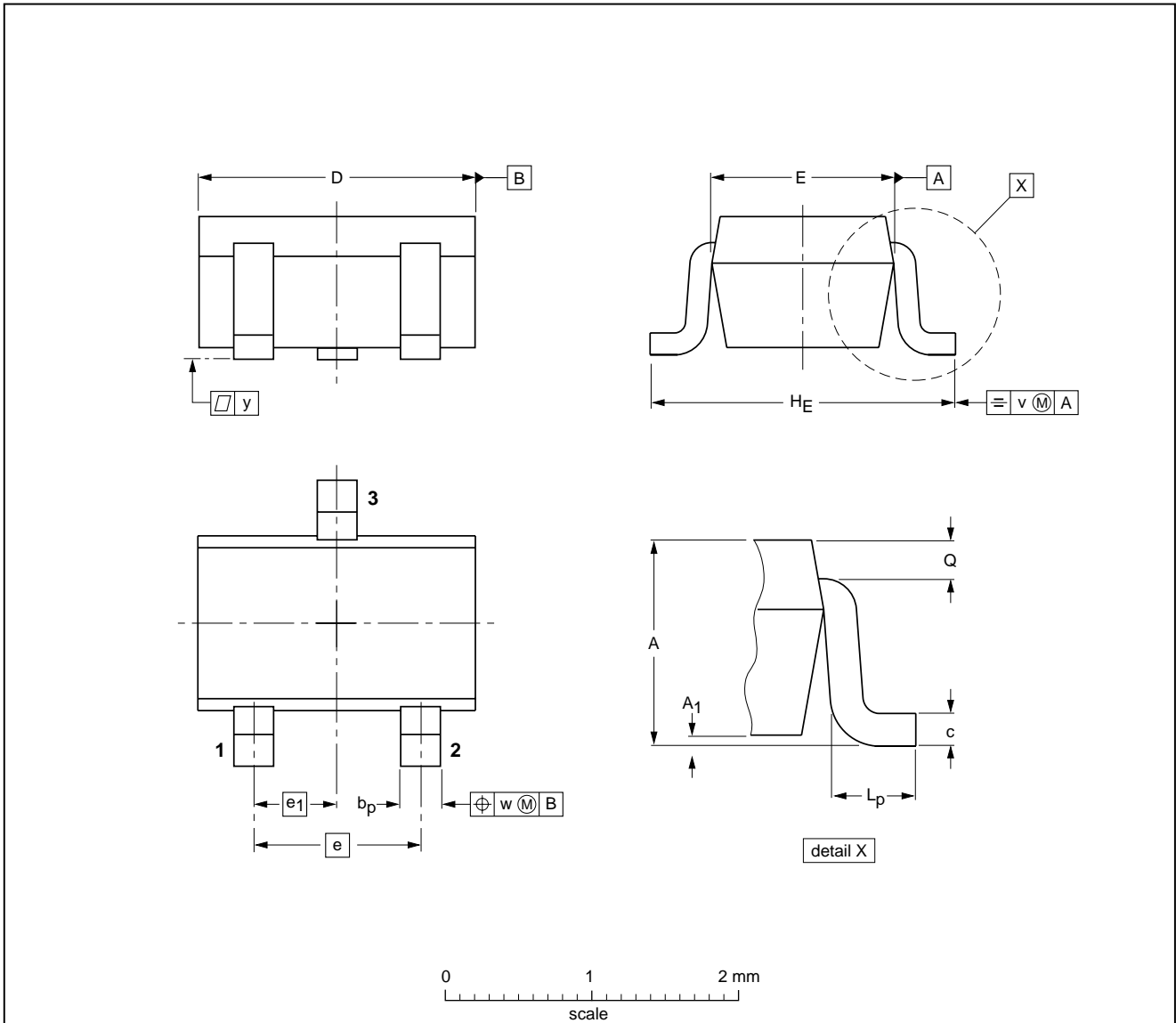
NPN general purpose transistors

PMSTA05; PMSTA06

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 general purpose transistors

## PMSTA05; PMSTA06

**DEFINITIONS**

<b>Data Sheet Status</b>	
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.
<b>Limiting values</b>	
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.	
<b>Application information</b>	
Where application information is given, it is advisory and does not form part of the specification.	

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NPN general purpose transistors

PMSTA05; PMSTA06

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**NOTES**

NPN general purpose transistors

PMSTA05; PMSTA06

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**NOTES**

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