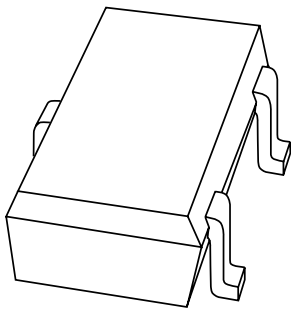


# DATA SHEET



## **PMST5088; PMST5089** NPN general purpose transistors

Product data sheet  
Supersedes data of 1997 May 22

1999 Apr 22

# NPN general purpose transistors

# PMST5088; PMST5089

### FEATURES

- Low current (max. 100 mA)
- Low voltage (max. 30 V).

### APPLICATIONS

- Low-noise input stages in audio equipment.

### DESCRIPTION

NPN transistor in a SC-70; SOT323 plastic package.

### MARKING

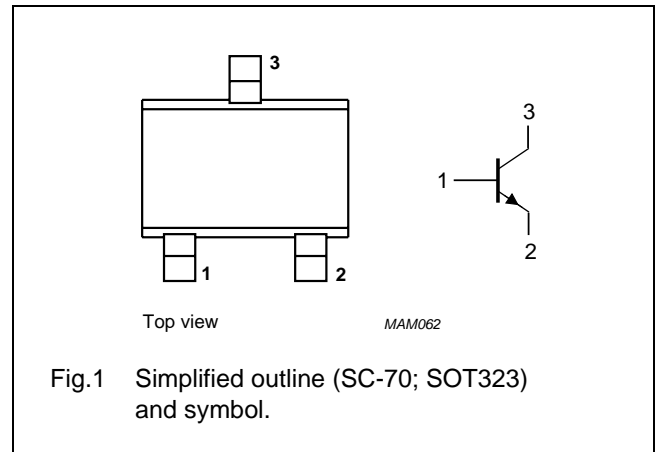
TYPE NUMBER	MARKING CODE <sup>(1)</sup>
PMST5088	*1Q
PMST5089	*1R

### 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			
	PMST5088		-	35	V
	PMST5089		-	30	V
V <sub>CEO</sub>	collector-emitter voltage	open base			
	PMST5088		-	30	V
	PMST5089		-	25	V
V <sub>EBO</sub>	emitter-base voltage	open collector	-	4.5	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 general purpose transistors

## PMST5088; PMST5089

## 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	$I_E = 0; V_{CB} = 20\text{ V}$	–	50	nA
		$I_E = 0; V_{CB} = 20\text{ V}; T_j = 150\text{ °C}$	–	10	$\mu\text{A}$
$I_{EBO}$	emitter cut-off current	$I_C = 0; V_{EB} = 3\text{ V}$	–	50	nA
		$I_C = 0; V_{EB} = 4.5\text{ V}$	–	100	nA
$h_{FE}$	DC current gain PMST5088	$V_{CE} = 5\text{ V}$ $I_C = 0.1\text{ mA}$	300	900	
		$I_C = 1\text{ mA}$	350	–	
		$I_C = 10\text{ mA}$	300	–	
	DC current gain PMST5089	$V_{CE} = 5\text{ V}$ $I_C = 0.1\text{ mA}$	400	1200	
		$I_C = 1\text{ mA}$	450	–	
		$I_C = 10\text{ mA}$	400	–	
$V_{CEsat}$	collector-emitter saturation voltage	$I_C = 10\text{ mA}; I_B = 1\text{ mA}$	–	500	mV
$V_{BE}$	base-emitter voltage	$I_C = 10\text{ mA}; V_{CE} = 5\text{ V}$	–	800	mV
$C_c$	collector capacitance	$I_E = I_C = 0; V_{CB} = 5\text{ V}; f = 1\text{ MHz}$	–	4	pF
$C_e$	emitter capacitance	$I_C = I_E = 0; V_{EB} = 0.5\text{ V}; f = 1\text{ MHz}$	–	12	pF
$f_T$	transition frequency	$I_C = 10\text{ mA}; V_{CE} = 5\text{ V}; f = 100\text{ MHz}$	100	–	MHz
F	noise figure PMST5088 PMST5089	$I_C = 100\text{ }\mu\text{A}; V_{CE} = 5\text{ V}; R_S = 1\text{ k}\Omega$ $f = 10\text{ Hz to }15.7\text{ kHz}$	–	3	dB
			–	2	dB

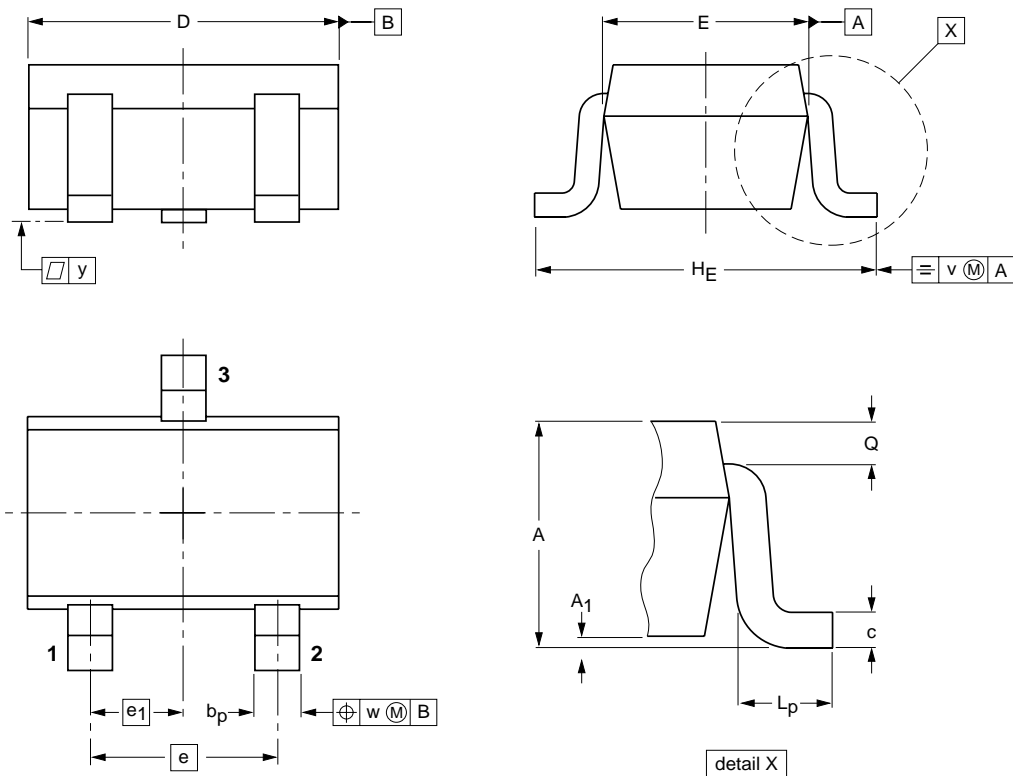
NPN general purpose transistors

PMST5088; PMST5089

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

## PMST5088; PMST5089

## 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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