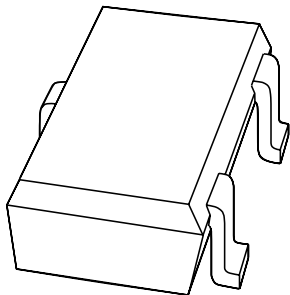


DATA SHEET



PMSTA05; PMSTA06 NPN general purpose transistors

Product specification
Supersedes data of 1997 Jun 16

1999 Apr 29

NPN general purpose transistors

PMSTA05; PMSTA06

FEATURES

- High current (max. 500 mA)
- Low voltage (max. 80 V).

APPLICATIONS

- Primarily intended for telephony and professional communication equipment.

DESCRIPTION

NPN transistor in a SOT323 plastic package.
PNP complements: PMSTA55 and PMSTA56.

MARKING

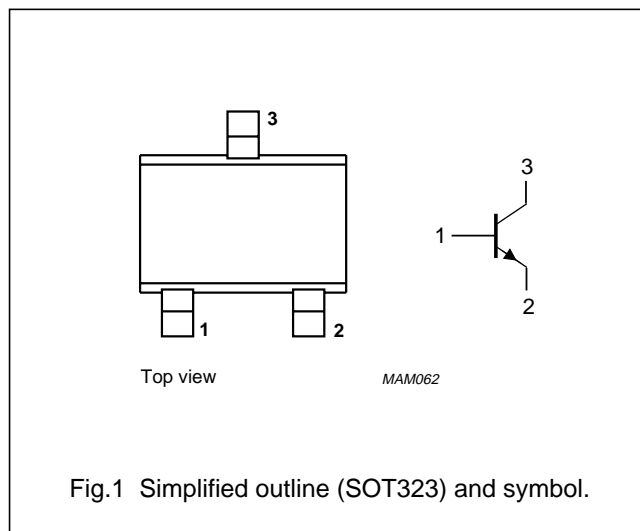
| TYPE NUMBER | MARKING CODE ⁽¹⁾ |
|-------------|-----------------------------|
| PMSTA05 | *1H |
| PMATA06 | *1G |

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 | | | |
| | PMSTA05 | | - | 60 | V |
| | PMSTA06 | | - | 80 | V |
| V _{CEO} | collector-emitter voltage | open base | | | |
| | PMSTA05 | | - | 60 | V |
| | PMSTA06 | | - | 80 | V |
| V _{EBO} | emitter-base voltage | open collector | - | 4 | V |
| I _C | collector current (DC) | | - | 500 | mA |
| I _{CM} | peak collector current | | - | 500 | mA |
| I _{BM} | peak base current | | - | 500 | mA |
| P _{tot} | total power dissipation | T _{amb} ≤ 25 °C | - | 200 | mW |
| T _{stg} | storage temperature | | -65 | +150 | °C |
| T _j | junction temperature | | - | 150 | °C |
| T _{amb} | operating ambient temperature | | -65 | +150 | °C |

NPN general purpose transistors

PMSTA05; PMSTA06

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 | | | | |
| | PMSTA05 | $I_E = 0; V_{CB} = 60\text{ V}$ | – | 100 | nA |
| | PMSTA06 | $I_E = 0; V_{CB} = 80\text{ V}$ | – | 100 | nA |
| I_{EBO} | emitter cut-off current | $I_C = 0; V_{EB} = 3\text{ V}$ | – | 500 | nA |
| h_{FE} | DC current gain | $I_C = 10\text{ mA}; V_{CE} = 2\text{ V}$ | 50 | – | |
| | | $I_C = 100\text{ mA}; V_{CE} = 1\text{ V};$ note 1 | 50 | – | |
| V_{CEsat} | collector-emitter saturation voltage | $I_C = 100\text{ mA}; I_B = 10\text{ mA};$ note 1 | – | 250 | mV |
| V_{BEsat} | base-emitter saturation voltage | $I_C = 100\text{ mA}; I_B = 10\text{ mA};$ note 1 | – | 900 | mV |
| V_{BE} | base-emitter voltage | $I_C = 100\text{ mA}; V_{CE} = 1\text{ V}$ | – | 1.2 | V |
| f_T | transition frequency | $I_C = 10\text{ mA}; V_{CE} = 2\text{ V}; f = 100\text{ MHz}$ | 100 | – | MHz |

Note

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

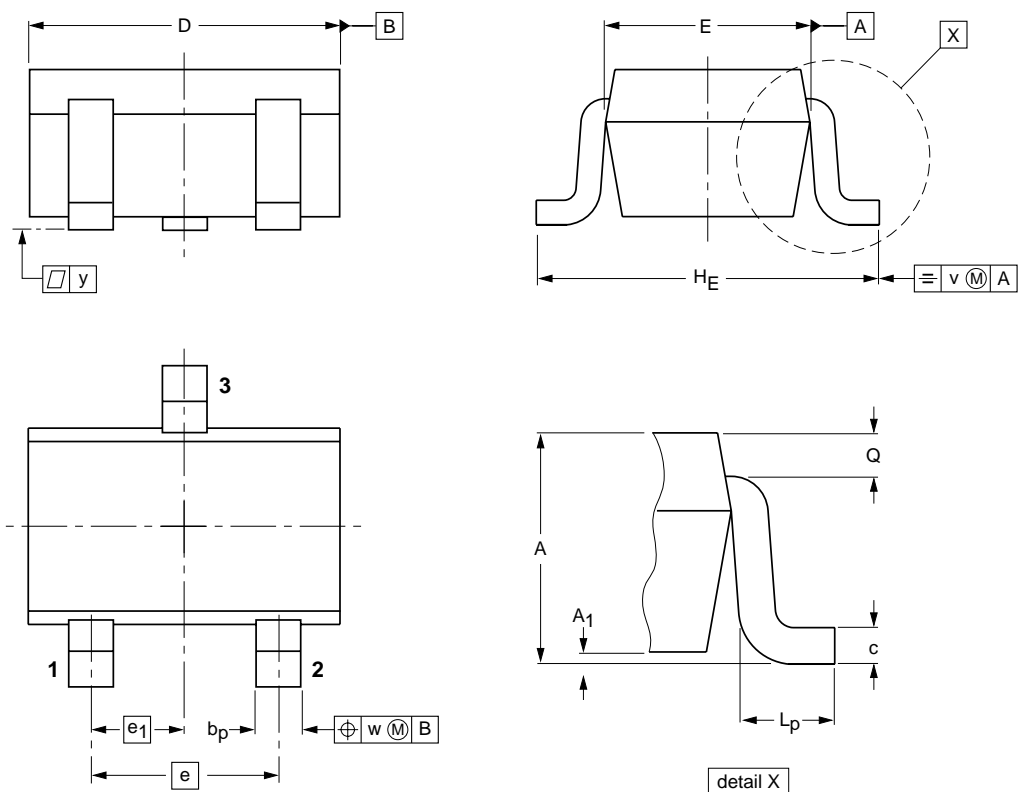
NPN general purpose transistors

PMSTA05; PMSTA06

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

PMSTA05; PMSTA06

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

PMSTA05; PMSTA06

NOTES

NPN general purpose transistors

PMSTA05; PMSTA06

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