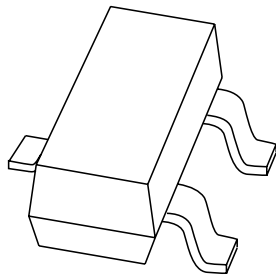


# DATA SHEET



## **BCV27; BCV47** NPN Darlington transistors

Product specification  
Supersedes data of 1999 Apr 08

2004 Jan 13

# NPN Darlington transistors

# BCV27; BCV47

### FEATURES

- Medium current (max. 500 mA)
- Low voltage (max. 60 V)
- High DC current gain (min. 20000).

### APPLICATIONS

- Preamplifier input applications.

### DESCRIPTION

NPN Darlington transistor in a SOT23 plastic package.  
PNP complements: BCV26 and BCV46.

### MARKING

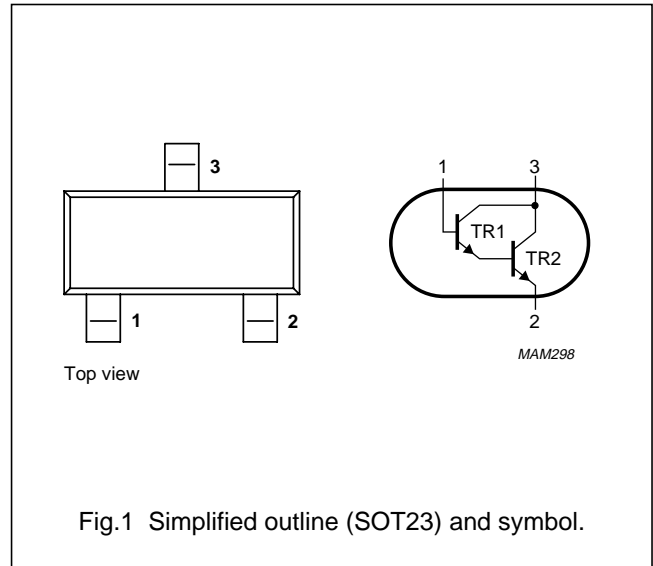
TYPE NUMBER	MARKING CODE <sup>(1)</sup>
BCV27	FF*
BCV47	FG*

### Note

- \* = 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
BCV27	–	plastic surface mounted package; 3 leads	SOT23
BCV47			

## NPN Darlington transistors

## BCV27; BCV47

**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	–	40	V
	BCV27			80	V
V <sub>CES</sub>	collector-emitter voltage	open base	–	30	V
	BCV27			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		–	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.

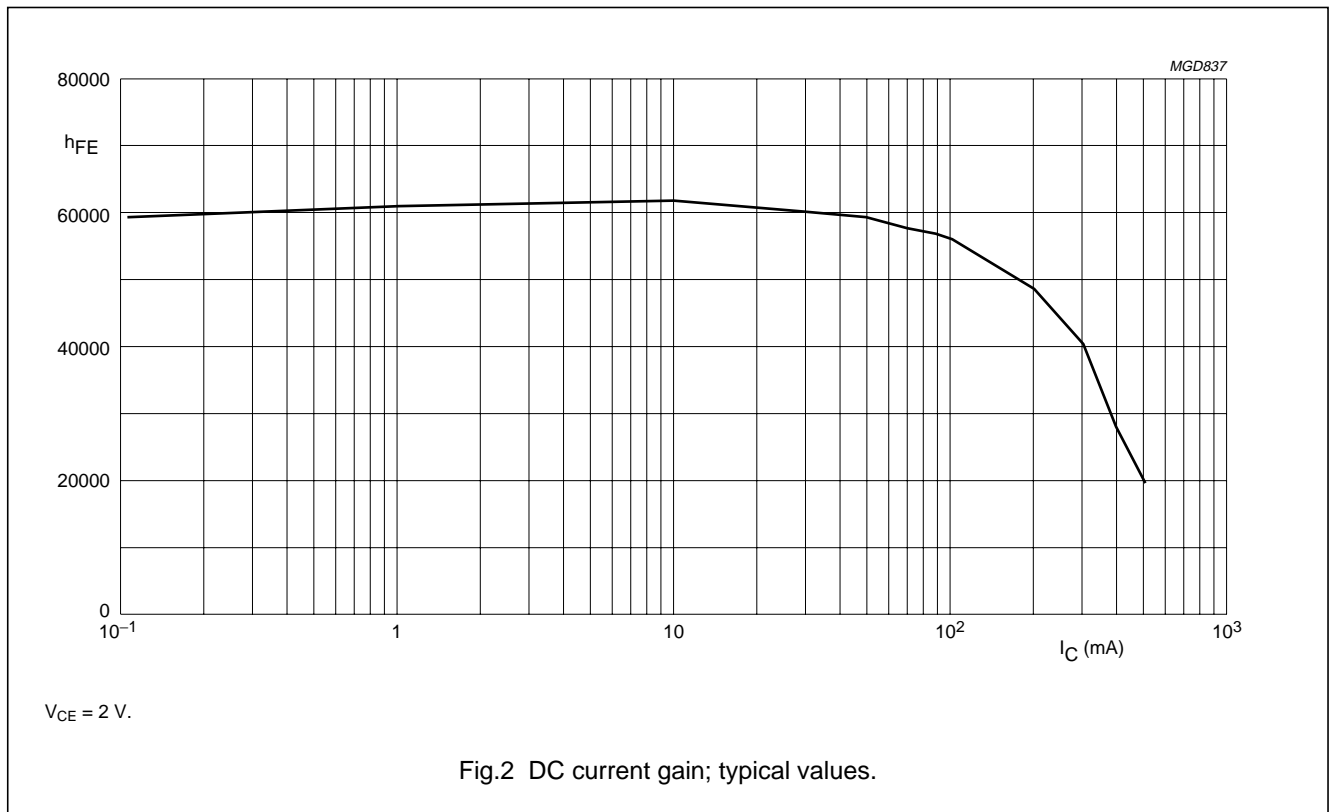
NPN Darlington transistors

BCV27; BCV47

**CHARACTERISTICS**

T<sub>amb</sub> = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I <sub>CBO</sub>	collector cut-off current BCV27 BCV47	I <sub>E</sub> = 0; V <sub>CB0</sub> = 30 V I <sub>E</sub> = 0; V <sub>CB0</sub> = 60 V	–	–	100	nA
I <sub>EBO</sub>	emitter cut-off current	I <sub>E</sub> = 0; V <sub>EB</sub> = 10 V	–	–	100	nA
h <sub>FE</sub>	DC current gain BCV27	V <sub>CE</sub> = 5 V; (see Fig.2)				
		I <sub>C</sub> = 1 mA	4 000	–	–	
		I <sub>C</sub> = 10 mA	10 000	–	–	
	I <sub>C</sub> = 100 mA	20 000	–	–		
DC current gain BCV47	V <sub>CE</sub> = 5 V; (see Fig.2)					
	I <sub>C</sub> = 1 mA	2 000	–	–		
	I <sub>C</sub> = 10 mA	4 000	–	–		
I <sub>C</sub> = 100 mA	10 000	–	–			
V <sub>CEsat</sub>	collector-emitter saturation voltage	I <sub>C</sub> = 100 mA; I <sub>B</sub> = 0.1 mA	–	–	1	V
V <sub>BEsat</sub>	base-emitter saturation voltage	I <sub>C</sub> = 100 mA; I <sub>B</sub> = 0.1 mA	–	–	1.5	V
V <sub>BEon</sub>	base-emitter on-state voltage	I <sub>C</sub> = 10 mA; V <sub>CE</sub> = 5 V	–	–	1.4	V
f <sub>T</sub>	transition frequency	I <sub>C</sub> = 30 mA; V <sub>CE</sub> = 5 V; f = 100 MHz	–	220	–	MHz



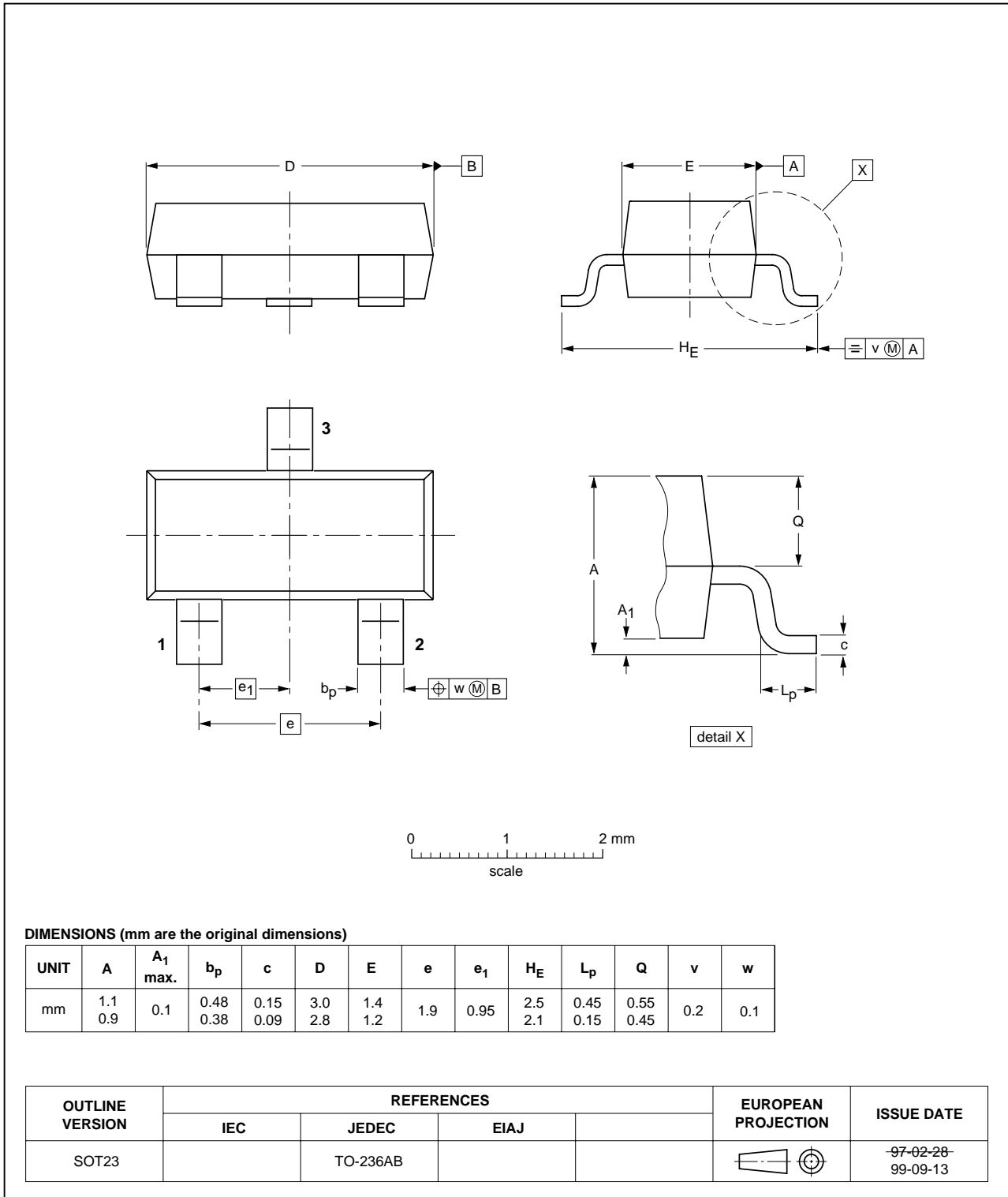
NPN Darlington transistors

BCV27; BCV47

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



## NPN Darlington transistors

BCV27; BCV47

## DATA SHEET STATUS

LEVEL	DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)(3)</sup>	DEFINITION
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