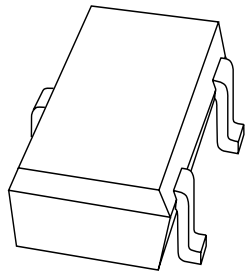


DATA SHEET



2PB1219A PNP general purpose transistor

Product specification
Supersedes data of 1997 Mar 25

1999 Apr 12

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

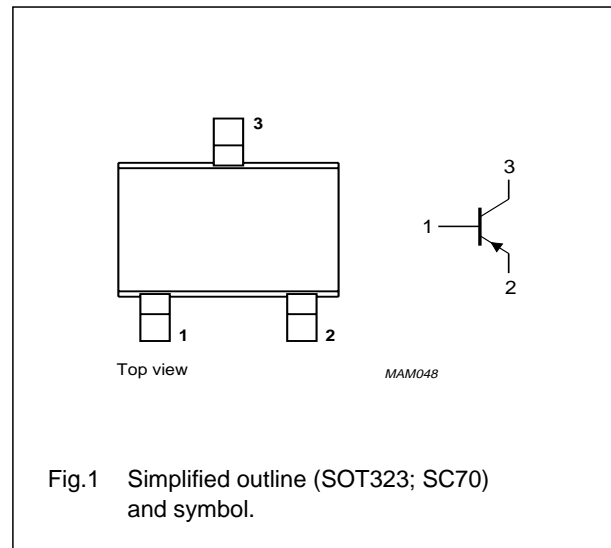
| TYPE NUMBER | MARKING CODE ⁽¹⁾ |
|-------------|-----------------------------|
| 2PB1219AQ | D*Q |
| 2PB1219AR | D*R |
| 2PB1219AS | D*S |

Note

- * = - : 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 | - | -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 | $T_{amb} \leq 25\text{ }^\circ\text{C}$; note 1 | - | 200 | mW |
| T_{stg} | storage temperature | | -65 | +150 | $^\circ\text{C}$ |
| T_j | junction temperature | | - | 150 | $^\circ\text{C}$ |
| T_{amb} | operating ambient temperature | | -65 | +150 | $^\circ\text{C}$ |

Note

1. Refer to SOT323; SC70 standard mounting conditions.

PNP general purpose transistor

2PB1219A

THERMAL CHARACTERISTICS

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

Note

1. Refer to SOT323; SC70 standard mounting conditions.

CHARACTERISTICS

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

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

Note

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

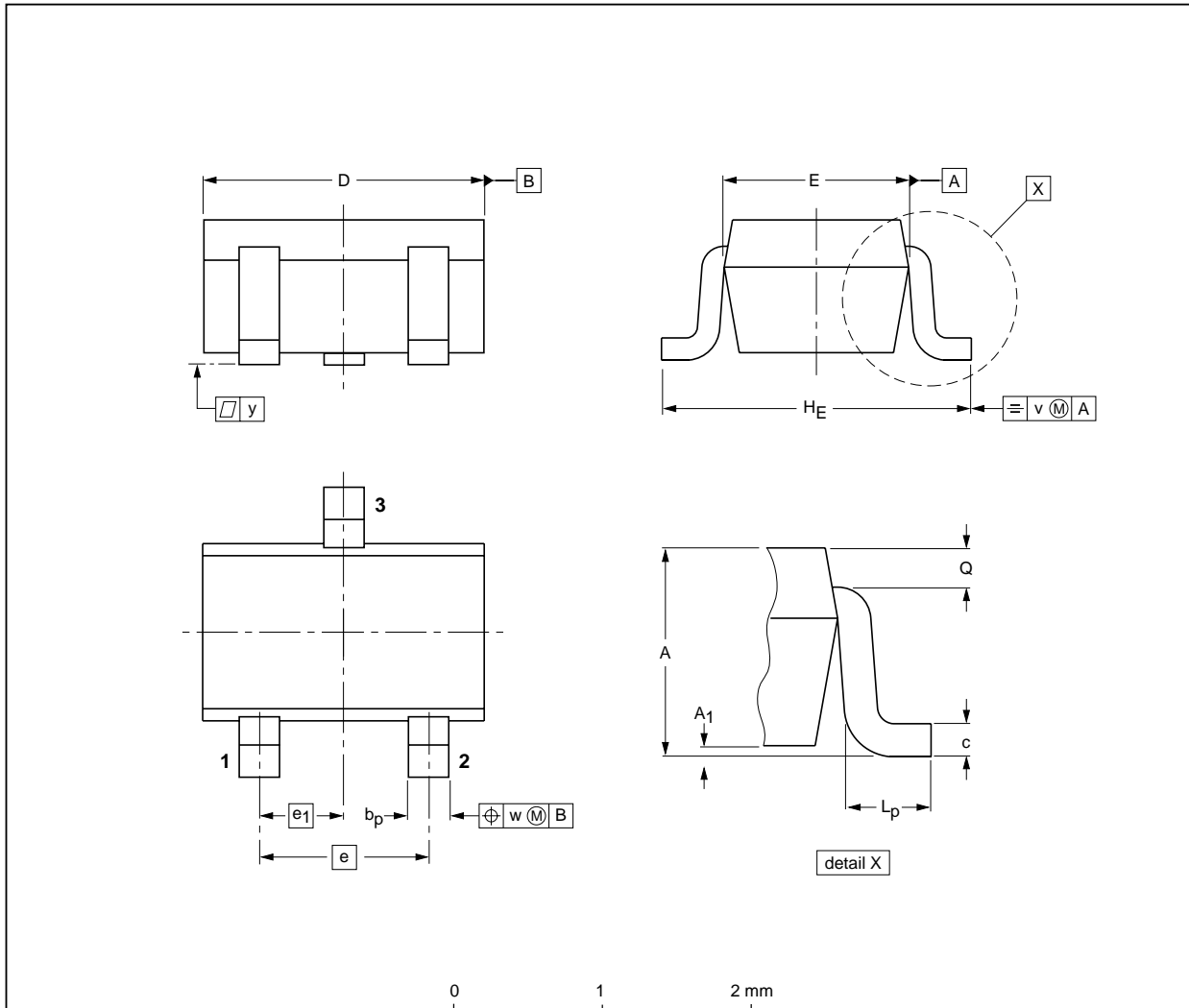
PNP general purpose transistor

2PB1219A

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 |

PNP general purpose transistor

2PB1219A

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.

PNP general purpose transistor

2PB1219A

NOTES

PNP general purpose transistor

2PB1219A

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Printed in The Netherlands

115002/00/03/pp8

Date of release: 1999 Apr 12

Document order number: 9397 750 05589

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