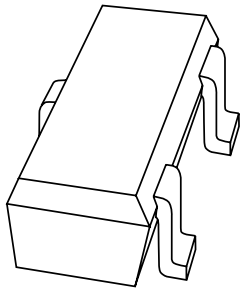


DATA SHEET



2PD601AW

NPN general purpose transistor

Preliminary specification

2002 Jun 26

NPN general purpose transistor

2PD601AW

FEATURES

- High collector current (max. 100 mA)
- Low collector-emitter saturation voltage (max. 500 mV).

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

NPN transistor in an SC-70 (SOT323) plastic package.
PNP complement: 2PB709AW.

MARKING

| TYPE NUMBER | MARKING CODE ⁽¹⁾ |
|-------------|-----------------------------|
| 2PD601AQW | *6D |
| 2PD601ARW | *6E |
| 2PD601ASW | *6F |

Note

- * = -: made in Hong Kong.
* = t: made in Malaysia.

PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | base |
| 2 | emitter |
| 3 | collector |

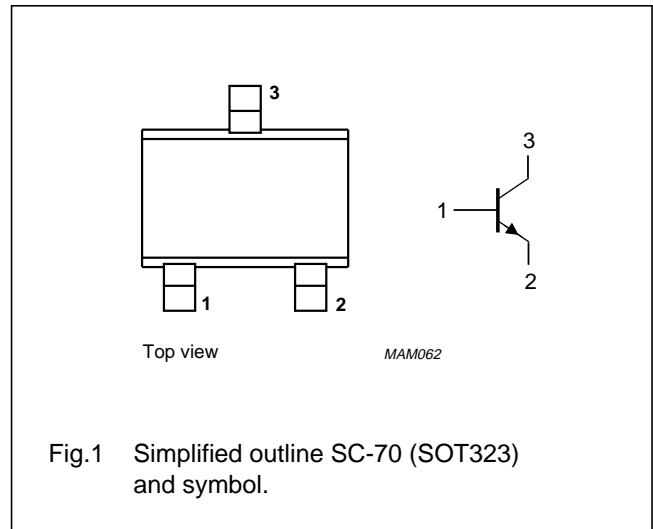


Fig.1 Simplified outline SC-70 (SOT323) and symbol.

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) | | – | 100 | mA |
| I _{CM} | peak collector current | | – | 200 | mA |
| P _{tot} | total power dissipation | T _{amb} ≤ 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. For mounting conditions, see “Thermal considerations and footprint design for SOT323 in the General Part of Data Handbook SC18”.

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THERMAL CHARACTERISTICS

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

Note

- For mounting conditions, see "Thermal considerations and footprint design for SOT323 in the General Part of Data Handbook SC18".

CHARACTERISTICS

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

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|-------------|--------------------------------------|--|------|------|---------------|
| I_{CBO} | collector-base cut-off current | $I_E = 0; V_{CB} = 60\text{ V}$ | – | 10 | nA |
| | | $I_E = 0; V_{CB} = 60\text{ V}; T_j = 150\text{ °C}$ | – | 5 | μA |
| I_{EBO} | emitter-base cut-off current | $I_C = 0; V_{EB} = 5\text{ V}$ | – | 10 | nA |
| h_{FE} | DC current gain | $I_C = 100\text{ mA}; V_{CE} = 2\text{ V};$ note 1 | 90 | – | |
| | DC current gain | $I_C = 2\text{ mA}; V_{CE} = 10\text{ V}$ | | | |
| | 2PD601AQW | | 160 | 260 | |
| | 2PD601ARW | | 210 | 340 | |
| | 2PD601ASW | | 290 | 460 | |
| V_{CEsat} | collector-emitter saturation voltage | $I_C = 100\text{ mA}; I_B = 10\text{ mA};$ note 1 | – | 500 | mV |
| C_c | collector capacitance | $I_E = i_e = 0; V_{CB} = 10\text{ V}; f = 1\text{ MHz}$ | – | 3.5 | pF |
| f_T | transition frequency | $I_C = 2\text{ mA}; V_{CE} = 10\text{ V};$ $f = 100\text{ MHz}$ | | | |
| | 2PD601AQW | | 100 | – | MHz |
| | 2PD601ARW | | 120 | – | MHz |
| | 2PD601ASW | | 140 | – | MHz |

Note

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

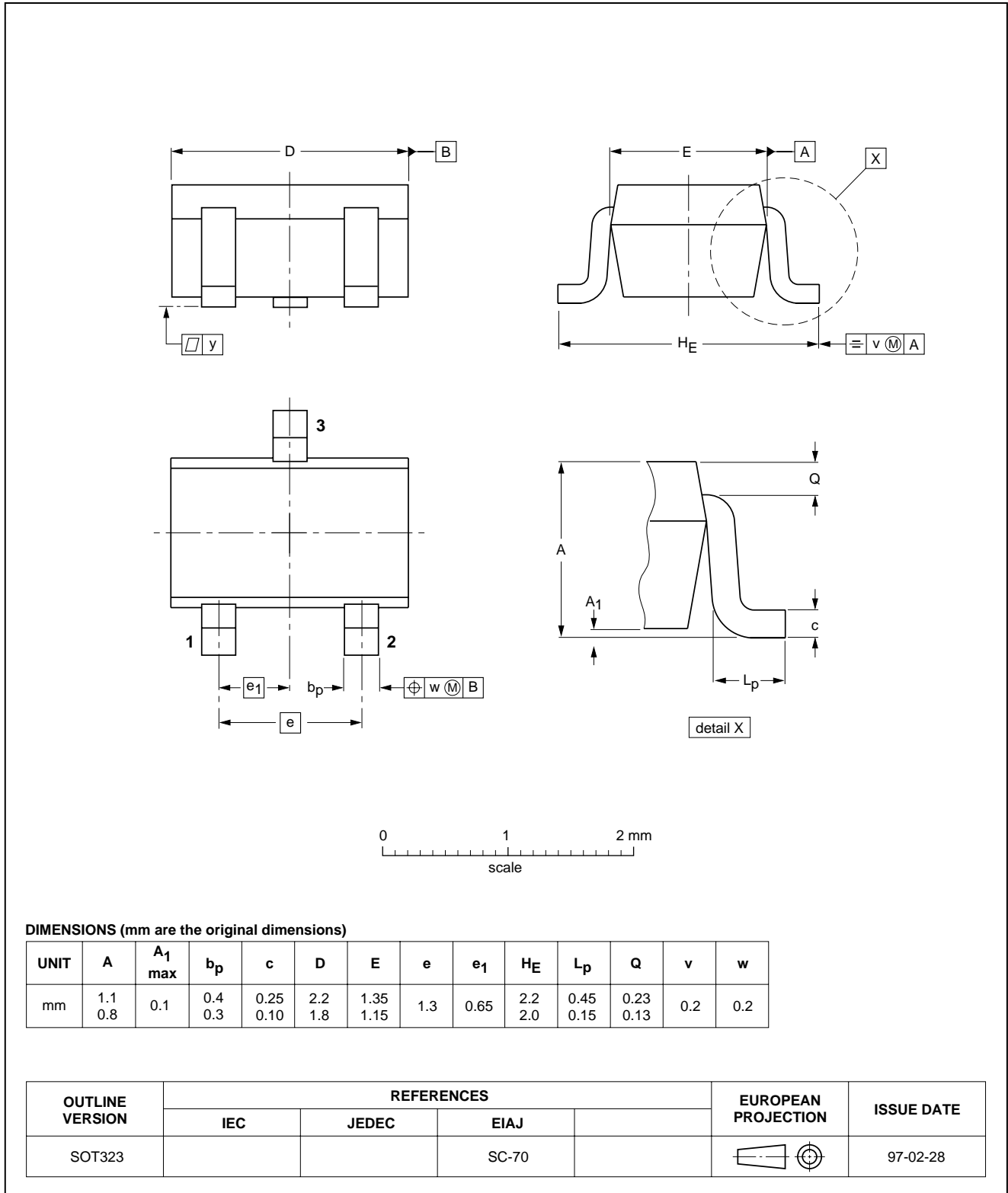
NPN general purpose transistor

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PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT323



NPN general purpose transistor

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DATA SHEET STATUS

| DATA SHEET STATUS ⁽¹⁾ | PRODUCT STATUS ⁽²⁾ | DEFINITIONS |
|----------------------------------|-------------------------------|--|
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| Preliminary data | Qualification | This data sheet contains data from the preliminary specification. Supplementary data will be published at a later date. Philips Semiconductors reserves the right to change the specification without notice, in order to improve the design and supply the best possible product. |
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NOTES

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NOTES

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