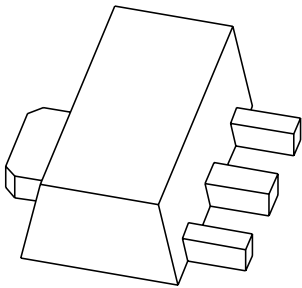


# DATA SHEET



## **BCV28; BCV48** PNP Darlington transistors

Product specification  
Supersedes data of 1999 Apr 08

2004 Dec 06

# PNP Darlington transistors

# BCV28; BCV48

### FEATURES

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

### APPLICATIONS

- Where very high amplification is required.

### DESCRIPTION

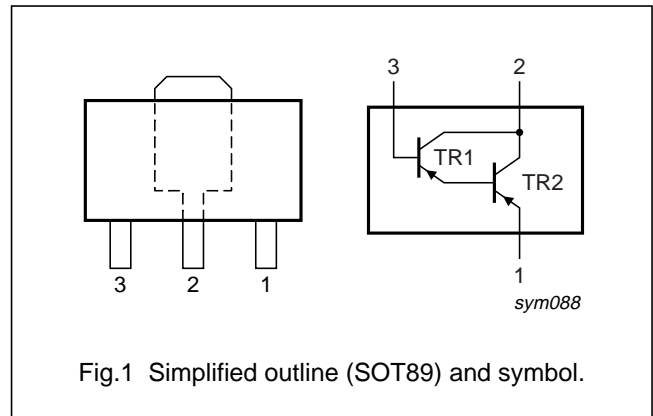
PNP Darlington transistor in a SOT89 plastic package.  
NPN complements: BCV29 and BCV49.

### MARKING

TYPE NUMBER	MARKING CODE
BCV28	ED
BCV48	EE

### PINNING

PIN	DESCRIPTION
1	emitter
2	collector
3	base



### ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
BCV28	SC-62	plastic surface mounted package; collector pad for good heat transfer; 3 leads	SOT89
BCV48			

## PNP Darlington transistors

## BCV28; BCV48

**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			
	BCV28		–	–40	V
	BCV48		–	–80	V
V <sub>CES</sub>	collector-emitter voltage	V <sub>BE</sub> = 0 V			
	BCV28		–	–30	V
	BCV48		–	–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	–	1.3	W
T <sub>stg</sub>	storage temperature		–65	+150	°C
T <sub>j</sub>	junction temperature		–	150	°C
T <sub>amb</sub>	ambient temperature		–65	+150	°C

**Note**

- Device mounted on a printed-circuit board, single-sided copper, tin-plated, mounting pad for collector 6 cm<sup>2</sup>.  
For other mounting conditions, see *“Thermal considerations for SOT89 in the General Part of associated Handbook”*.

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R <sub>th(j-a)</sub>	thermal resistance from junction to ambient	note 1	96	K/W
R <sub>th(j-s)</sub>	thermal resistance from junction to soldering point		16	K/W

**Note**

- Device mounted on a printed-circuit board, single-sided copper, tin-plated, mounting pad for collector 6 cm<sup>2</sup>.  
For other mounting conditions, see *“Thermal considerations for SOT89 in the General Part of associated Handbook”*.

## PNP Darlington transistors

## BCV28; BCV48

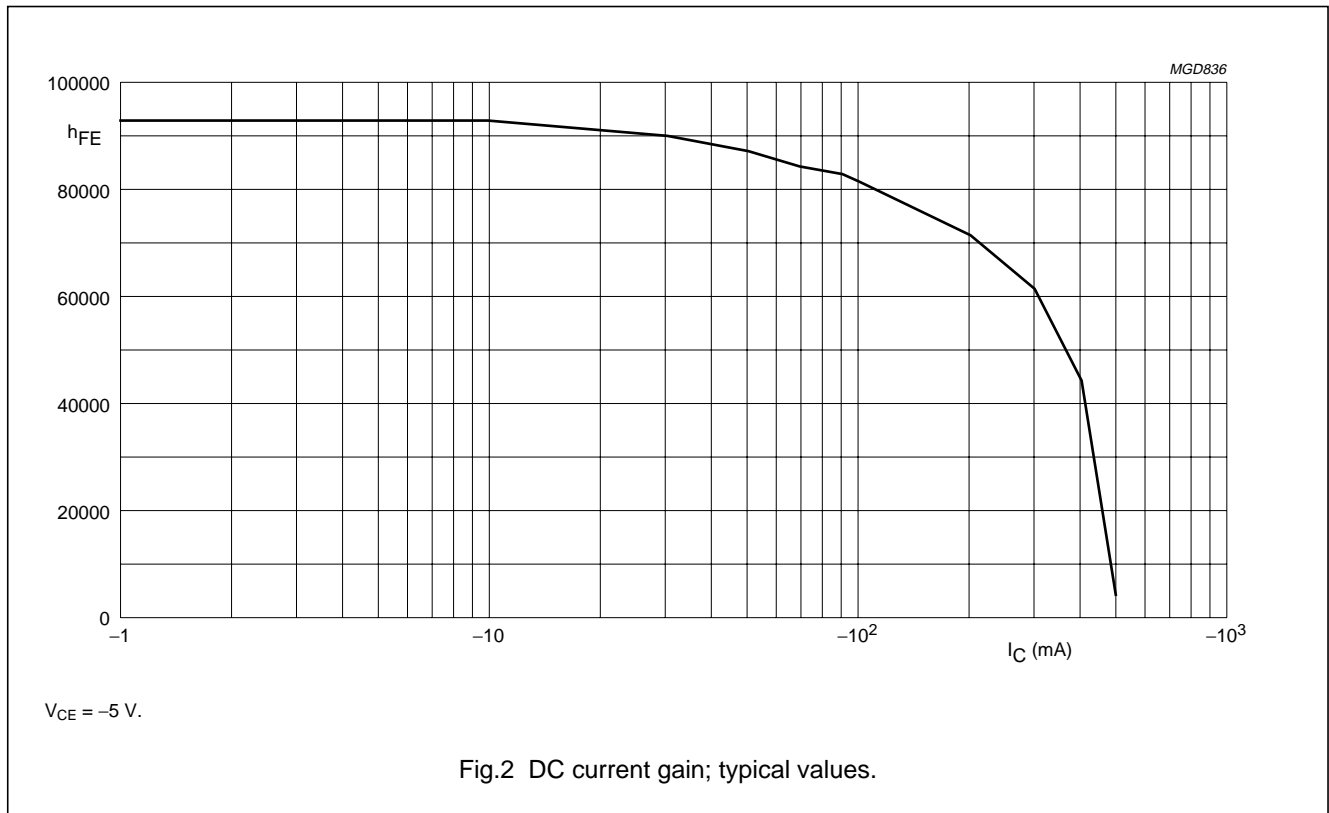
**CHARACTERISTICS**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$I_{CBO}$	collector-base cut-off current BCV28	$I_E = 0\text{ A}; V_{CB} = -30\text{ V}$	–	–	–100	nA
	BCV48	$I_E = 0\text{ A}; V_{CB} = -60\text{ V}$	–	–	–100	nA
$I_{EBO}$	emitter-base cut-off current	$I_C = 0\text{ A}; V_{BE} = -10\text{ V}$	–	–	–100	nA
$h_{FE}$	DC current gain BCV28	$I_C = -1\text{ mA}; V_{CE} = -5\text{ V};$ see Fig.2	4000	–	–	
	BCV48		2000	–	–	
	DC current gain BCV28	$I_C = -10\text{ mA}; V_{CE} = -5\text{ V};$ see Fig.2	10000	–	–	
	BCV48		4000	–	–	
	DC current gain BCV28	$I_C = -100\text{ mA}; V_{CE} = -5\text{ V};$ see Fig.2	20000	–	–	
	BCV48		10000	–	–	
	DC current gain BCV28	$I_C = -500\text{ mA}; V_{CE} = -5\text{ V};$ see Fig.2	4000	–	–	
	BCV48		2000	–	–	
$V_{CEsat}$	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	$I_C = -10\text{ mA}; I_B = -5\text{ mA}$	–	–	–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

BCV28; BCV48



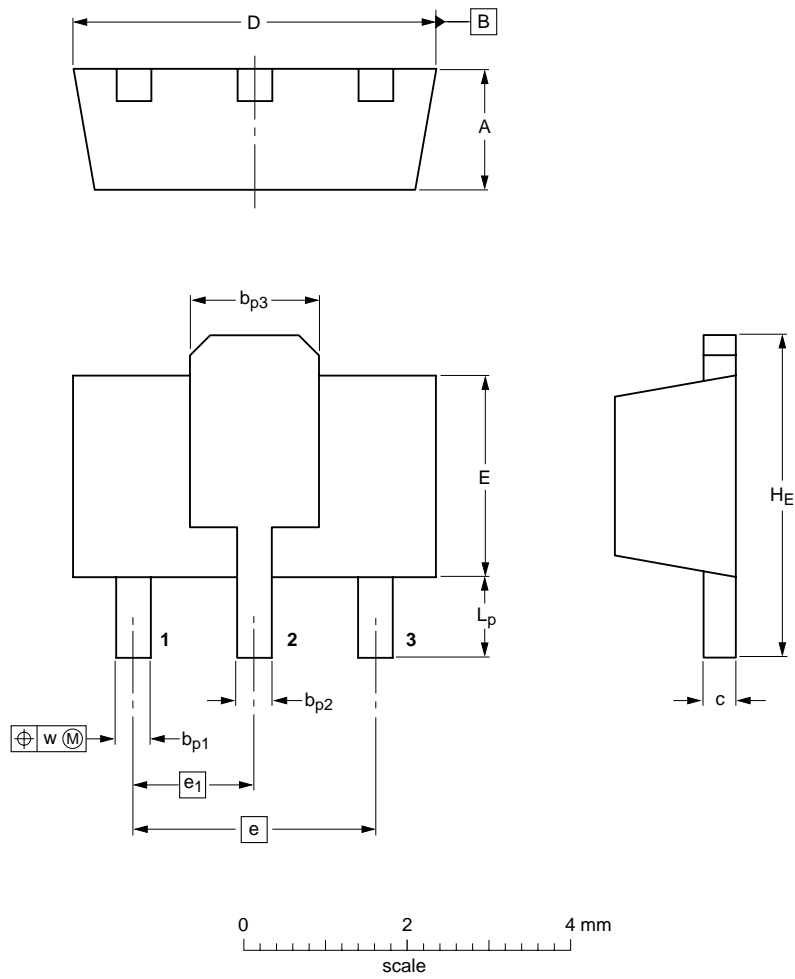
PNP Darlington transistors

BCV28; BCV48

PACKAGE OUTLINE

Plastic surface mounted package; collector pad for good heat transfer; 3 leads

SOT89



DIMENSIONS (mm are the original dimensions)

UNIT	A	bp1	bp2	bp3	c	D	E	e	e1	HE	Lp	w
mm	1.6 1.4	0.48 0.35	0.53 0.40	1.8 1.4	0.44 0.23	4.6 4.4	2.6 2.4	3.0	1.5	4.25 3.75	1.2 0.8	0.13

OUTLINE VERSION	REFERENCES			EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA		
SOT89		TO-243	SC-62		99-09-13 04-08-03

## PNP Darlington transistors

## BCV28; BCV48

## DATA SHEET STATUS

LEVEL	DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)(3)</sup>	DEFINITION
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## **Contact information**

For additional information please visit <http://www.semiconductors.philips.com>. Fax: +31 40 27 24825

For sales offices addresses send e-mail to: [sales.addresses@www.semiconductors.philips.com](mailto:sales.addresses@www.semiconductors.philips.com).

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