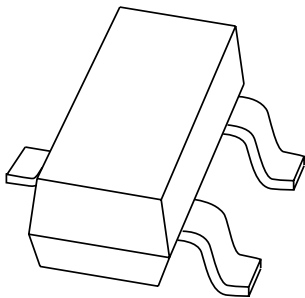


DATA SHEET



Searchdatasheet.com

BCW71; BCW72 NPN general purpose transistors

Product data sheet
Supersedes data of 1997 Mar 06

1999 Apr 19

NPN general purpose transistors

BCW71; BCW72

FEATURES

- Low current (100 mA)
- Low voltage (45 V)
- Low noise.

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

NPN transistor in a SOT23 plastic package.
PNP complements: BCW69 and BCW70.

MARKING

| TYPE NUMBER | MARKING CODE ⁽¹⁾ |
|-------------|-----------------------------|
| BCW71 | K1* |
| BCW72 | K2* |

Note

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

PINNING

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

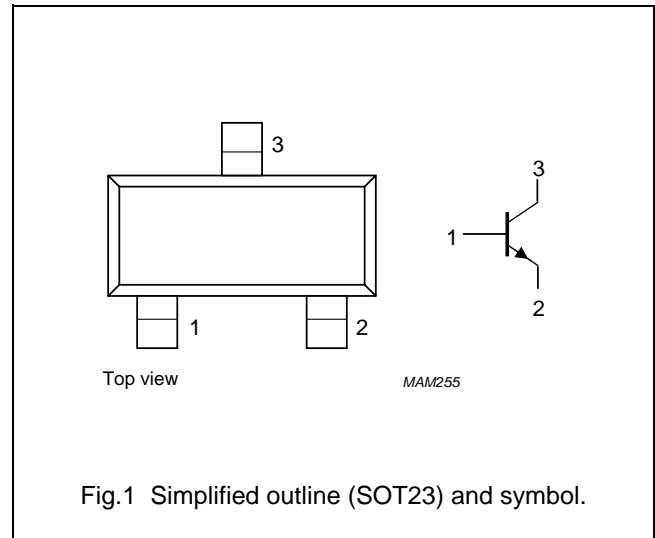


Fig.1 Simplified outline (SOT23) and symbol.

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 | – | 50 | V |
| V _{CEO} | collector-emitter voltage | open base; I _C = 2 mA | – | 45 | V |
| V _{EBO} | emitter-base voltage | open collector | – | 5 | V |
| I _C | collector current (DC) | | – | 100 | mA |
| I _{CM} | peak collector current | | – | 200 | mA |
| I _{BM} | peak base current | | – | 200 | mA |
| P _{tot} | total power dissipation | T _{amb} ≤ 25 °C | – | 250 | 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

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THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | CONDITIONS | VALUE | UNIT |
|---------------|---------------------------------------------|------------|-------|------|
| $R_{th\ j-a}$ | thermal resistance from junction to ambient | note 1 | 500 | K/W |

Note

1. Transistor mounted on an FR4 printed-circuit board.

CHARACTERISTICS

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

| SYMBOL | PARAMETER | CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|-------------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------|------|------|------|---------------|
| I_{CBO} | collector cut-off current | $I_E = 0; V_{CB} = 20\text{ V}$ | – | – | 100 | nA |
| | | $I_E = 0; V_{CB} = 20\text{ V}; T_j = 100\text{ °C}$ | – | – | 10 | μA |
| I_{EBO} | emitter cut-off current | $I_C = 0; V_{EB} = 5\text{ V}$ | – | – | 100 | μA |
| h_{FE} | DC current gain | $I_C = 10\text{ }\mu\text{A}; V_{CE} = 5\text{ V}$ | – | 90 | – | |
| | BCW71 | | | | | |
| h_{FE} | DC current gain | $I_C = 2\text{ mA}; V_{CE} = 5\text{ V}$ | 110 | – | 220 | |
| | BCW72 | | | | | |
| V_{CEsat} | collector-emitter saturation voltage | $I_C = 10\text{ mA}; I_B = 0.5\text{ mA}$ | – | 120 | 250 | mV |
| | | $I_C = 50\text{ mA}; I_B = 2.5\text{ mA}$ | – | 210 | – | mV |
| V_{BEsat} | base-emitter saturation voltage | $I_C = 10\text{ mA}; I_B = 0.5\text{ mA}$ | – | 750 | – | mV |
| | | $I_C = 50\text{ mA}; I_B = 2.5\text{ mA}$ | – | 850 | – | mV |
| V_{BE} | base-emitter voltage | $I_C = 2\text{ mA}; V_{CE} = 5\text{ V}$ | 550 | – | 700 | mV |
| C_c | collector capacitance | $I_E = I_e = 0; V_{CB} = 10\text{ V}; f = 1\text{ MHz}$ | – | 2.5 | – | pF |
| f_T | transition frequency | $I_C = 10\text{ mA}; V_{CE} = 5\text{ V}; f = 100\text{ MHz}$ | 100 | – | – | MHz |
| F | noise figure | $I_C = 200\text{ }\mu\text{A}; V_{CE} = 5\text{ V}; R_S = 2\text{ k}\Omega;$ $f = 1\text{ kHz}; B = 200\text{ Hz}$ | – | – | 10 | dB |

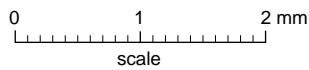
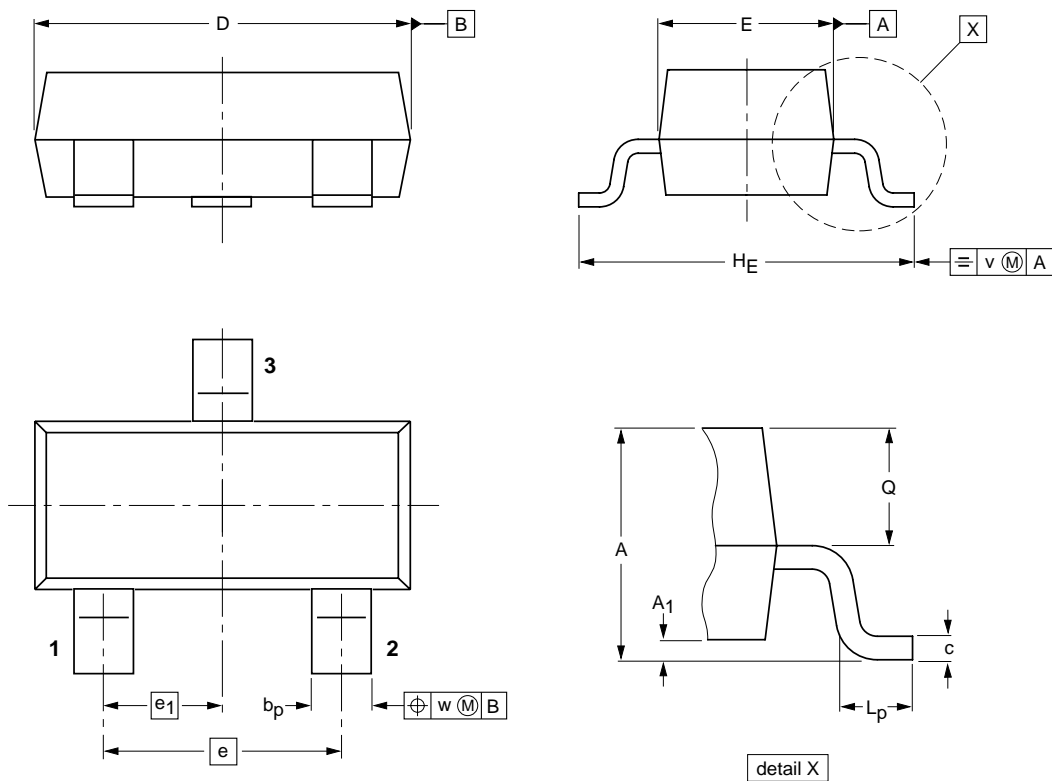
NPN general purpose transistors

BCW71; BCW72

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



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 0.9 | 0.1 | 0.48 0.38 | 0.15 0.09 | 3.0 2.8 | 1.4 1.2 | 1.9 | 0.95 | 2.5 2.1 | 0.45 0.15 | 0.55 0.45 | 0.2 | 0.1 |

| OUTLINE VERSION | REFERENCES | | | | EUROPEAN PROJECTION | ISSUE DATE |
|--------------------|------------|----------|------|--|------------------------|---------------------------------|
| | IEC | JEDEC | EIAJ | | | |
| SOT23 | | TO-236AB | | | | 97-02-28 99-09-13 |

NPN general purpose transistors

BCW71; BCW72

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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Contact information

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