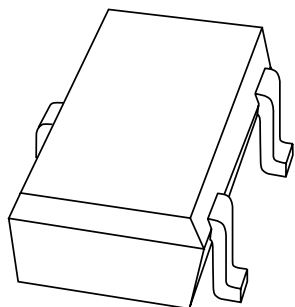


DATA SHEET



PMST6428; PMST6429 NPN general purpose transistors

Product specification
Supersedes data of July 1994
File under Discrete Semiconductors, SC04

1997 Jun 12

NPN general purpose transistors

PMST6428; PMST6429

FEATURES

- Low current (max. 100 mA)
- Low voltage (max. 50 V).

APPLICATIONS

- General purpose switching and amplification in e.g. telephony and professional communication equipment.

DESCRIPTION

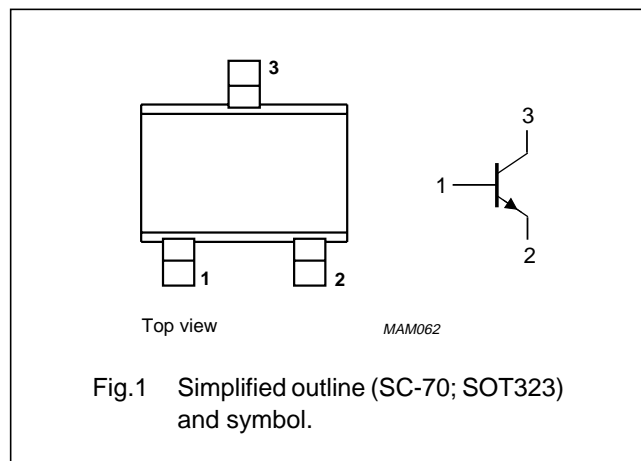
NPN transistor in an SC-70; SOT323 plastic package.

MARKING

TYPE NUMBER	MARKING CODE
PMST6428	t1K
PMST6429	t1L

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector



QUICK REFERENCE

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT	
V_{CBO}	collector-base voltage	open emitter				
	PMST6428		–	60	V	
	PMST6429		–	55	V	
V_{CEO}	collector-emitter voltage	open base				
	PMST6428		–	50	V	
	PMST6429		–	45	V	
I_{CM}	peak collector current		–	200	mA	
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ }^{\circ}\text{C}$	–	200	mW	
h_{FE}	DC current gain	PMST6428	$I_C = 0.1\text{ mA}; V_{CE} = 5\text{ V}$	250	650	
			$I_C = 1\text{ mA}; V_{CE} = 5\text{ V}$	250	–	
h_{FE}	DC current gain	PMST6429	$I_C = 0.1\text{ mA}; V_{CE} = 5\text{ V}$	500	1250	
			$I_C = 1\text{ mA}; V_{CE} = 5\text{ V}$	500	–	
f_T	transition frequency	$I_C = 1\text{ mA}; V_{CE} = 5\text{ V}; f = 100\text{ MHz}$	100	700	MHz	

NPN general purpose transistors

PMST6428; PMST6429

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			
	PMST6428		–	60	V
	PMST6429		–	55	V
V _{CEO}	collector-emitter voltage	open base			
	PMST6428		–	50	V
	PMST6429		–	45	V
V _{EBO}	emitter-base voltage	open collector	–	6	V
I _C	collector current (DC)		–	100	mA
I _{CM}	peak collector current		–	200	mA
I _{BM}	peak base current		–	100	mA
P _{tot}	total power dissipation	T _{amb} ≤ 25 °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.

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.

NPN general purpose transistors

PMST6428; PMST6429

CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector cut-off current	$I_E = 0; V_{CB} = 30 \text{ V}$	–	10	nA
		$I_E = 0; V_{CB} = 30 \text{ V}; T_j = 150 \text{ }^\circ\text{C}$	–	10	μA
I_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = 5 \text{ V}$	–	10	nA
h_{FE}	DC current gain PMST6428	$V_{CE} = 5 \text{ V}$			
		$I_C = 0.01 \text{ mA}$	250	–	
		$I_C = 0.1 \text{ mA}$	250	650	
		$I_C = 1 \text{ mA}$	250	–	
h_{FE}	DC current gain PMST6429	$V_{CE} = 5 \text{ V}$			
		$I_C = 0.01 \text{ mA}$	500	–	
		$I_C = 0.1 \text{ mA}$	500	1250	
		$I_C = 1 \text{ mA}$	500	–	
V_{CEsat}	collector-emitter saturation voltage	$I_C = 10 \text{ mA}; I_B = 0.5 \text{ mA}; \text{note 1}$	–	200	mV
		$I_C = 100 \text{ mA}; I_B = 5 \text{ mA}; \text{note 1}$	–	600	mV
V_{BE}	base-emitter voltage	$I_C = 1 \text{ mA}; V_{CE} = 5 \text{ V}$	560	660	mV
C_c	collector capacitance	$I_E = i_e = 0; V_{CB} = 10 \text{ V}; f = 1 \text{ MHz}$	–	3	pF
C_e	emitter capacitance	$I_C = i_c = 0; V_{EB} = 0.5 \text{ V}; f = 1 \text{ MHz}$	–	12	pF
f_T	transition frequency	$I_C = 1 \text{ mA}; V_{CE} = 5 \text{ V}; f = 100 \text{ MHz}$	100	700	MHz

Note

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

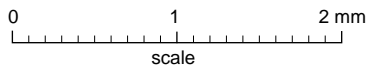
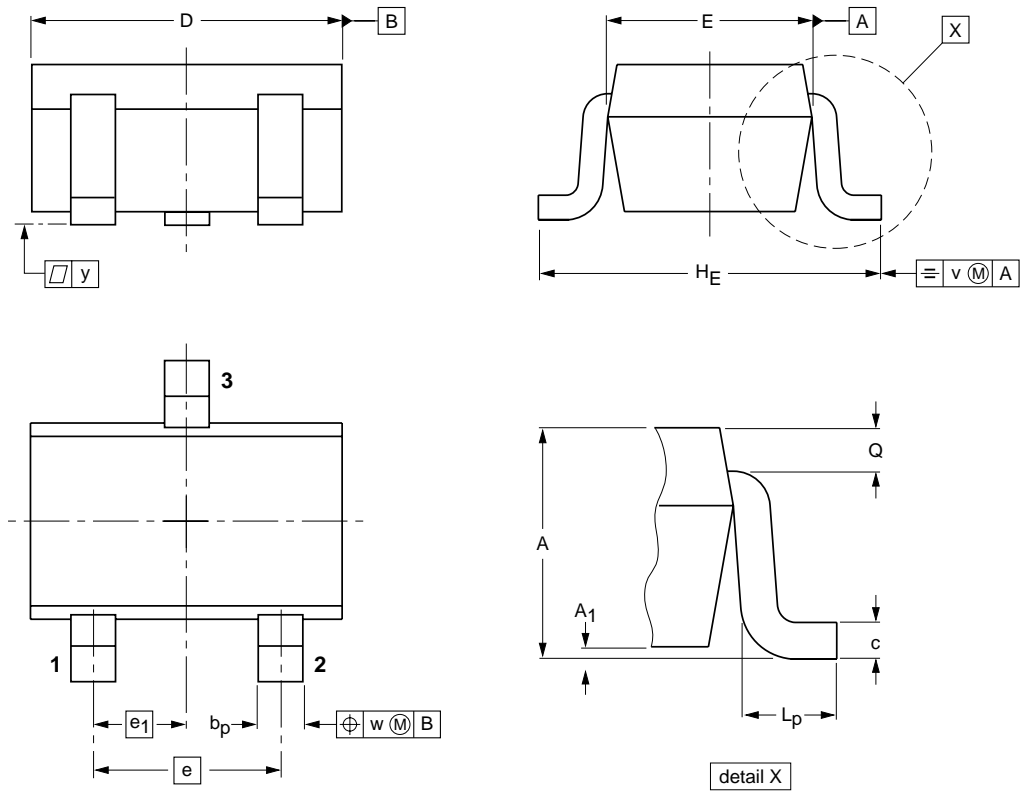
NPN general purpose transistors

PMST6428; PMST6429

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT323



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max	b _p	c	D	E	e	e ₁	H _E	L _p	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

PMST6428; PMST6429

DEFINITIONS

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

LIFE SUPPORT APPLICATIONS

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.

NPN general purpose transistors

PMST6428; PMST6429

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