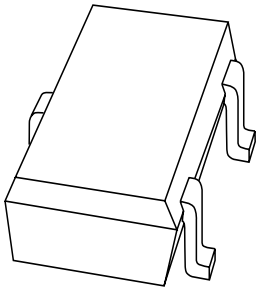
DATA SHEET



2PB1219A
PNP general purpose transistor

Product specification
Supersedes data of 1997 Mar 25

1999 Apr 12

Philips
Semiconductors

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PNP general purpose transistor 2PB1219A

FEATURES

- High current (max. 500 mA)
- Low voltage (max. 50 V)
- Low collector-emitter saturation voltage (max. 600 mV).

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

PNP transistor in a SOT323; SC70 plastic package.
NPN complement: 2PD1820A.

MARKING

TYPE NUMBER	MARKING CODE(1)
2PB1219AQ	D∗Q
2PB1219AR	D∗R
2PB1219AS	D∗S

Note

1. ∗ = - : Made in Hong Kong.
   ∗ = t : Made in Malaysia.

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector

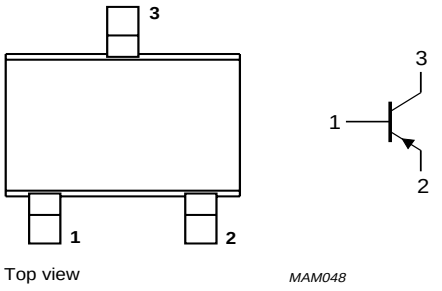


Fig.1 Simplified outline (SOT323; SC70) and symbol.

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	–	–60	V
V_{CEO}	collector-emitter voltage	open base	–	–50	V
V_{EBO}	emitter-base voltage	open collector	–	–5	V
I_C	collector current (DC)		–	–500	mA
I_{CM}	peak collector current		–	–1	A
I_{BM}	peak base current		–	–200	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °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. Refer to SOT323; SC70 standard mounting conditions.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j\text{-}a}$	thermal resistance from junction to ambient	note 1	625	K/W

Note

1. Refer to SOT323; SC70 standard mounting conditions.

CHARACTERISTICS

T_{amb} = 25 °C unless otherwise specified.

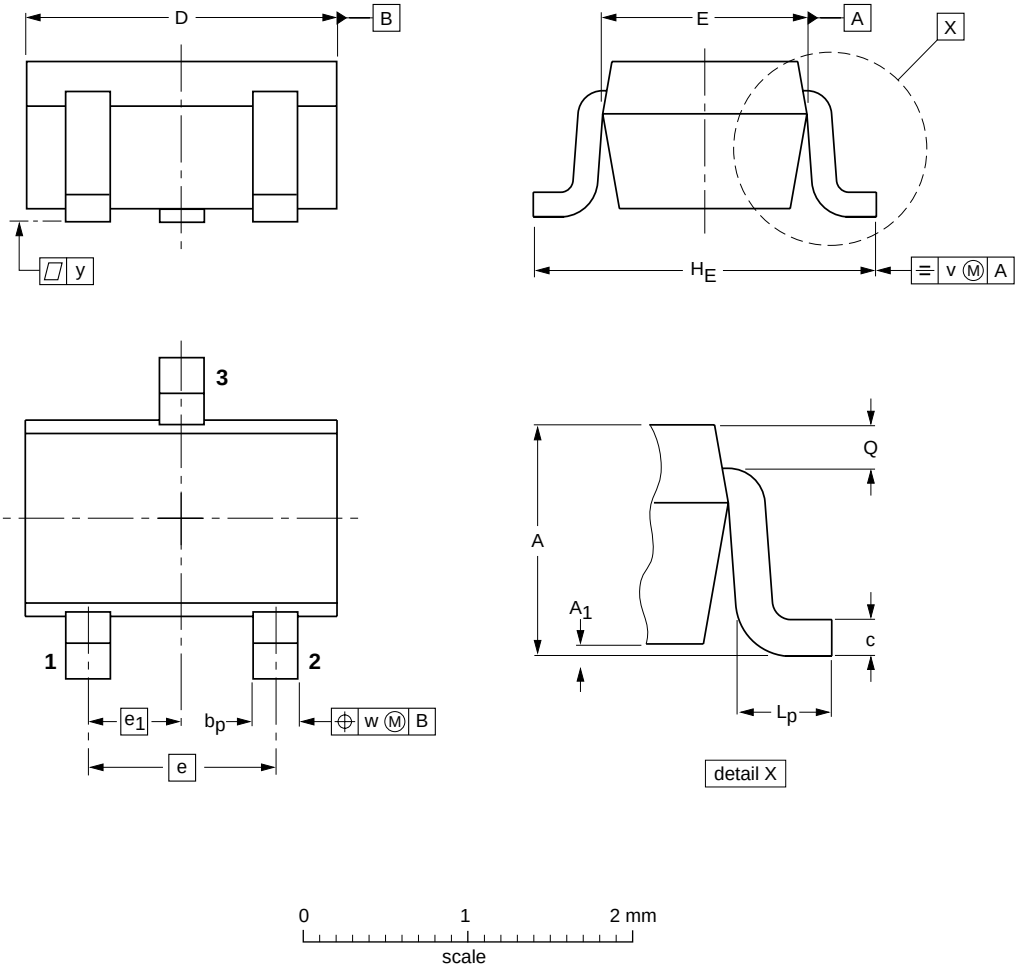
SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector cut-off current	I_E = 0; V_{CB} = –20 V	–	–100	nA
		I_E = 0; V_{CB} = –20 V; T_j = 150 °C	–	–5	µA
I_{EBO}	emitter cut-off current	I_C = 0; V_{EB} = –4 V	–	–100	nA
h_{FE}	DC current gain	I_C = –150 mA; V_{CE} = –10 V; note 1			
	2PB1219AQ		85	170	
	2PB1219AR		120	240	
	2PB1219AS		170	340	
h_{FE}	DC current gain	I_C = –500 mA; V_{CE} = –10 V; note 1	40	–	
V_{CEsat}	collector-emitter saturation voltage	I_C = –300 mA; I_B = –30 mA; note 1	–	–600	mV
V_{BEsat}	base-emitter saturation voltage	I_C = –300 mA; I_B = –30 mA; note 1	–	–1.5	V
C_c	collector capacitance	I_E = i_e = 0; V_{CB} = –10 V; f = 1 MHz	–	15	pF
f_T	transition frequency	I_C = 50 mA; V_{CE} = –10 V; f = 100 MHz; note 1			
	2PB1219AQ		100	–	MHz
	2PB1219AR		120	–	MHz
	2PB1219AS		140	–	MHz

Note

1. Pulse test: $t_p \leq 300$ µs; $\delta \leq 0.02$.

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

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.	

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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.

NOTES

NOTES

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