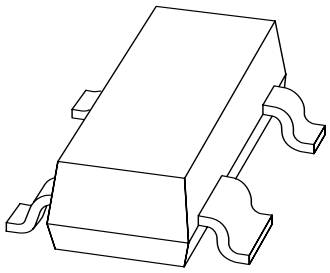
DATA SHEET



BCV64B
PNP general purpose double transistor

Product specification
Supersedes data of 1997 Mar 10

1999 May 21

Philips
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PNP general purpose double transistor BCV64B

FEATURES

- Low current (max. 100 mA)
- Low voltage (max. 30 and 6 V).

APPLICATIONS

- General purpose switching and amplification
- For use in Schmitt-trigger applications.

DESCRIPTION

PNP double transistor in a SOT143B plastic package.
NPN complement: BCV63B.

MARKING

TYPE NUMBER	MARKING CODE
BCV64B	C96

PINNING

PIN	DESCRIPTION
1	collector TR2 and base TR1
2	collector TR1
3	emitter TR1 and TR2
4	base TR2

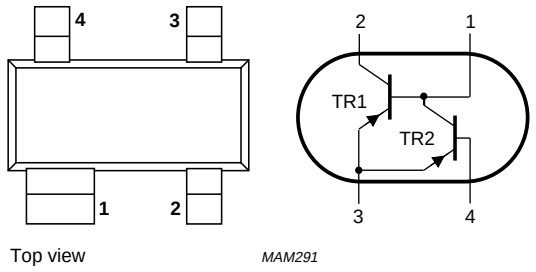


Fig.1 Simplified outline (SOT143B) and symbol.

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			
	TR1		–	–30	V
	TR2		–	–6	V
V_{CEO}	collector-emitter voltage	open base			
	TR1		–	–30	V
	TR2		–	–6	V
V_{EBO}	emitter-base voltage	open collector	–	–6	V
I_C	collector current (DC)		–	–100	mA
I_{CM}	peak collector current		–	–200	mA
I_B	base current (DC)		–	–100	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °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 a printed-circuit board.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j\text{-}a}$	thermal resistance from junction to ambient	note 1	500	K/W

Note

1. Transistor mounted on a printed-circuit board.

CHARACTERISTICS

T_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{CBO}	collector cut-off current	I_E = 0; V_{CB} = –30 V	–	–	–15	nA
		I_E = 0; V_{CB} = –30 V; T_j = 150 °C	–	–	–5	µA
h_{FE}	DC current gain					
	TR1	I_C = –2 mA; V_{CE} = –5 V	220	–	475	
	TR2	I_C = –2 mA; V_{CE} = –700 mV; note 1	220	–	475	
V_{CEsat}	collector-emitter saturation voltage	I_C = –10 mA; I_B = –0.5 mA	–	–75	–300	mV
	collector-emitter saturation voltage	I_C = –100 mA; I_B = –5 mA				
	TR1		–	–250	–650	mV
	TR2		–	–250	–	mV
V_{BEsat}	base-emitter saturation voltage	I_C = –10 mA; I_B = –0.5 mA; note 2	–	–700	–	mV
	base-emitter saturation voltage	I_C = –100 mA; I_B = –5 mA; note 2				
	TR1		–	–850	–	mV
V_{BE}	base-emitter voltage					
	TR1	I_C = –2 mA; V_{CE} = –5 V; note 3	–600	–650	–750	mV
	TR1	I_C = –10 mA; V_{CE} = –5 V; note 3	–	–	–820	mV
	TR2	I_C = –2 mA; V_{CE} = –700 mV; note 3	–	–700	–	mV
C_c	collector capacitance	I_E = i_e = 0; V_{CB} = –10 V; f = 1 MHz				
	TR1		–	4	–	pF
f_T	transition frequency	I_C = –10 mA; V_{CE} = –5 V;				
	TR1	f = 100 MHz	100	–	–	MHz

Notes

1. Group selection will be done on TR1. Due to matched dies, h_{FE} values for TR2 are the same as for TR1.
2. V_{BEsat} decreases by approximately 1.7 mV/K with increasing temperature.
3. V_{BE} decreases by approximately –2 mV/K with increasing temperature.

APPLICATION INFORMATION

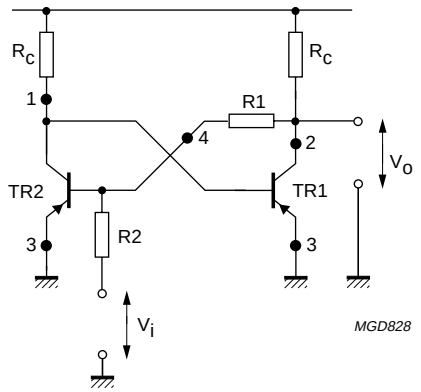
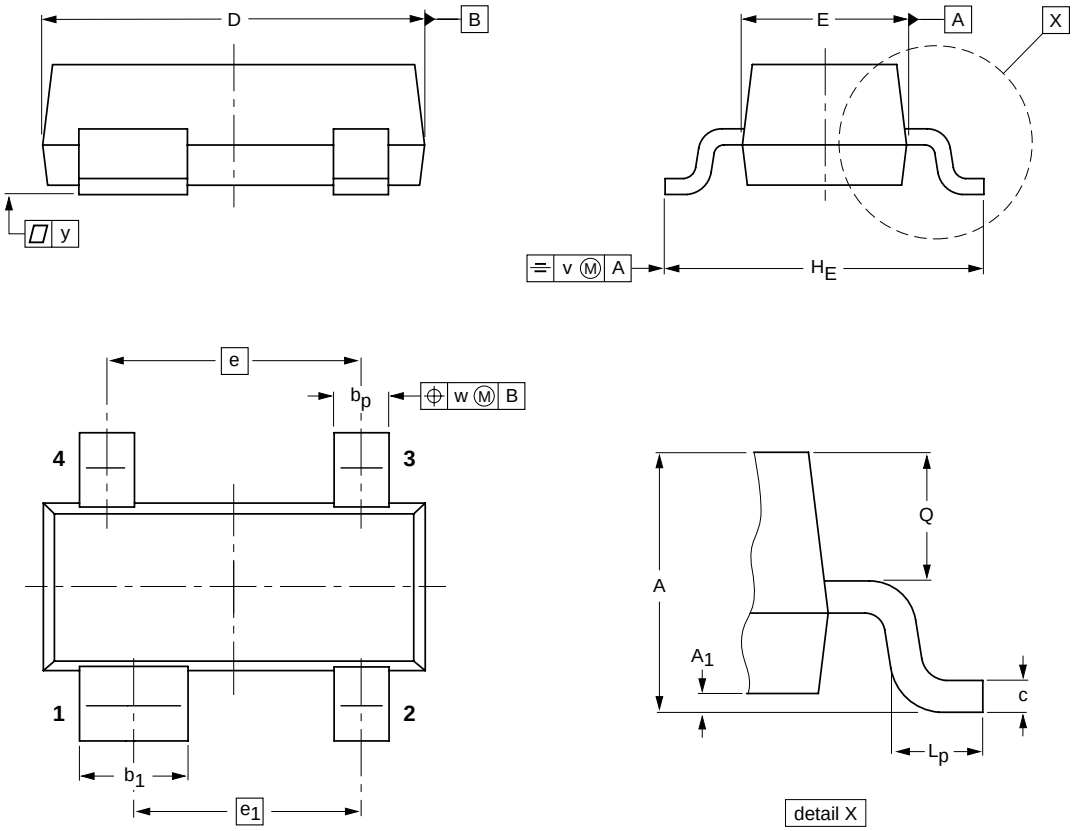


Fig.2 Schmitt-trigger application.

PACKAGE OUTLINE

Plastic surface mounted package; 4 leads **SOT143B**



DIMENSIONS (mm are the original dimensions)

UNIT	A	A_1 max	b_p	b_1	c	D	E	e	e_1	H_E	L_p	Q	v	w	y
mm	1.1 0.9	0.1	0.48 0.38	0.88 0.78	0.15 0.09	3.0 2.8	1.4 1.2	1.9	1.7	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT143B						97-02-28

DEFINITIONS

Data Sheet Status	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
Limiting values	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
Application information	
Where application information is given, it is advisory and does not form part of the specification.	

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