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

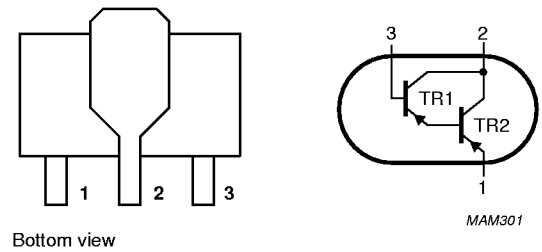


Fig.1 Simplified outline (SOT89) and symbol.

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			
	BCV28		–	–40	V
	BCV48		–	–80	V
V_{CES}	collector-emitter voltage	V_{BE} = 0			
	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}	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^2.
   For other mounting conditions, see *"Thermal considerations for SOT89 in the General Part of associated Handbook"*.

THERMAL CHARACTERISTICS

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

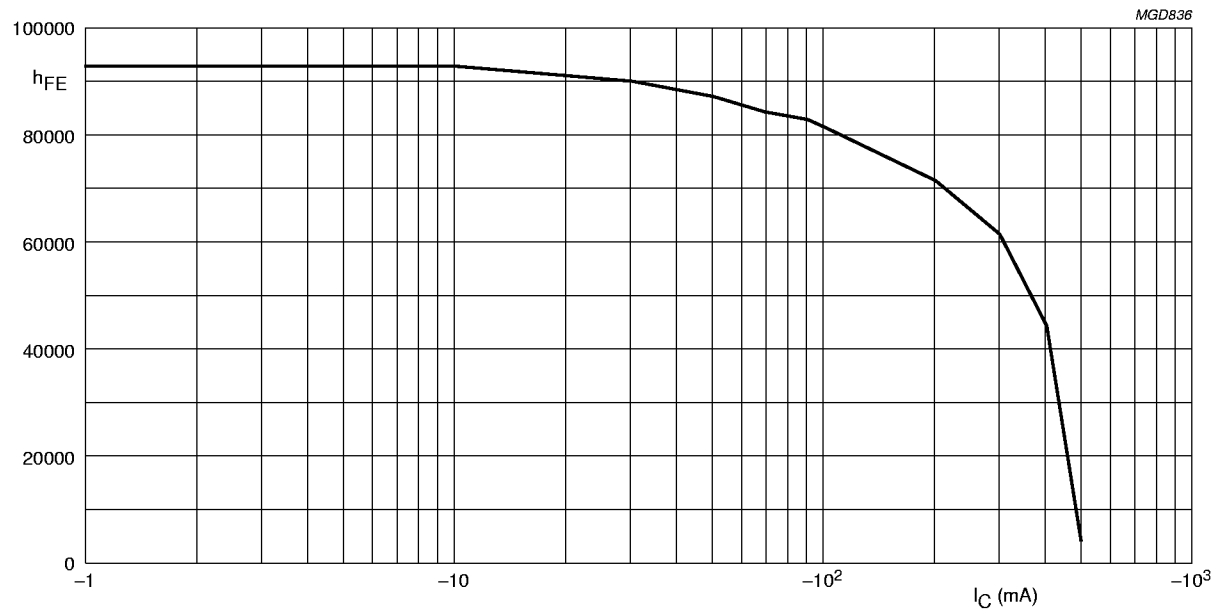
Note

1. Device mounted on a printed-circuit board, single-sided copper, tinplated, mounting pad for collector 6 cm^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 cut-off current					
	BCV28	I_E = 0; V_{CB} = –30 V	–	–	–100	nA
	BCV48	I_E = 0; V_{CB} = –60 V	–	–	–100	nA
I_{EBO}	emitter cut-off current	I_C = 0; 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

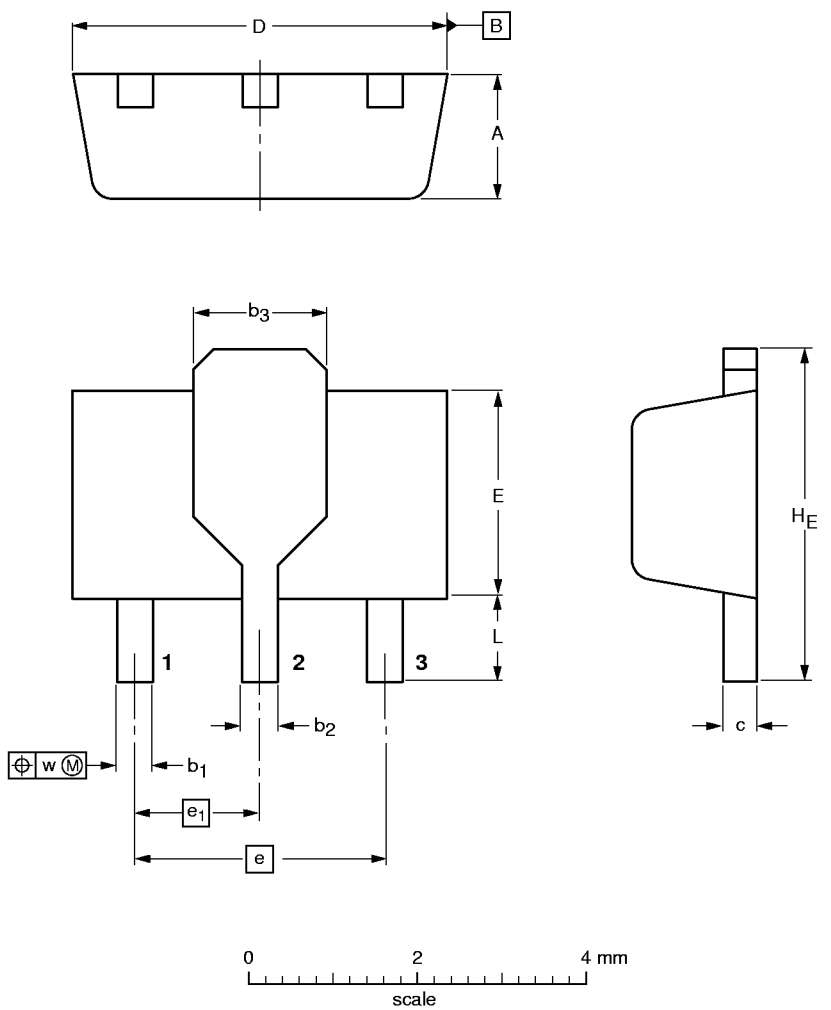


V_{CE} = −5 V.

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_1	b_2	b_3	c	D	E	e	e_1	H_E	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