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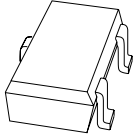
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Kind regards,

Team Nexperia



2PA1576

PNP general-purpose transistor

Rev. 06 — 17 November 2009

Product data sheet

1. Product profile

1.1 General description

PNP transistor in a SOT323 (SC-70) plastic package. The NPN complement is 2PC4081.

1.2 Features

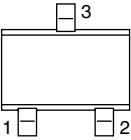
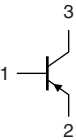
- Low current (max. 150 mA)
- Low voltage (max. 50 V)
- Low collector capacitance (typ. 2.5 pF)

1.3 Applications

- General-purpose switching and amplification

2. Pinning information

Table 1. Pinning

| Pin | Description | Simplified outline | Symbol |
|-----|-------------|---|--|
| 1 | base |  |  <i>sym013</i> |
| 2 | emitter | | |
| 3 | collector | | |

3. Ordering information

Table 2. Ordering information

| Type number | Package | | Version |
|-------------|---------|--|---------|
| | Name | Description | |
| 2PA1576Q | SC-70 | plastic surface mounted package; 3 leads | SOT323 |
| 2PA1576R | | | |
| 2PA1576S | | | |

4. Marking

Table 3. Marking codes

| Type number | Marking code ^[1] |
|-------------|-----------------------------|
| 2PA1576Q | F*Q |
| 2PA1576R | F*R |
| 2PA1576S | F*S |

[1] * = -: made in Hong Kong
* = t: made in Malaysia

5. Limiting values

Table 4. Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134).

| 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 | - | -6 | V |
| I_C | collector current (DC) | | - | -150 | mA |
| I_{CM} | peak collector current | | - | -200 | mA |
| I_{BM} | peak base current | | - | -200 | mA |
| P_{tot} | total power dissipation | $T_{amb} \leq 25\text{ °C}$ | ^[1] - | 200 | mW |
| T_{stg} | storage temperature | | -65 | +150 | °C |
| T_j | junction temperature | | - | 150 | °C |
| T_{amb} | ambient temperature | | -65 | +150 | °C |

[1] Transistor mounted on an FR4 printed-circuit board, single-sided copper, tin-plated and standard footprint.

6. Thermal characteristics

Table 5. Thermal characteristics

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|---------------|---|------------|------------------|-----|-----|------|
| $R_{th(j-a)}$ | thermal resistance from junction to ambient | | ^[1] - | - | 625 | K/W |

[1] Transistor mounted on an FR4 printed-circuit board, single-sided copper, tin-plated and standard footprint.

7. Characteristics

Table 6. Characteristics

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

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit | | | | |
|-------------|--------------------------------------|--|-----|-----|------|---------------|----------|-----|---|-----|
| I_{CBO} | collector-base cut-off current | $I_E = 0\text{ A}; V_{CB} = -30\text{ V}$ | - | - | -100 | nA | | | | |
| | | $I_E = 0\text{ A}; V_{CB} = -30\text{ V}; T_j = 150\text{ }^{\circ}\text{C}$ | - | - | -5 | μA | | | | |
| I_{EBO} | emitter-base cut-off current | $I_C = 0\text{ A}; V_{EB} = -4\text{ V}$ | - | - | -100 | nA | | | | |
| h_{FE} | DC current gain | $I_C = -1\text{ mA}; V_{CE} = -6\text{ V}$ | | | | | | | | |
| | | | | | | | 2PA1576Q | 120 | - | 270 |
| | | | | | | | 2PA1576R | 180 | - | 390 |
| | | | | | | | 2PA1576S | 270 | - | 560 |
| V_{CEsat} | collector-emitter saturation voltage | $I_C = -50\text{ mA}; I_B = -5\text{ mA}$ | [1] | - | -500 | mV | | | | |
| C_c | collector capacitance | $I_E = i_e = 0\text{ A}; V_{CB} = -12\text{ V}; f = 1\text{ MHz}$ | - | 2.5 | 3.5 | pF | | | | |
| f_T | transition frequency | $I_C = -2\text{ mA}; V_{CE} = -12\text{ V}; f = 100\text{ MHz}$ | 100 | - | - | MHz | | | | |

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

8. Package outline

Plastic surface-mounted package; 3 leads

SOT323

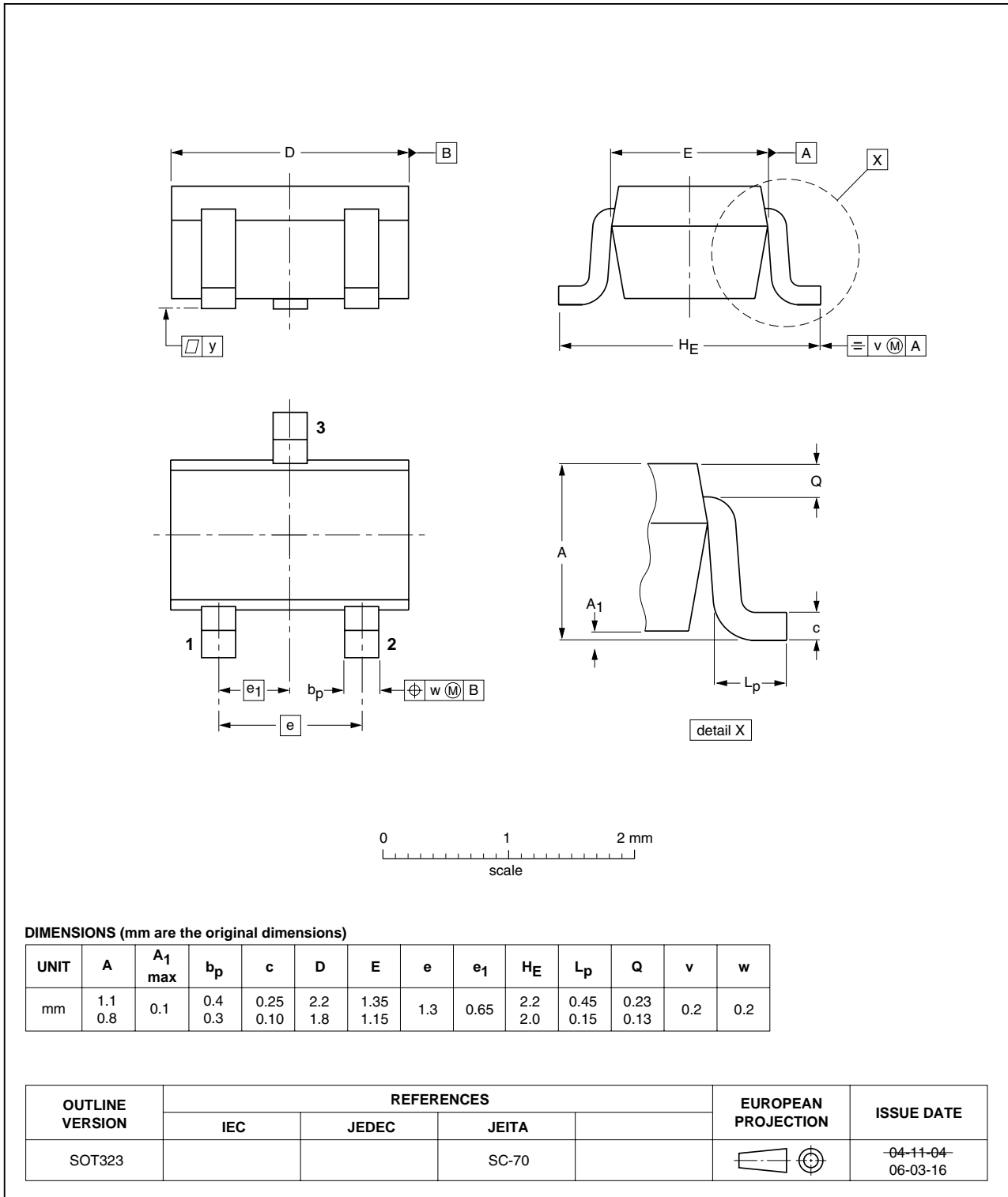


Fig 1. Package outline SOT323 (SC-70)

9. Revision history

Table 7. Revision history

| Document ID | Release date | Data sheet status | Change notice | Supersedes |
|----------------|--------------|--|---------------|------------|
| 2PA1576_6 | 20091117 | Product data sheet | - | 2PA1576_5 |
| Modifications: | | <ul style="list-style-type: none">This data sheet was changed to reflect the new company name NXP Semiconductors, including new legal definitions and disclaimers. No changes were made to the technical content.Figure 1 "Package outline SOT323 (SC-70)": updated | | |
| 2PA1576_5 | 20041124 | Product data sheet | - | 2PA1576_4 |
| 2PA1576_4 | 19990531 | Product specification | - | 2PA1576_3 |
| 2PA1576_3 | 19970328 | Objective specification | - | 2PA1576_2 |
| 2PA1576_2 | 19931213 | n.a. | - | n.a. |

10. Legal information

10.1 Data sheet status

| Document status ^{[1][2]} | Product status ^[3] | Definition |
|-----------------------------------|-------------------------------|---|
| Objective [short] data sheet | Development | This document contains data from the objective specification for product development. |
| Preliminary [short] data sheet | Qualification | This document contains data from the preliminary specification. |
| Product [short] data sheet | Production | This document contains the product specification. |

[1] Please consult the most recently issued document before initiating or completing a design.

[2] The term 'short data sheet' is explained in section "Definitions".

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