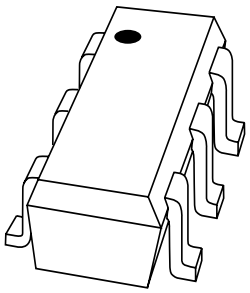
DATA SHEET



BC857BS
PNP general purpose double transistor

Product data sheet
Supersedes data of 1997 Jul 09

1999 Apr 26

PNP general purpose double transistor BC857BS

FEATURES

- Low collector capacitance
- Low collector-emitter saturation voltage
- Closely matched current gain
- Reduces number of components and boardspace
- No mutual interference between the transistors.

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

PNP double transistor in an SC-88; SOT363 plastic package. NPN complement: BC847BS.

MARKING

TYPE NUMBER	MARKING CODE
BC857BS	3Ft

PINNING

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

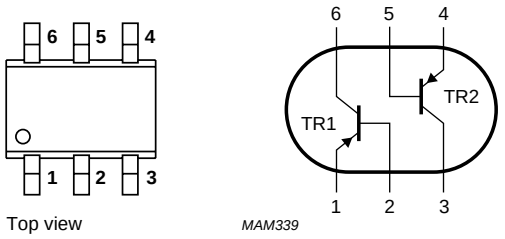


Fig.1 Simplified outline (SC-88; SOT363) and symbol.

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

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	$T_{amb} \leq 25$ °C	–	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	Tamb ≤ 25 °C; note 1	–	300	mW

Note

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

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
Per device				
$R_{th\ j\text{-}a}$	thermal resistance from junction to ambient	note 1	416	K/W

Note

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

CHARACTERISTICS

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

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

Note

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

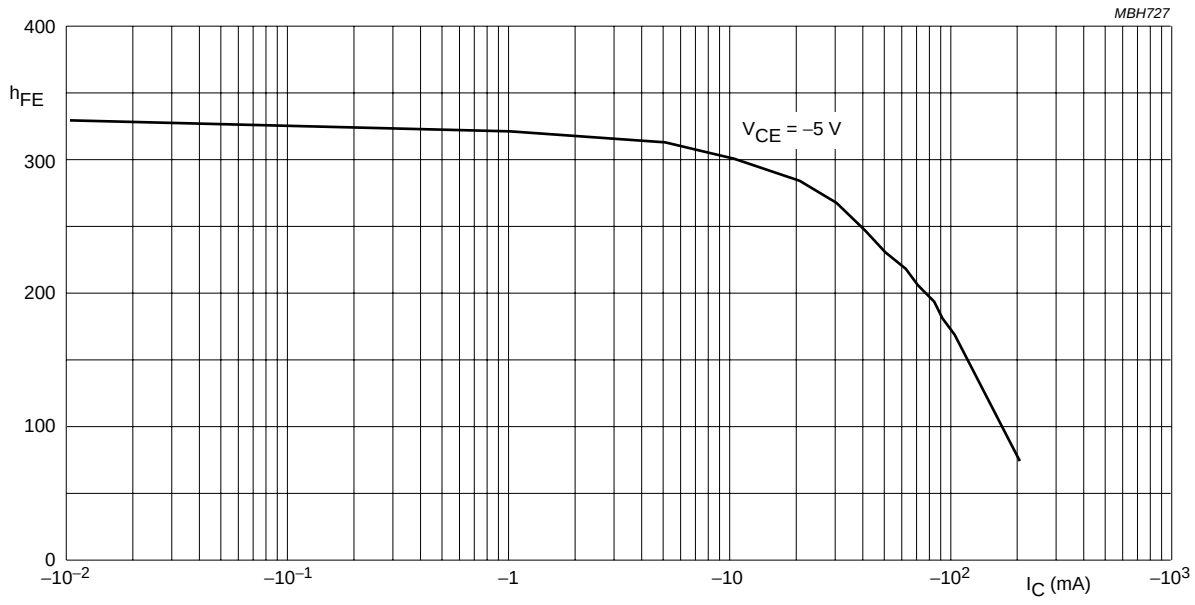
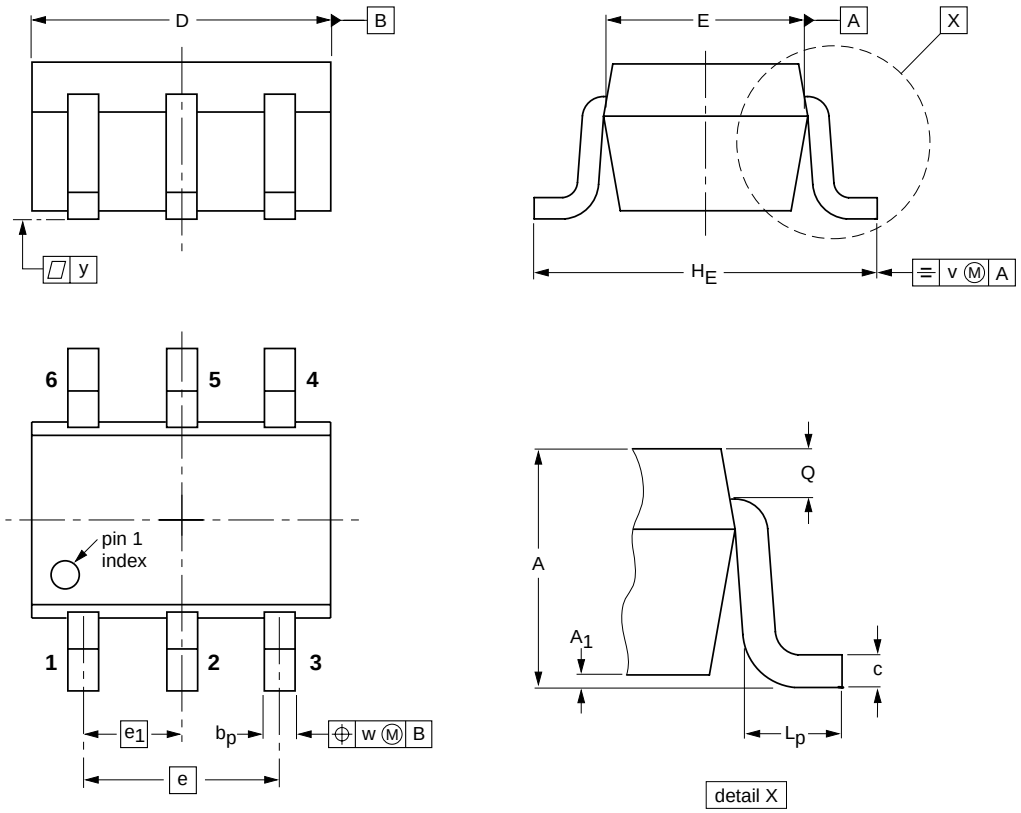


Fig.2 DC current gain; typical values

PACKAGE OUTLINE

Plastic surface mounted package; 6 leads **SOT363**



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	y
mm	1.1 0.8	0.1	0.30 0.20	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.25 0.15	0.2	0.2	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT363			SC-88			97-02-28

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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