



# THE DATASHEET OF BCV46,215

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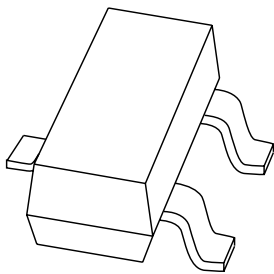
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Kind regards,

Team Nexperia

# DATA SHEET



## **BCV26; BCV46** PNP Darlington transistors

Product data sheet  
Supersedes data of 1999 Apr 08

2004 Jan 13

## PNP Darlington transistors

## BCV26; BCV46

## FEATURES

- High current (max. 500 mA)
- Low voltage (max. 60 V)
- Very high DC current gain (min. 10000).

## APPLICATIONS

- Where very high amplification is required.

## DESCRIPTION

PNP Darlington transistor in a SOT23 plastic package.  
NPN complements: BCV27 and BCV47.

## MARKING

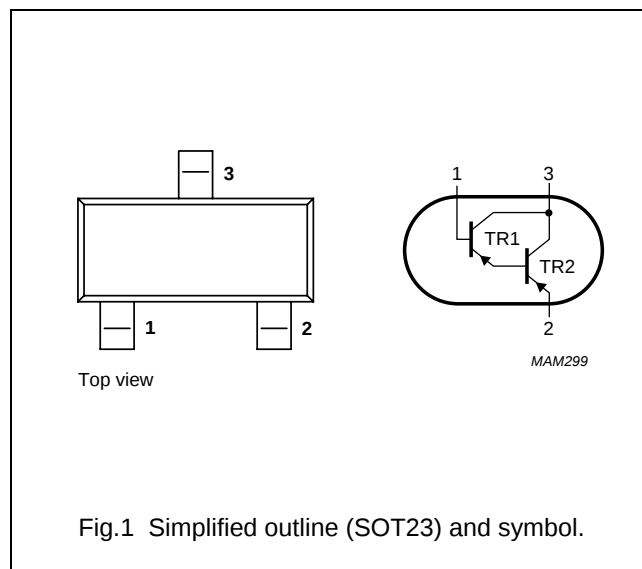
| TYPE NUMBER | MARKING CODE <sup>(1)</sup> |
|-------------|-----------------------------|
| BCV26       | FD*                         |
| BCV46       | FE*                         |

## Note

1. \* = p : Made in Hong Kong.  
 \* = t : Made in Malaysia.  
 \* = W : Made in China.

## PINNING

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



## ORDERING INFORMATION

| TYPE NUMBER | PACKAGE |                                          |         |
|-------------|---------|------------------------------------------|---------|
|             | NAME    | DESCRIPTION                              | VERSION |
| BCV26       | —       | plastic surface mounted package; 3 leads | SOT23   |
| BCV46       | —       | plastic surface mounted package; 3 leads | SOT23   |

## PNP Darlington transistors

## BCV26; BCV46

**LIMITING VALUES**

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

| SYMBOL           | PARAMETER                     | CONDITIONS                       | MIN. | MAX. | UNIT |
|------------------|-------------------------------|----------------------------------|------|------|------|
| V <sub>CBO</sub> | collector-base voltage        | open emitter                     |      |      |      |
|                  | BCV26                         |                                  | –    | –40  | V    |
|                  | BCV46                         |                                  | –    | –80  | V    |
| V <sub>CES</sub> | collector-emitter voltage     | V <sub>BE</sub> = 0              |      |      |      |
|                  | BCV26                         |                                  | –    | –30  | V    |
|                  | BCV46                         |                                  | –    | –60  | V    |
| V <sub>EBO</sub> | emitter-base voltage          | open collector                   | –    | –10  | V    |
| I <sub>C</sub>   | collector current (DC)        |                                  | –    | –500 | mA   |
| I <sub>CM</sub>  | peak collector current        |                                  | –    | –800 | mA   |
| I <sub>B</sub>   | base current (DC)             |                                  | –    | –100 | mA   |
| P <sub>tot</sub> | total power dissipation       | T <sub>amb</sub> ≤ 25 °C; note 1 | –    | 250  | mW   |
| T <sub>stg</sub> | storage temperature           |                                  | –65  | +150 | °C   |
| T <sub>j</sub>   | junction temperature          |                                  | –    | 150  | °C   |
| T <sub>amb</sub> | operating ambient temperature |                                  | –65  | +150 | °C   |

**Note**

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

**THERMAL CHARACTERISTICS**

| SYMBOL               | PARAMETER                                   | CONDITIONS | VALUE | UNIT |
|----------------------|---------------------------------------------|------------|-------|------|
| R <sub>th(j-a)</sub> | thermal resistance from junction to ambient | note 1     | 500   | K/W  |

**Note**

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

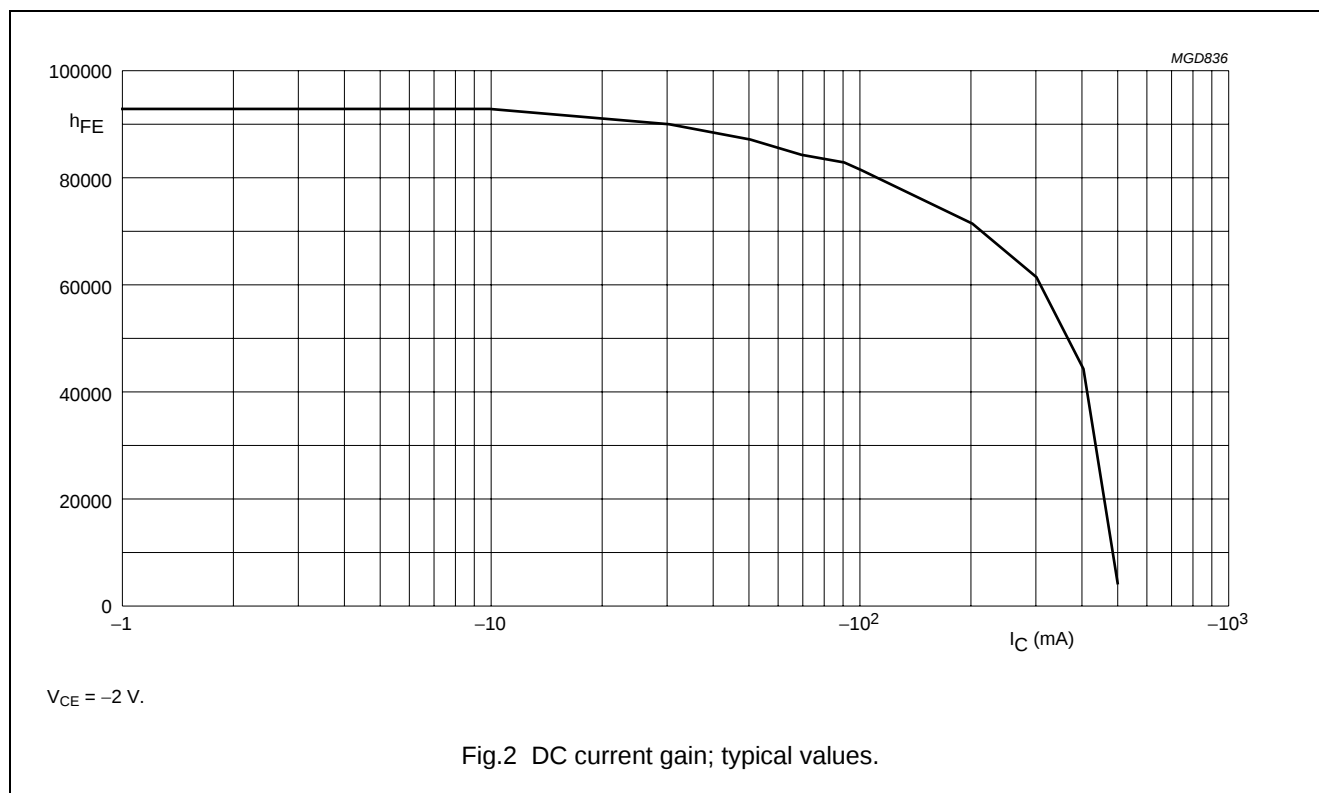
## PNP Darlington transistors

## BCV26; BCV46

## CHARACTERISTICS

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

| SYMBOL      | PARAMETER                            | CONDITIONS                                                            | MIN.  | TYP. | MAX. | UNIT |
|-------------|--------------------------------------|-----------------------------------------------------------------------|-------|------|------|------|
| $I_{CBO}$   | collector cut-off current            |                                                                       |       |      |      |      |
|             | BCV26                                | $I_E = 0$ ; $V_{CB} = -30\text{ V}$                                   | –     | –    | –100 | nA   |
|             | BCV46                                | $I_E = 0$ ; $V_{CB} = -60\text{ V}$                                   | –     | –    | –100 | nA   |
| $I_{EBO}$   | emitter cut-off current              | $I_C = 0$ ; $V_{EB} = -10\text{ V}$                                   | –     | –    | –100 | nA   |
| $h_{FE}$    | DC current gain                      | $I_C = -1\text{ mA}$ ; $V_{CE} = -5\text{ V}$ ; (see Fig.2)           |       |      |      |      |
|             | BCV26                                |                                                                       | 4000  | –    | –    |      |
|             | BCV46                                |                                                                       | 2000  | –    | –    |      |
|             | DC current gain                      | $I_C = -10\text{ mA}$ ; $V_{CE} = -5\text{ V}$ ; (see Fig.2)          |       |      |      |      |
|             | BCV26                                |                                                                       | 10000 | –    | –    |      |
|             | BCV46                                |                                                                       | 4000  | –    | –    |      |
|             | DC current gain                      | $I_C = -100\text{ mA}$ ; $V_{CE} = -5\text{ V}$ ; (see Fig.2)         |       |      |      |      |
|             | BCV26                                |                                                                       | 20000 | –    | –    |      |
|             | BCV46                                |                                                                       | 10000 | –    | –    |      |
| $V_{CEsat}$ | collector-emitter saturation voltage | $I_C = -100\text{ mA}$ ; $I_B = -0.1\text{ mA}$                       | –     | –    | –1   | V    |
| $V_{BEsat}$ | base-emitter saturation voltage      | $I_C = -100\text{ mA}$ ; $I_B = -0.1\text{ mA}$                       | –     | –    | –1.5 | V    |
| $V_{BEon}$  | base-emitter on-state voltage        | $I_C = -10\text{ mA}$ ; $V_{CE} = -5\text{ V}$                        | –     | –    | –1.4 | V    |
| $f_T$       | transition frequency                 | $I_C = -30\text{ mA}$ ; $V_{CE} = -5\text{ V}$ ; $f = 100\text{ MHz}$ | –     | 220  | –    | MHz  |



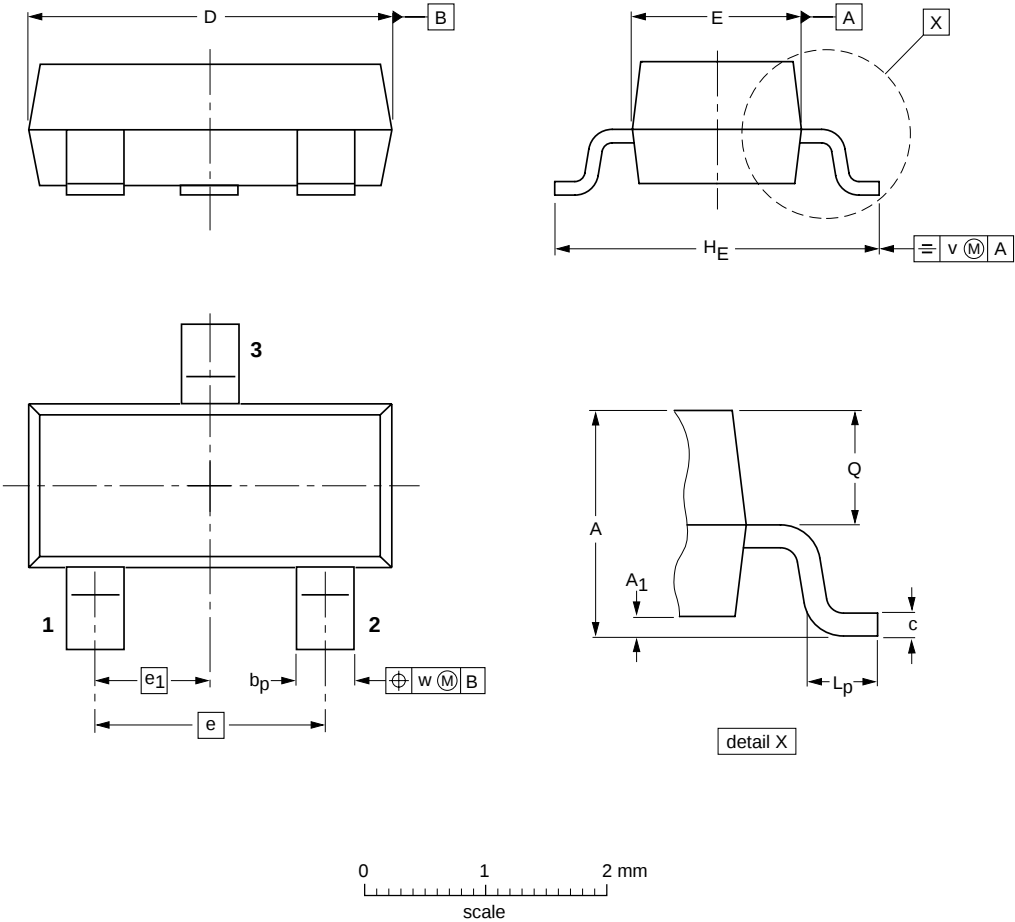
PNP Darlington transistors

BCV26; BCV46

PACKAGE OUTLINE

Plastic surface-mounted package; 3 leads

SOT23



DIMENSIONS (mm are the original dimensions)

| UNIT | A          | A <sub>1</sub><br>max. | b <sub>p</sub> | c            | D          | E          | e   | e <sub>1</sub> | H <sub>E</sub> | L <sub>p</sub> | Q            | v   | w   |
|------|------------|------------------------|----------------|--------------|------------|------------|-----|----------------|----------------|----------------|--------------|-----|-----|
| mm   | 1.1<br>0.9 | 0.1                    | 0.48<br>0.38   | 0.15<br>0.09 | 3.0<br>2.8 | 1.4<br>1.2 | 1.9 | 0.95           | 2.5<br>2.1     | 0.45<br>0.15   | 0.55<br>0.45 | 0.2 | 0.1 |

| OUTLINE<br>VERSION | REFERENCES |          |       |  | EUROPEAN<br>PROJECTION                                                                | ISSUE DATE           |
|--------------------|------------|----------|-------|--|---------------------------------------------------------------------------------------|----------------------|
|                    | IEC        | JEDEC    | JEITA |  |                                                                                       |                      |
| SOT23              |            | TO-236AB |       |  |  | 04-11-04<br>06-03-16 |

## PNP Darlington transistors

BCV26; BCV46

## DATA SHEET STATUS

| DOCUMENT STATUS <sup>(1)</sup> | PRODUCT STATUS <sup>(2)</sup> | 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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## **Customer notification**

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## **Contact information**

For additional information please visit: **<http://www.nxp.com>**

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