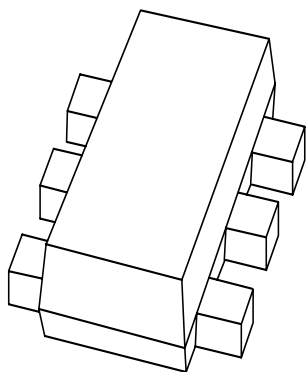


# DATA SHEET



**BC847BV**

NPN general purpose double  
transistor

Product specification

2001 Sep 10

NPN general purpose double transistor

BC847BV

FEATURES

- 300 mW total power dissipation
- Very small 1.6 mm × 1.2 mm × 0.55 mm ultra thin package
- Excellent coplanarity due to straight leads
- Low collector capacitance
- Improved thermal behaviour due to flat leads
- Reduces number of components as replacement of two SC-75/SC-89 packaged BISS transistors
- Reduces required board space
- Reduces pick and place costs.

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

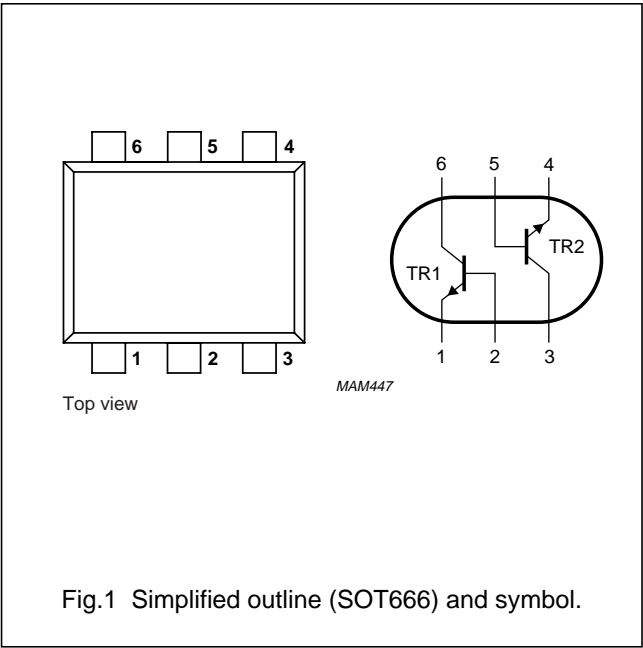
NPN double transistor in a SOT666 plastic package.  
PNP complement: BC857BV.

MARKING

TYPE NUMBER	MARKING CODE
BC847BV	1F

PINNING

PIN	DESCRIPTION
1, 4	emitter TR1; TR2
2, 5	base TR1; TR2
6, 3	collector TR1; TR2



## NPN general purpose double transistor

BC847BV

## LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 60134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
<b>Per transistor</b>					
$V_{CBO}$	collector-base voltage	open emitter	–	50	V
$V_{CEO}$	collector-emitter voltage	open base	–	45	V
$V_{EBO}$	emitter-base voltage	open collector	–	5	V
$I_C$	collector current (DC)		–	100	mA
$I_{CM}$	peak collector current		–	200	mA
$I_{BM}$	peak base current		–	200	mA
$P_{tot}$	total power dissipation	$T_{amb} \leq 25\text{ °C}$ ; note 1	–	200	mW
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	150	°C
$T_{amb}$	operating ambient temperature		–65	+150	°C
<b>Per device</b>					
$P_{tot}$	total power dissipation	$T_{amb} \leq 25\text{ °C}$ ; note 1	–	300	mW

## 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	notes 1 and 2	416	K/W

## Notes

1. Transistor mounted on an FR4 printed-circuit board.
2. The only recommended soldering method is reflow soldering.

NPN general purpose double transistor

BC847BV

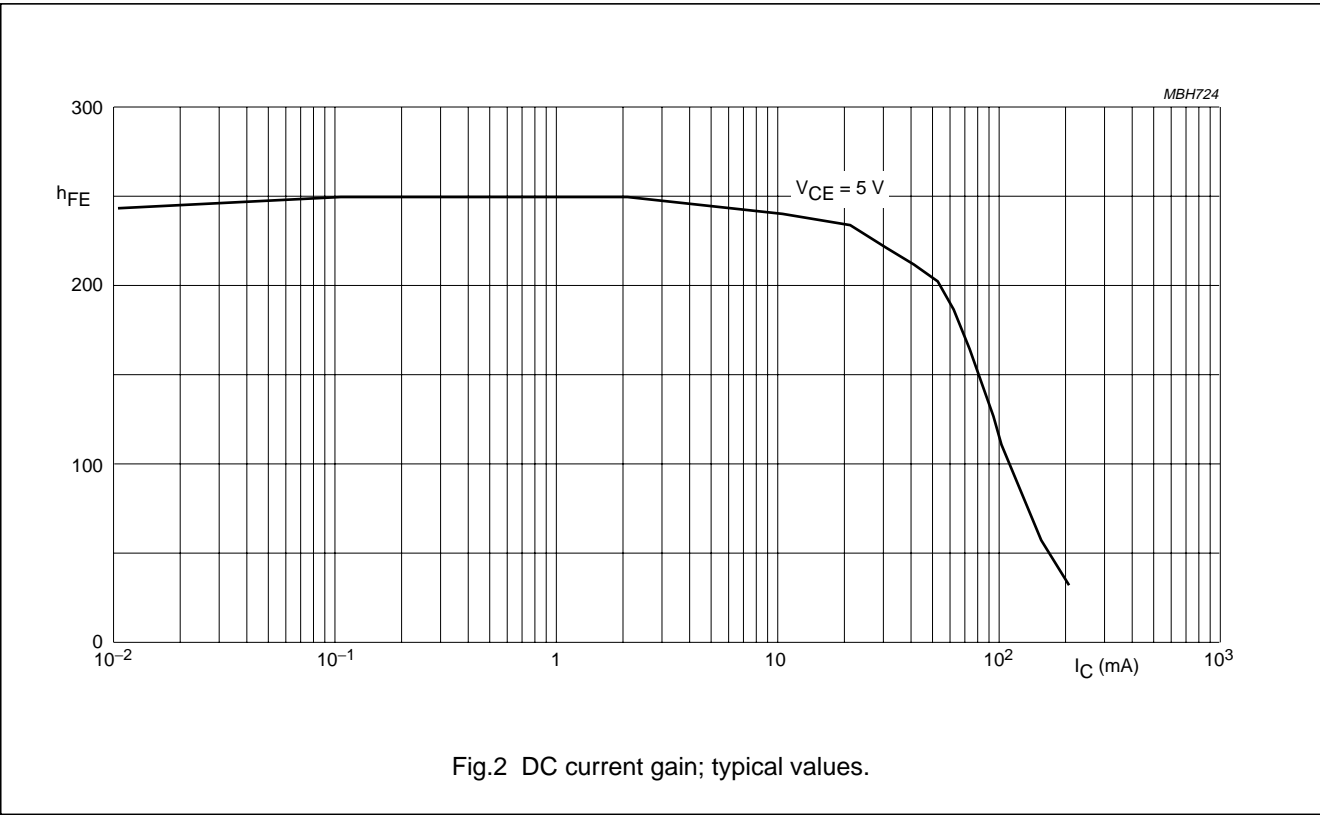
CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Per transistor						
I <sub>CBO</sub>	collector-base cut-off current	I <sub>E</sub> = 0; V <sub>CB</sub> = 30 V	–	–	15	nA
		I <sub>E</sub> = 0; V <sub>CB</sub> = 30 V; T <sub>j</sub> = 150 °C	–	–	5	µA
I <sub>EBO</sub>	emitter-base cut-off current	I <sub>C</sub> = 0; V <sub>EB</sub> = 5 V	–	–	100	nA
h <sub>FE</sub>	DC current gain	I <sub>C</sub> = 2 mA; V <sub>CE</sub> = 5 V	200	–	450	
V <sub>BE</sub>	base-emitter voltage	I <sub>C</sub> = 2 mA; V <sub>CE</sub> = 5 V	580	655	700	mV
V <sub>CEsat</sub>	collector-emitter saturation voltage	I <sub>C</sub> = 10 mA; I <sub>B</sub> = 0.5 mA	–	–	100	mV
		I <sub>C</sub> = 100 mA; I <sub>B</sub> = 5 mA; note 1	–	–	300	mV
V <sub>BEsat</sub>	base-emitter saturation voltage	I <sub>C</sub> = 10 mA; I <sub>B</sub> = 0.5 mA	–	755	–	mV
C <sub>c</sub>	collector capacitance	I <sub>E</sub> = I <sub>e</sub> = 0; V <sub>CB</sub> = 10 V; f = 1 MHz	–	–	1.5	pF
C <sub>e</sub>	emitter capacitance	I <sub>C</sub> = i <sub>c</sub> = 0; V <sub>EB</sub> = 500 mV; f = 1 MHz	–	11	–	pF
f <sub>T</sub>	transition frequency	I <sub>C</sub> = 10 mA; V <sub>CE</sub> = 5 V; f = 100 MHz	100	–	–	MHz

Note

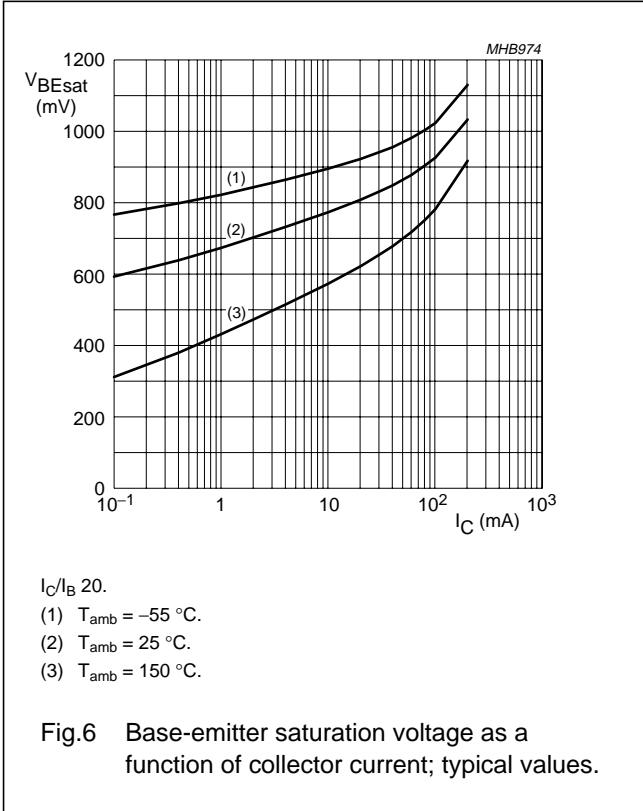
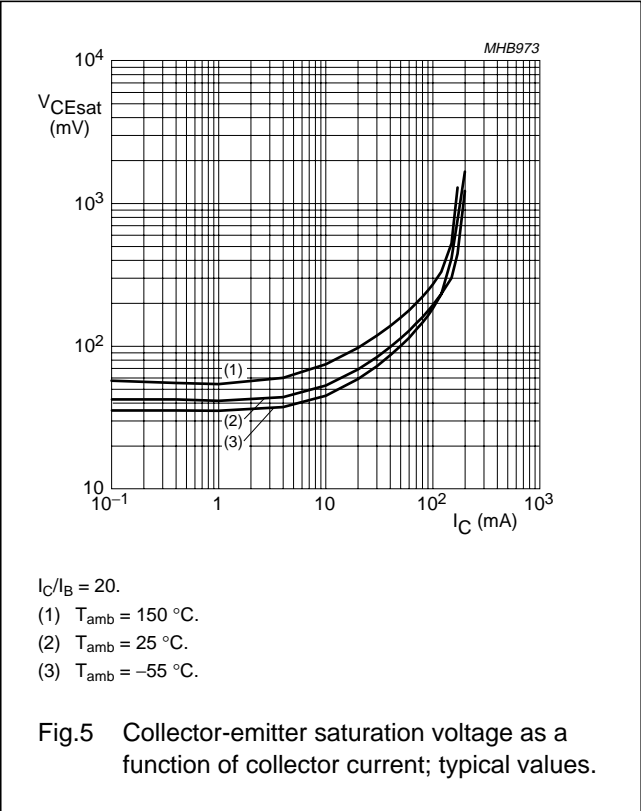
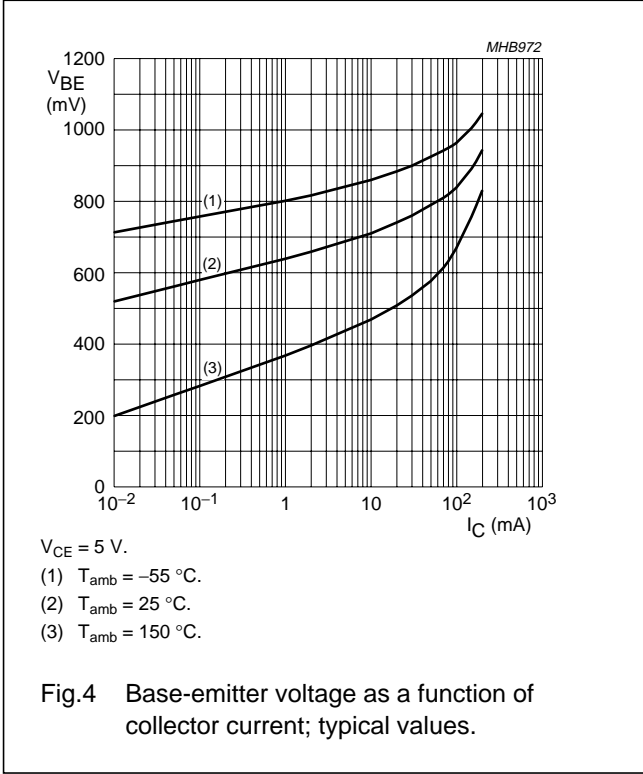
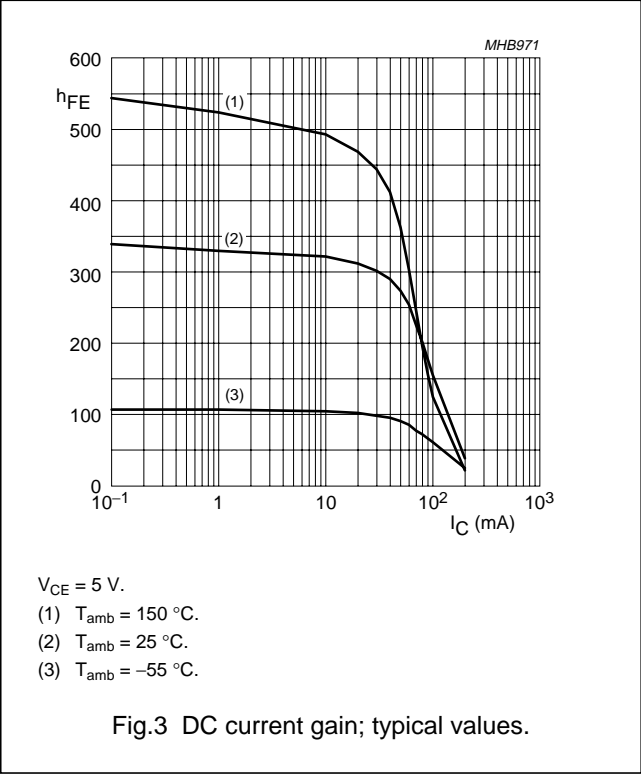
1. Pulse test: t<sub>p</sub> ≤ 300 µs; δ ≤ 0.02.



NPN general purpose double transistor

BC847BV

Graphical information BC847BV



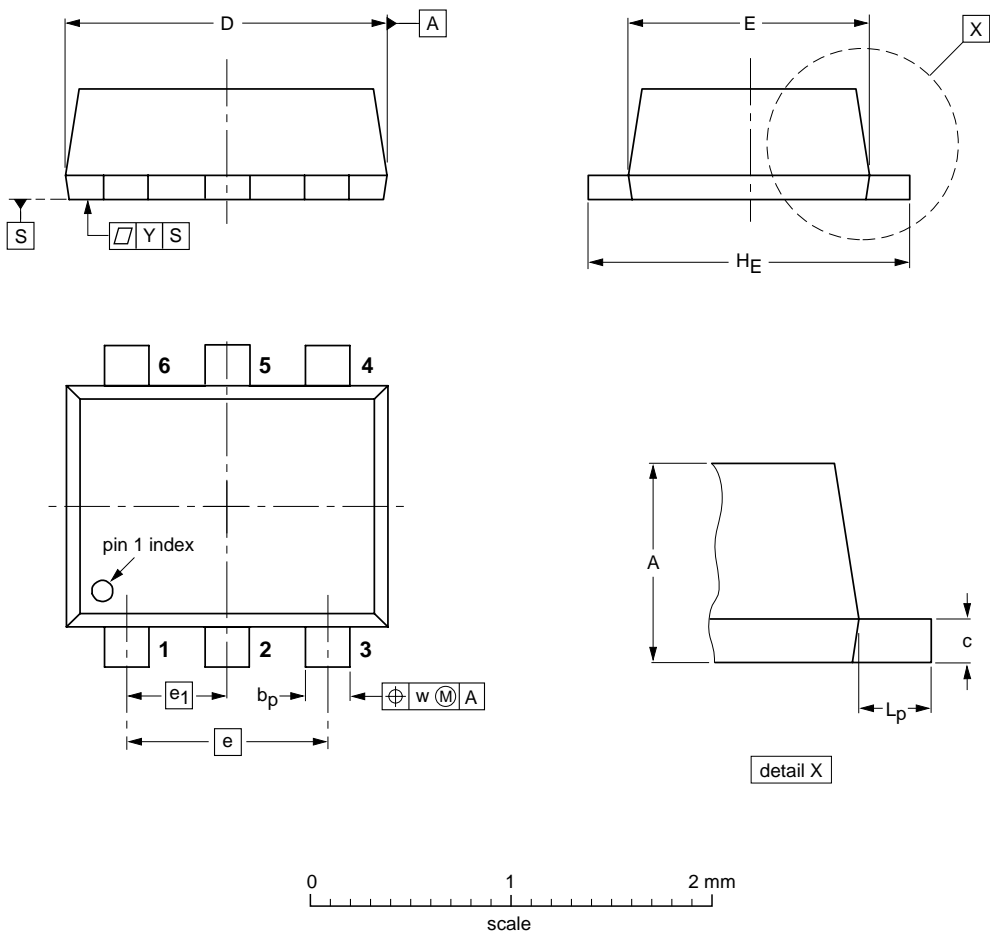
NPN general purpose double transistor

BC847BV

PACKAGE OUTLINE

Plastic surface mounted package; 6 leads

SOT666



DIMENSIONS (mm are the original dimensions)

UNIT	A	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	w	y
mm	0.6 0.5	0.27 0.17	0.18 0.08	1.7 1.5	1.3 1.1	1.0	0.5	1.7 1.5	0.3 0.1	0.1	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT666						-01-01-04 01-08-27

## NPN general purpose double transistor

BC847BV

## DATA SHEET STATUS

DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	DEFINITIONS
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Printed in The Netherlands

613514/01/pp8

Date of release: 2001 Sep 10

Document order number: 9397 750 08589

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