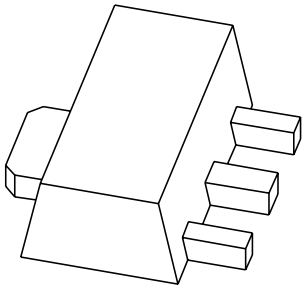
DATA SHEET



BCV28; BCV48
PNP Darlington transistors

Product specification
Supersedes data of 1999 Apr 08

2004 Dec 06

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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

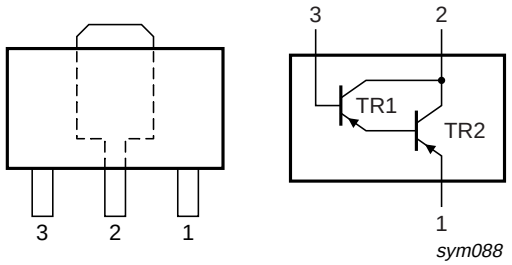


Fig.1 Simplified outline (SOT89) and symbol.

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			

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			
	BCV28		–	–40	V
	BCV48		–	–80	V
V_{CES}	collector-emitter voltage	V_{BE} = 0 V			
	BCV28		–	–30	V
	BCV48		–	–60	V
V_{EBO}	emitter-base voltage	open collector	–	–10	V
I_C	collector current (DC)		–	–500	mA
I_{CM}	peak collector current		–	–800	mA
I_B	base current (DC)		–	–100	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °C; note 1	–	1.3	W
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	150	°C
T_{amb}	ambient temperature		–65	+150	°C

Note

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

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

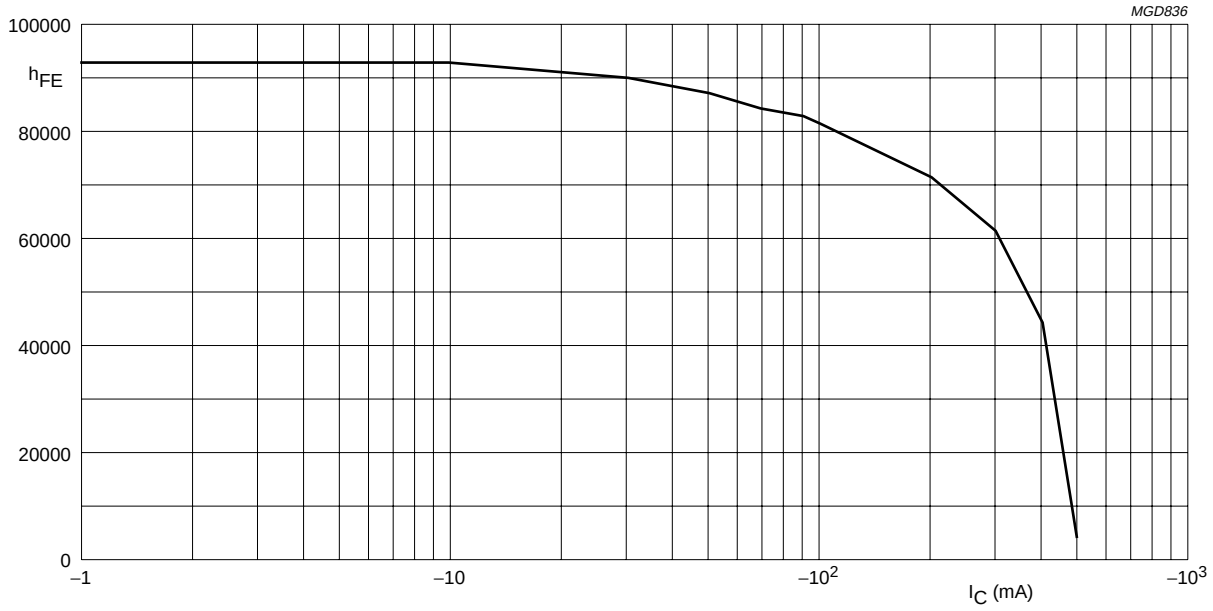
Note

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

CHARACTERISTICS

T_{amb} = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{CBO}	collector-base cut-off current					
	BCV28	I_E = 0 A; V_{CB} = –30 V	–	–	–100	nA
	BCV48	I_E = 0 A; V_{CB} = –60 V	–	–	–100	nA
I_{EBO}	emitter-base cut-off current	I_C = 0 A; V_{BE} = –10 V	–	–	–100	nA
h_{FE}	DC current gain	I_C = –1 mA; V_{CE} = –5 V; see Fig.2				
	BCV28		4000	–	–	
	BCV48		2000	–	–	
	DC current gain	I_C = –10 mA; V_{CE} = –5 V; see Fig.2				
	BCV28		10000	–	–	
	BCV48		4000	–	–	
	DC current gain	I_C = –100 mA; V_{CE} = –5 V; see Fig.2				
	BCV28		20000	–	–	
	BCV48		10000	–	–	
	DC current gain	I_C = –500 mA; V_{CE} = –5 V; see Fig.2				
	BCV28		4000	–	–	
	BCV48		2000	–	–	
V_{CEsat}	collector-emitter saturation voltage	I_C = –100 mA; I_B = –0.1 mA	–	–	–1	V
V_{BEsat}	base-emitter saturation voltage	I_C = –100 mA; I_B = –0.1 mA	–	–	–1.5	V
V_{BEon}	base-emitter on-state voltage	I_C = –10 mA; I_B = –5 mA	–	–	–1.4	V
f_T	transition frequency	I_C = –30 mA; V_{CE} = –5 V; f = 100 MHz	–	220	–	MHz

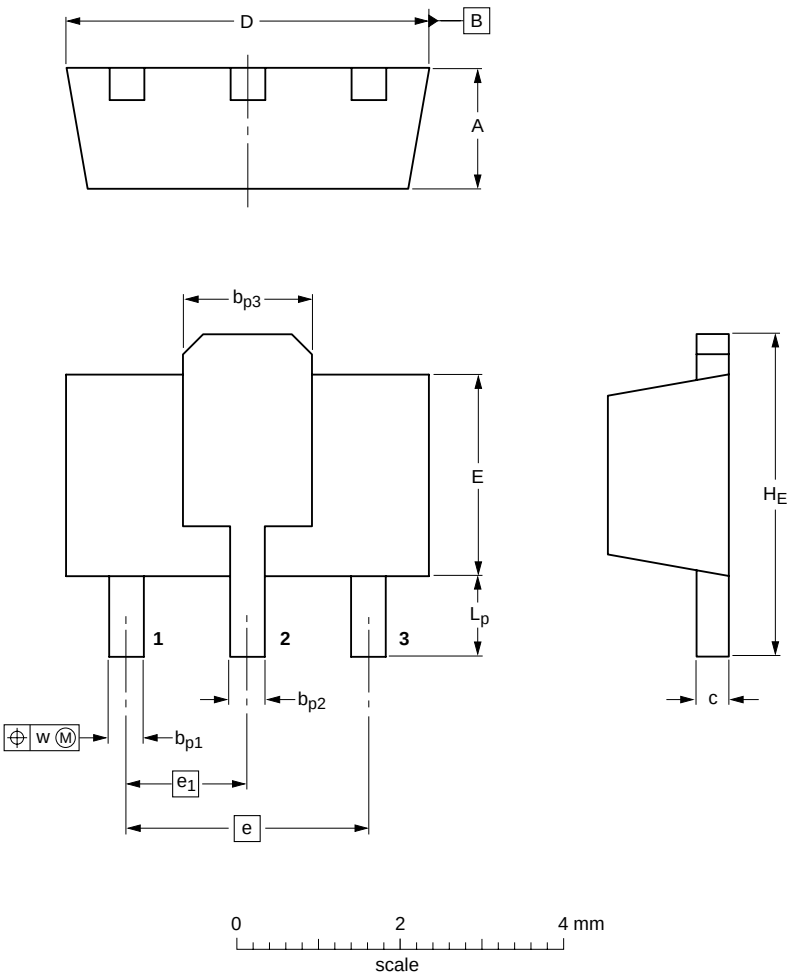


V_{CE} = –5 V.

Fig.2 DC current gain; typical values.

PACKAGE OUTLINE

Plastic surface mounted package; collector pad for good heat transfer; 3 leads **SOT89**



DIMENSIONS (mm are the original dimensions)

UNIT	A	b_{p1}	b_{p2}	b_{p3}	c	D	E	e	e_1	H_E	L_p	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

DATA SHEET STATUS

LEVEL	DATA SHEET STATUS(1)	PRODUCT STATUS(2)(3)	DEFINITION
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Limiting values definition — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). 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.

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