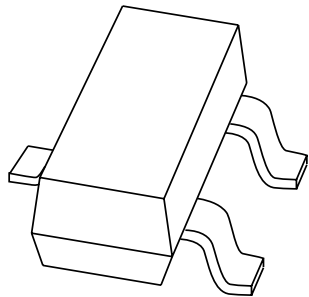


DATA SHEET



PMBT5088

NPN general purpose transistor

Product specification
Supersedes data of 1997 Jul 11

1999 Apr 15

NPN general purpose transistor

PMBT5088

FEATURES

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

APPLICATIONS

- Intended for low-noise input stages in audio equipment.

DESCRIPTION

NPN transistor in a SOT23 plastic package.

MARKING

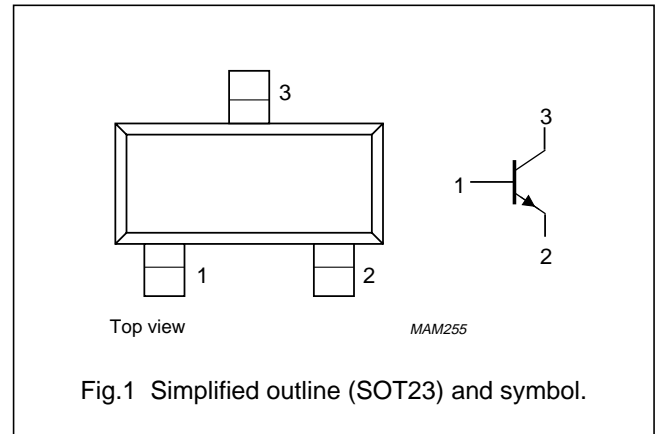
TYPE NUMBER	MARKING CODE ⁽¹⁾
PMBT5088	*1Q

Note

- * = p : 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 _{CBO}	collector-base voltage	open emitter	–	35	V
V _{CEO}	collector-emitter voltage	open base	–	30	V
V _{EBO}	emitter-base voltage	open collector	–	4.5	V
I _C	collector current (DC)		–	100	mA
I _{CM}	peak collector current		–	200	mA
I _{BM}	peak base current		–	200	mA
P _{tot}	total power dissipation	T _{amb} ≤ 25 °C; note 1	–	250	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.

NPN general purpose transistor

PMBT5088

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	500	K/W

Note

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

CHARACTERISTICS

$T_j = 25\text{ °C}$ 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_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = 3\text{ V}$	–	50	nA
h_{FE}	DC current gain	$I_C = 100\text{ }\mu\text{A}; V_{CE} = 5\text{ V}$	300	900	
		$I_C = 1\text{ mA}; V_{CE} = 5\text{ V}$	350	–	
		$I_C = 10\text{ mA}; V_{CE} = 5\text{ V}$	300	–	
V_{CEsat}	collector-emitter saturation voltage	$I_C = 10\text{ mA}; I_B = 1\text{ mA}$	–	500	mV
V_{BEsat}	base-emitter saturation voltage	$I_C = 10\text{ mA}; I_B = 1\text{ mA}$	–	800	mV
C_c	collector capacitance	$I_E = i_e = 0; V_{CB} = 5\text{ V}; f = 1\text{ MHz}$	–	4	pF
C_e	emitter capacitance	$I_C = i_c = 0; V_{EB} = 500\text{ mV}; f = 1\text{ MHz}$	–	10	pF
F	noise figure	$I_C = 100\text{ }\mu\text{A}; V_{CE} = 5\text{ V}; R_S = 1\text{ k}\Omega;$ $f = 10\text{ Hz to }15.7\text{ kHz}$	–	3	dB

NPN general purpose transistor

PMBT5088

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



NPN general purpose transistor

PMBT5088

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 transistor

PMBT5088

NOTES

NPN general purpose transistor

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NOTES

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