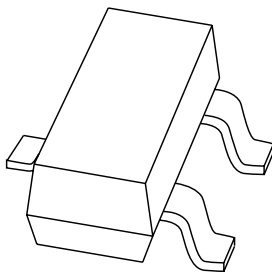




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DATA SHEET



BCV27; BCV47 NPN Darlington transistors

Product data sheet
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 ⁽¹⁾
BCV27	FF*
BCV47	FG*

Note

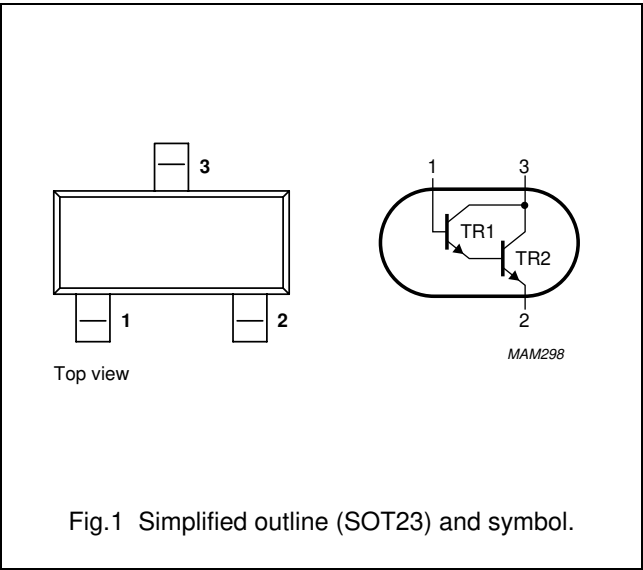
1. * = p : Made in Hong Kong.
 * = t : Made in Malaysia.
 * = W : Made in China.

ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	NAME	DESCRIPTION	VERSION
BCV27	—	plastic surface mounted package; 3 leads	SOT23
BCV47			

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector



NPN Darlington transistors

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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	–	40	V
	BCV27			80	V
V _{CES}	collector-emitter voltage	open base	–	30	V
	BCV27			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		–	100	mA
P _{tot}	total power dissipation	T _{amb} ≤ 25 °C; note 1	–	250	mW
T _{stg}	storage temperature		–65	+150	°C
T _j	junction temperature		–	150	°C
T _{amb}	operating ambient temperature		–65	+150	°C

Note

1. Transistor mounted on an FR4 printed-circuit board.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R _{th(j-a)}	thermal resistance from junction to ambient	note 1	500	K/W

Note

1. Transistor mounted on an FR4 printed-circuit board.

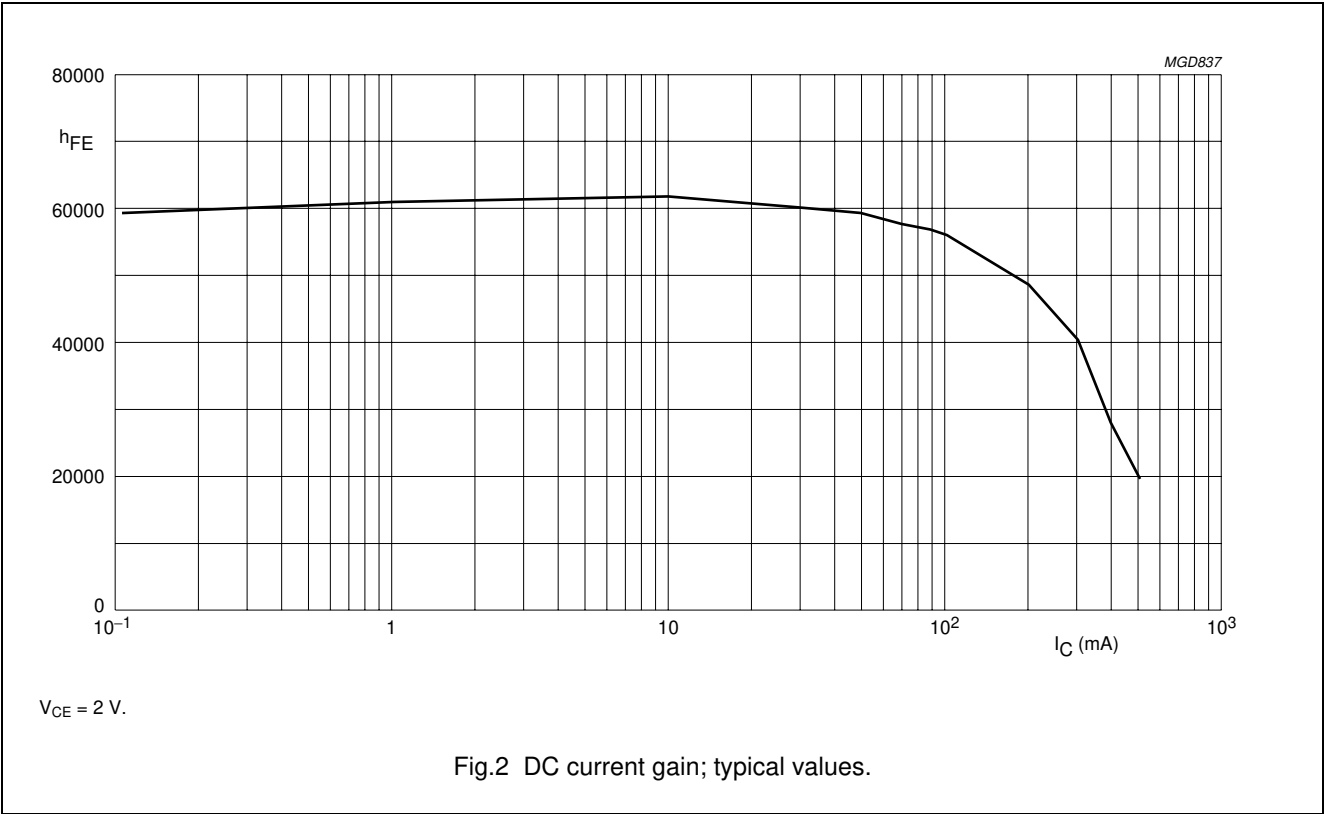
NPN Darlington transistors

BCV27; BCV47

CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I _{CBO}	collector cut-off current					
	BCV27	I _E = 0; V _{CBO} = 30 V	–	–	100	nA
	BCV47	I _E = 0; V _{CBO} = 60 V	–	–	100	nA
I _{EBO}	emitter cut-off current	I _E = 0; V _{EB} = 10 V	–	–	100	nA
h _{FE}	DC current gain	BCV27				
		V _{CE} = 5 V; (see Fig.2)				
		I _C = 1 mA	4 000	–	–	
	DC current gain	BCV27				
		I _C = 10 mA	10 000	–	–	
		I _C = 100 mA	20 000	–	–	
h _{FE}	DC current gain	BCV47				
		V _{CE} = 5 V; (see Fig.2)				
		I _C = 1 mA	2 000	–	–	
	DC current gain	BCV47				
		I _C = 10 mA	4 000	–	–	
		I _C = 100 mA	10 000	–	–	
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; V _{CE} = 5 V	–	–	1.4	V
f _T	transition frequency	I _C = 30 mA; V _{CE} = 5 V; f = 100 MHz	–	220	–	MHz



NPN Darlington transistors

BCV27; BCV47

PACKAGE OUTLINE

Plastic surface-mounted package; 3 leads

SOT23

The diagrams illustrate the SOT23 package dimensions. The top view shows the overall width D and lead spacing e. The side view shows the maximum height A, lead height A1, and lead thickness c. The bottom view shows the lead pitch e1 and the distance from the lead center to the package edge b_p. A detail X shows the lead profile with dimensions L_p and Q. A scale bar indicates 0 to 2 mm.

DIMENSIONS (mm are the original dimensions)													
UNIT	A	A ₁ max.	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT23		TO-236AB				04-11-04 06-03-16

NPN Darlington transistors

BCV27; BCV47

DATA SHEET STATUS

DOCUMENT STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

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Customer notification

This data sheet was changed to reflect the new company name NXP Semiconductors, including new legal definitions and disclaimers. No changes were made to the technical content, except for package outline drawings which were updated to the latest version.

Contact information

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