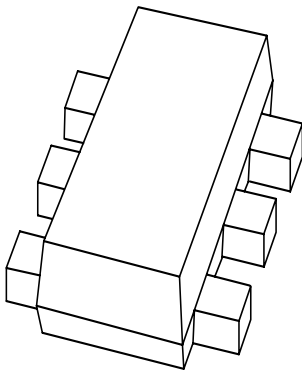


DATA SHEET



BC857BV

PNP general purpose double
transistor

Product data sheet
Supersedes data of 2001 Aug 10

2001 Nov 07

PNP general purpose double transistor

BC857BV

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
- 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

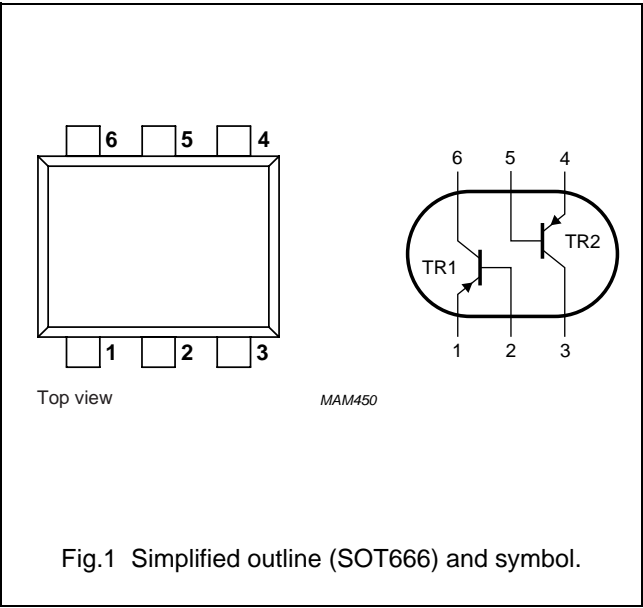
PNP double transistor in a SOT666 plastic package.
NPN complement: BC847BV.

MARKING

TYPE NUMBER	MARKING CODE
BC857BV	3F

PINNING

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



PNP general purpose double transistor

BC857BV

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
Per transistor					
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
Per device					
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.

PNP general purpose double transistor

BC857BV

CHARACTERISTICS

$T_{amb} = 25\text{ }^{\circ}\text{C}$; unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Per transistor						
I_{CBO}	collector-base cut-off current	$I_E = 0; V_{CB} = -30\text{ V}$	–	–	–15	nA
		$I_E = 0; V_{CB} = -30\text{ V}; T_J = 150\text{ }^{\circ}\text{C}$	–	–	–5	μA
I_{EBO}	emitter-base cut-off current	$I_C = 0; V_{EB} = -5\text{ V}$	–	–	–100	nA
h_{FE}	DC current gain	$I_C = -2\text{ mA}; V_{CE} = -5\text{ V}$	200	–	450	
V_{BE}	base-emitter voltage	$I_C = -2\text{ mA}; V_{CE} = -5\text{ V}$	–600	–655	–750	mV
V_{CEsat}	collector-emitter saturation voltage	$I_C = -10\text{ mA}; I_B = -0.5\text{ mA}$	–	–	–100	mV
		$I_C = -100\text{ mA}; I_B = -5\text{ mA}; \text{note 1}$	–	–	–400	mV
V_{BEsat}	base-emitter saturation voltage	$I_C = -10\text{ mA}; I_B = -0.5\text{ mA}$	–	–755	–	mV
C_c	collector capacitance	$I_E = i_e = 0; V_{CB} = -10\text{ V}; f = 1\text{ MHz}$	–	–	2.2	pF
C_e	emitter capacitance	$I_C = i_c = 0; V_{EB} = -500\text{ mV}; f = 1\text{ MHz}$	–	10	–	pF
f_T	transition frequency	$I_C = -10\text{ mA}; V_{CE} = -5\text{ V}; f = 100\text{ MHz}$	100	–	–	MHz

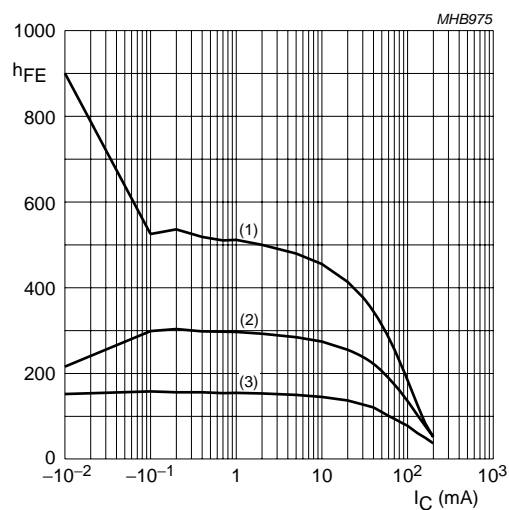
Note

1. Pulse test: $t_p \leq 300\text{ }\mu\text{s}$; $\delta \leq 0.02$.

PNP general purpose double transistor

BC857BV

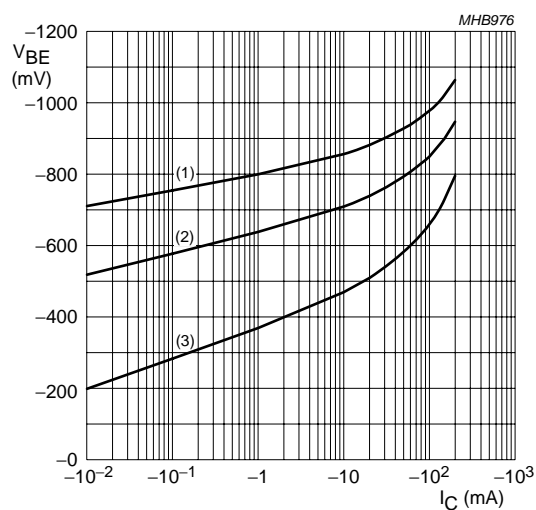
Graphical information BC857BV



$V_{CE} = -5 \text{ V}$.

- (1) $T_{amb} = 150 \text{ }^{\circ}\text{C}$.
- (2) $T_{amb} = 25 \text{ }^{\circ}\text{C}$.
- (3) $T_{amb} = -55 \text{ }^{\circ}\text{C}$.

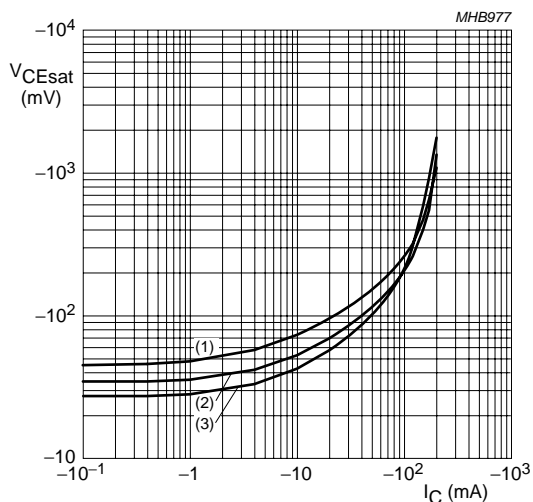
Fig.2 DC current gain; typical values.



$V_{CE} = -5 \text{ V}$.

- (1) $T_{amb} = -55 \text{ }^{\circ}\text{C}$.
- (2) $T_{amb} = 25 \text{ }^{\circ}\text{C}$.
- (3) $T_{amb} = 150 \text{ }^{\circ}\text{C}$.

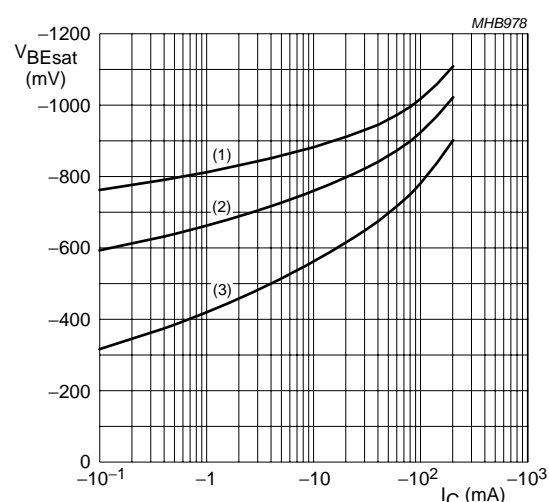
Fig.3 Base-emitter voltage as a function of collector current; typical values.



$I_C/I_B = 20$.

- (1) $T_{amb} = 150 \text{ }^{\circ}\text{C}$.
- (2) $T_{amb} = 25 \text{ }^{\circ}\text{C}$.
- (3) $T_{amb} = -55 \text{ }^{\circ}\text{C}$.

Fig.4 Collector-emitter saturation voltage as a function of collector current; typical values.



$I_C/I_B = 20$.

- (1) $T_{amb} = -55 \text{ }^{\circ}\text{C}$.
- (2) $T_{amb} = 25 \text{ }^{\circ}\text{C}$.
- (3) $T_{amb} = 150 \text{ }^{\circ}\text{C}$.

Fig.5 Base-emitter saturation voltage as a function of collector current; typical values.

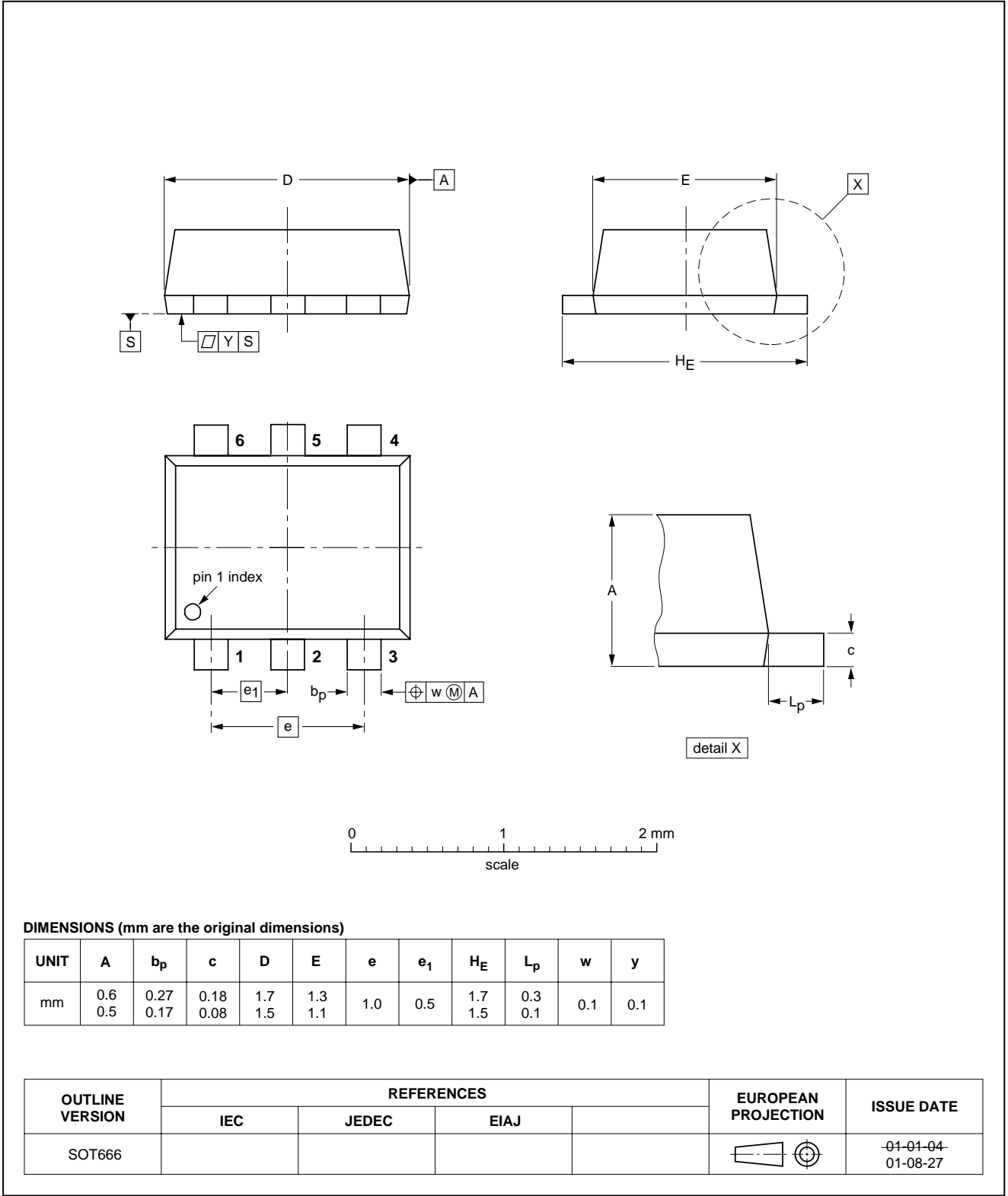
PNP general purpose double transistor

BC857BV

PACKAGE OUTLINE

Plastic surface mounted package; 6 leads

SOT666



PNP general purpose double transistor

BC857BV

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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