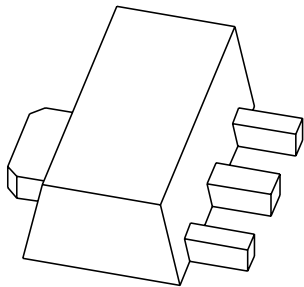


# DATA SHEET



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

Product specification  
Supersedes data of 1997 Apr 21

1999 Apr 08

# 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

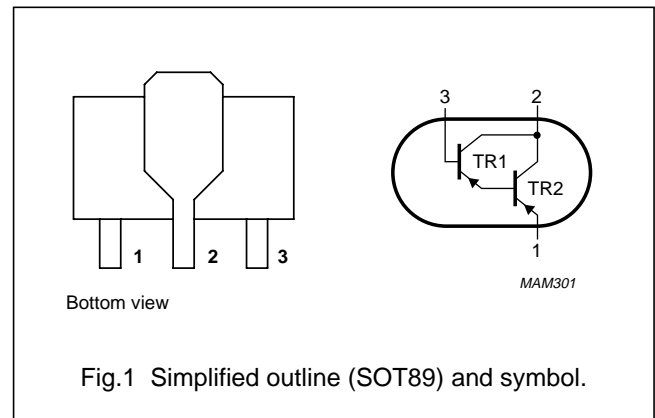
PNP Darlington transistor in a SOT89 plastic package.  
NPN complements: BCV29 and BCV49.

### MARKING

TYPE NUMBER	MARKING CODE
BCV28	ED
BCV48	EE

### PINNING

PIN	DESCRIPTION
1	emitter
2	collector
3	base



### LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V <sub>CB0</sub>	collector-base voltage	open emitter			
	BCV28		–	–40	V
	BCV48		–	–80	V
V <sub>CES</sub>	collector-emitter voltage	V <sub>BE</sub> = 0			
	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>	operating ambient temperature		–65	+150	°C

### Note

1. Device mounted on a printed-circuit board, single sided copper, tinplated, 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

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	96	K/W
$R_{th\ j-s}$	thermal resistance from junction to soldering point		16	K/W

## Note

1. Device mounted on a printed-circuit board, single-sided copper, tinplated, 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".

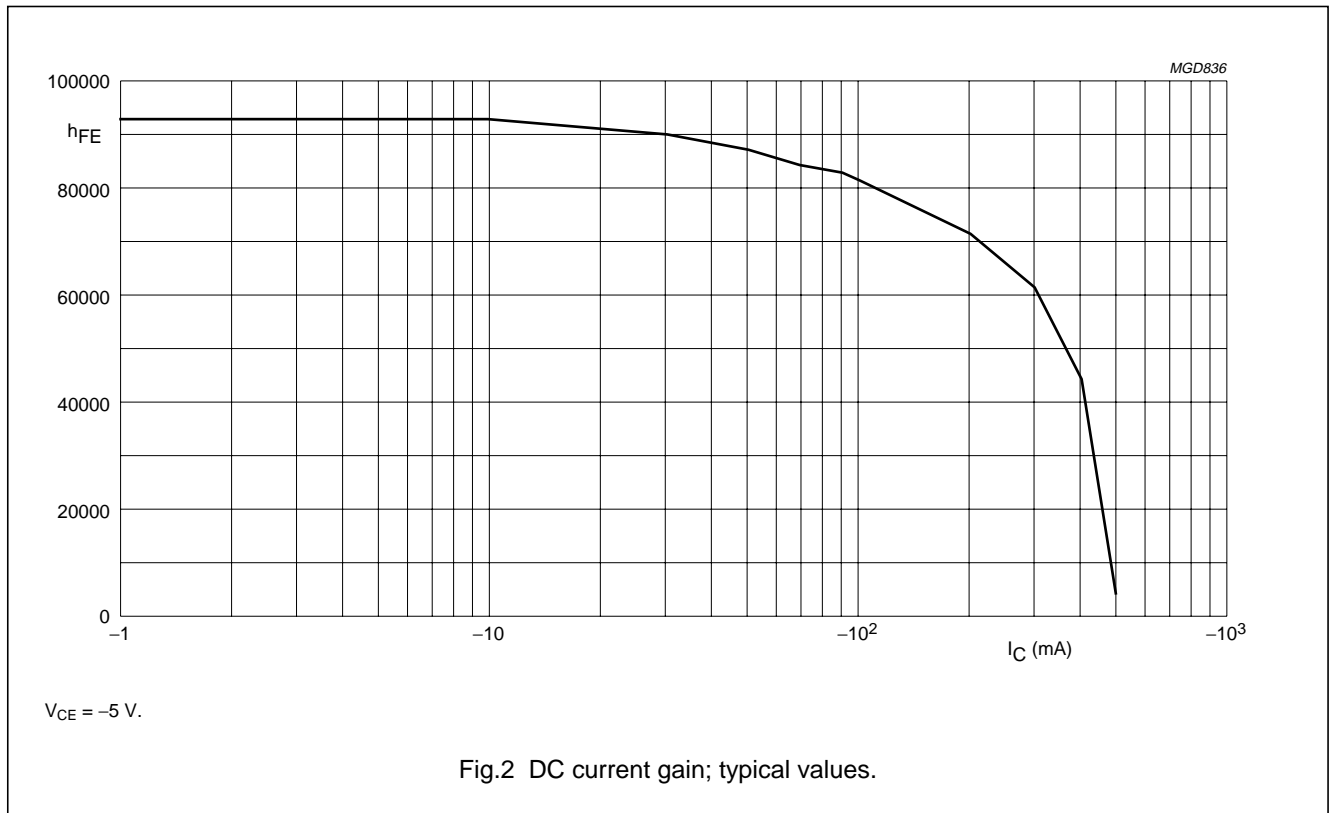
## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$I_{CBO}$	collector cut-off current					
	BCV28	$I_E = 0; V_{CB} = -30\text{ V}$	–	–	–100	nA
	BCV48	$I_E = 0; V_{CB} = -60\text{ V}$	–	–	–100	nA
$I_{EBO}$	emitter cut-off current	$I_C = 0; V_{BE} = -10\text{ V}$	–	–	–100	nA
$h_{FE}$	DC current gain	$I_C = -1\text{ mA}; V_{CE} = -5\text{ V};$ see Fig.2				
	BCV28		4000	–	–	
	BCV48		2000	–	–	
	DC current gain	$I_C = -10\text{ mA}; V_{CE} = -5\text{ V};$ see Fig.2				
	BCV28		10000	–	–	
	BCV48		4000	–	–	
	DC current gain	$I_C = -100\text{ mA}; V_{CE} = -5\text{ V};$ see Fig.2				
	BCV28		20000	–	–	
	BCV48		10000	–	–	
	DC current gain	$I_C = -500\text{ mA}; V_{CE} = -5\text{ V};$ see Fig.2				
	BCV28		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	b <sub>1</sub>	b <sub>2</sub>	b <sub>3</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L min.	w
mm	1.6 1.4	0.48 0.35	0.53 0.40	1.8 1.4	0.44 0.37	4.6 4.4	2.6 2.4	3.0	1.5	4.25 3.75	0.8	0.13

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT89						97-02-28

## PNP Darlington transistors

BCV28; BCV48

**DEFINITIONS**

<b>Data Sheet Status</b>	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
<b>Limiting values</b>	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
<b>Application information</b>	
Where application information is given, it is advisory and does not form part of the specification.	

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PNP Darlington transistors

BCV28; BCV48

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Printed in The Netherlands

115002/00/04/pp8

Date of release: 1999 Apr 08

Document order number: 9397 750 05552

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