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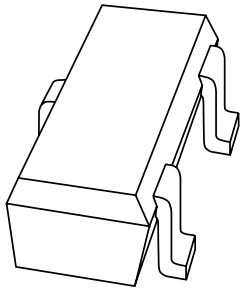
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Kind regards,

Team Nexperia

DATA SHEET



2PB709AW

PNP general purpose transistor

Product data sheet

2002 Jun 26

PNP general purpose transistor

2PB709AW

FEATURES

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

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

PNP transistor in an SC-70 (SOT323) plastic package.
NPN complement: 2PD601AW

MARKING

| TYPE NUMBER | MARKING CODE ⁽¹⁾ |
|-------------|-----------------------------|
| 2PB709AQW | N5* |
| 2PB709ARW | N7* |
| 2PB709ASW | N9* |

Note

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

PINNING

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

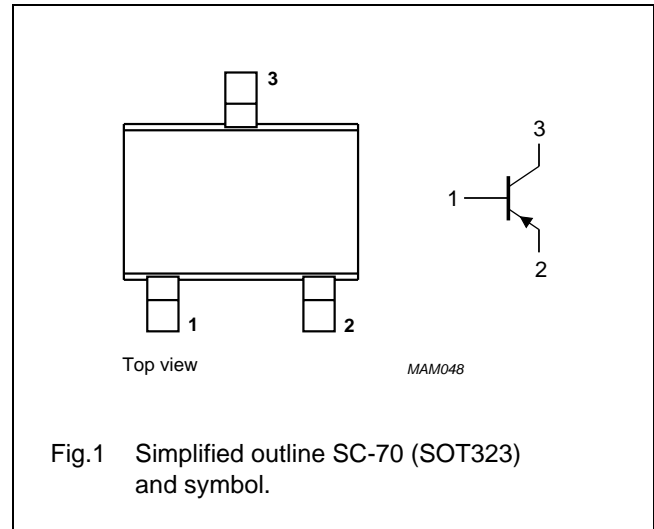


Fig.1 Simplified outline SC-70 (SOT323) and symbol.

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 | – | –45 | V |
| V _{CEO} | collector-emitter voltage | open base | – | –45 | 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

- 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 | $I_E = 0; V_{CB} = -45\text{ V}$ | – | –10 | nA |
| | | $I_E = 0; V_{CB} = -45\text{ V}; T_j = 150\text{ °C}$ | – | –5 | μA |
| I_{EBO} | emitter-base cut-off current | $I_C = 0; V_{EB} = -5\text{ V}$ | – | –10 | nA |
| h_{FE} | DC current gain 2PB709AQW 2PB709ARW 2PB709ASW | $I_C = -2\text{ mA}; V_{CE} = -10\text{ V}$ | 160 | 260 | |
| | | | 210 | 340 | |
| | | | 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 | $I_E = i_e = 0; V_{CB} = -10\text{ V};$ $f = 1\text{ MHz}$ | – | 5 | μF |
| f_T | transition frequency 2PB709AQW 2PB709ARW 2PB709ASW | $I_C = -1\text{ mA}; V_{CE} = -10\text{ V};$ $f = 100\text{ MHz}$ | 60 | – | MHz |
| | | | 70 | – | MHz |
| | | | 80 | – | MHz |

Note

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

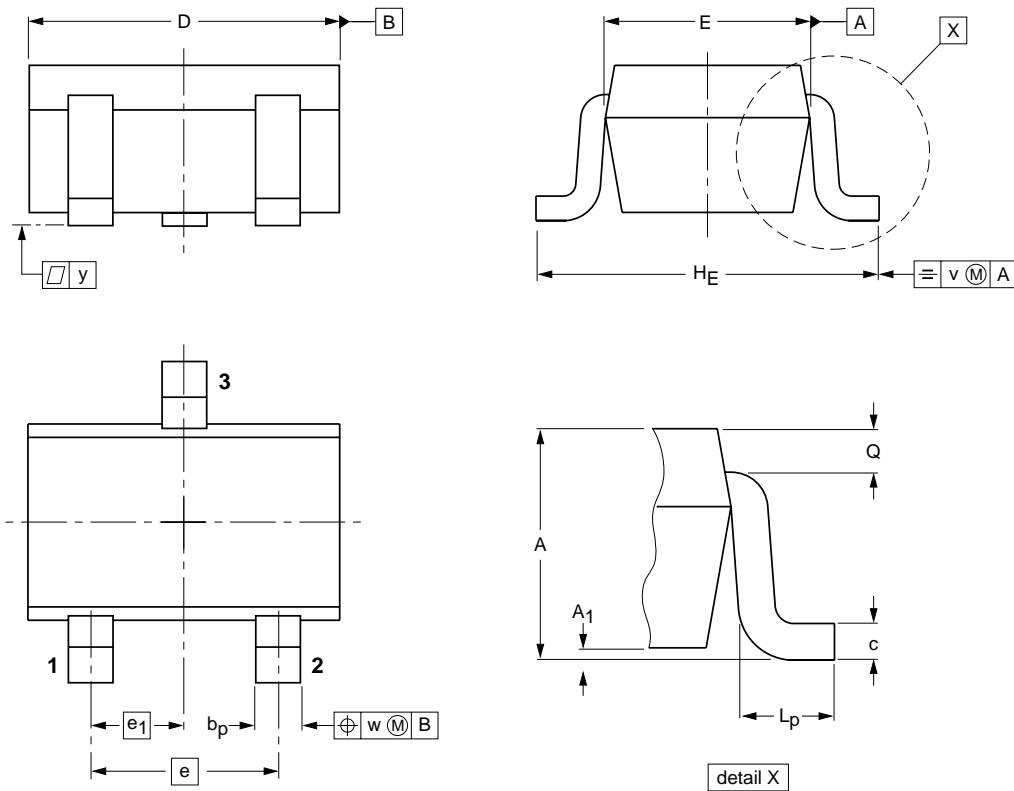
PNP general purpose transistor

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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

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DATA SHEET STATUS

| DOCUMENT STATUS ⁽¹⁾ | PRODUCT STATUS ⁽²⁾ | DEFINITION |
|--------------------------------|-------------------------------|---|
| Objective data sheet | Development | This document contains data from the objective specification for product development. |
| Preliminary data sheet | Qualification | This document contains data from the preliminary specification. |
| Product data sheet | Production | This document contains the product specification. |

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NXP Semiconductors

Customer notification

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Printed in The Netherlands

613514/01/pp6

Date of release: 2002 Jun 26

Document order number: 9397 750 09758

