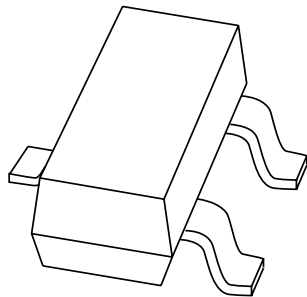


DATA SHEET



BC856; BC857 PNP general purpose transistors

Product specification
Supersedes data of 1997 Apr 17

1999 Apr 12

PNP general purpose transistors

BC856; BC857

FEATURES

- Low current (max. 100 mA)
- Low voltage (max. 65 V).

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

PNP transistor in a SOT23 plastic package.
NPN complements: BC846 and BC847.

MARKING

TYPE NUMBER	MARKING CODE ⁽¹⁾	TYPE NUMBER	MARKING CODE ⁽¹⁾
BC856	3D*	BC857A	3E*
BC856A	3A*	BC857B	3F*
BC856B	3B*	BC857C	3G*
BC857	3H*		

Note

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

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector

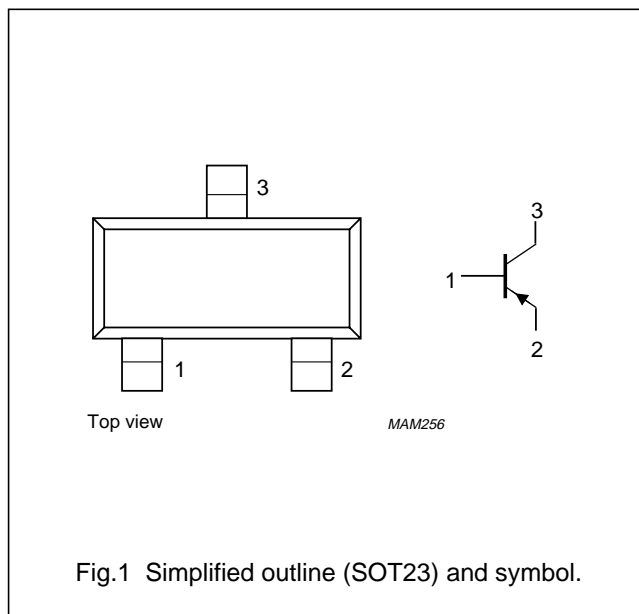


Fig.1 Simplified outline (SOT23) and symbol.

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			
	BC856		–	–80	V
	BC857		–	–50	V
V_{CEO}	collector-emitter voltage	open base			
	BC856		–	–65	V
	BC857		–	–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	–	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. Mounted on an FR4 printed-circuit board.

PNP general purpose transistors

BC856; BC857

THERMAL CHARACTERISTICS

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

Note

1. Mounted on an FR4 printed-circuit board.

CHARACTERISTICS

$T_j = 25\text{ }^{\circ}\text{C}$ unless otherwise specified.

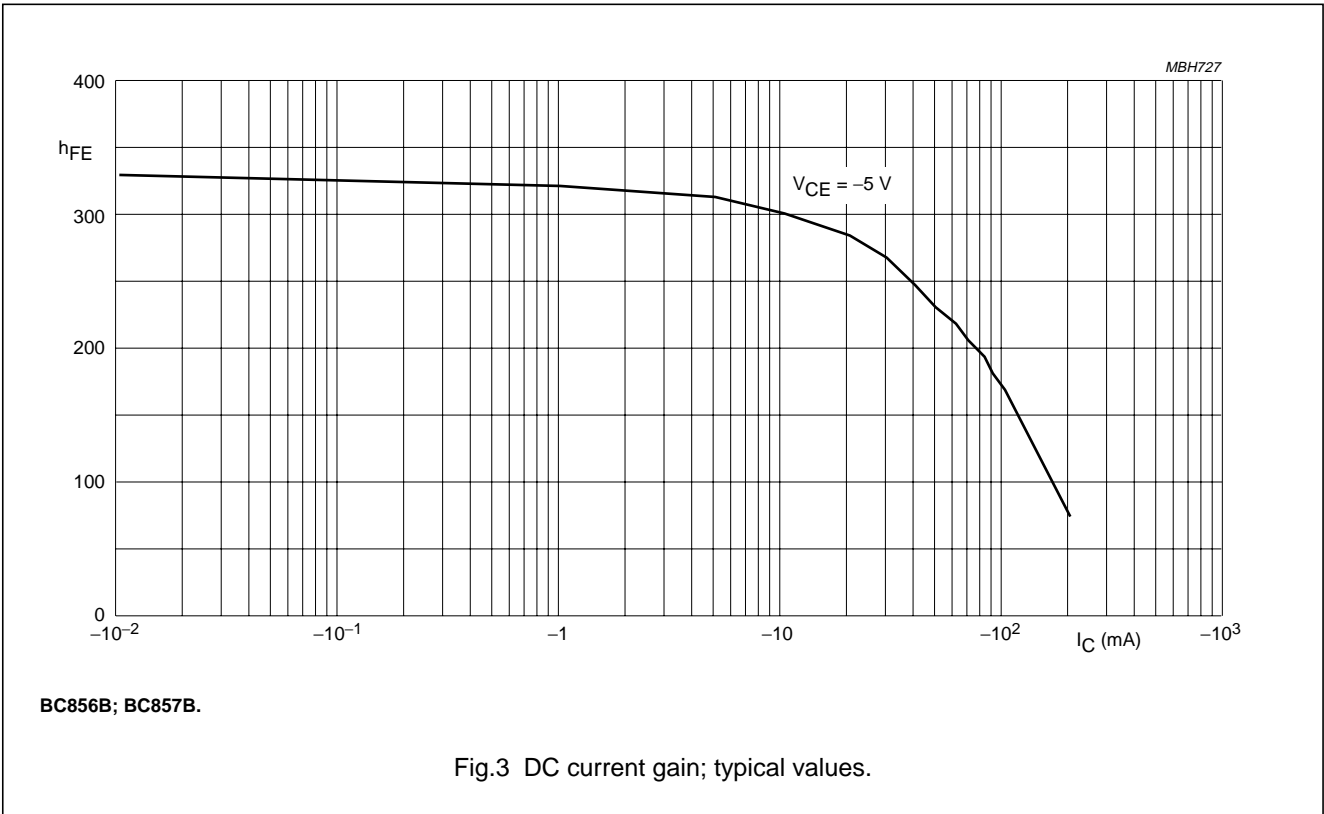
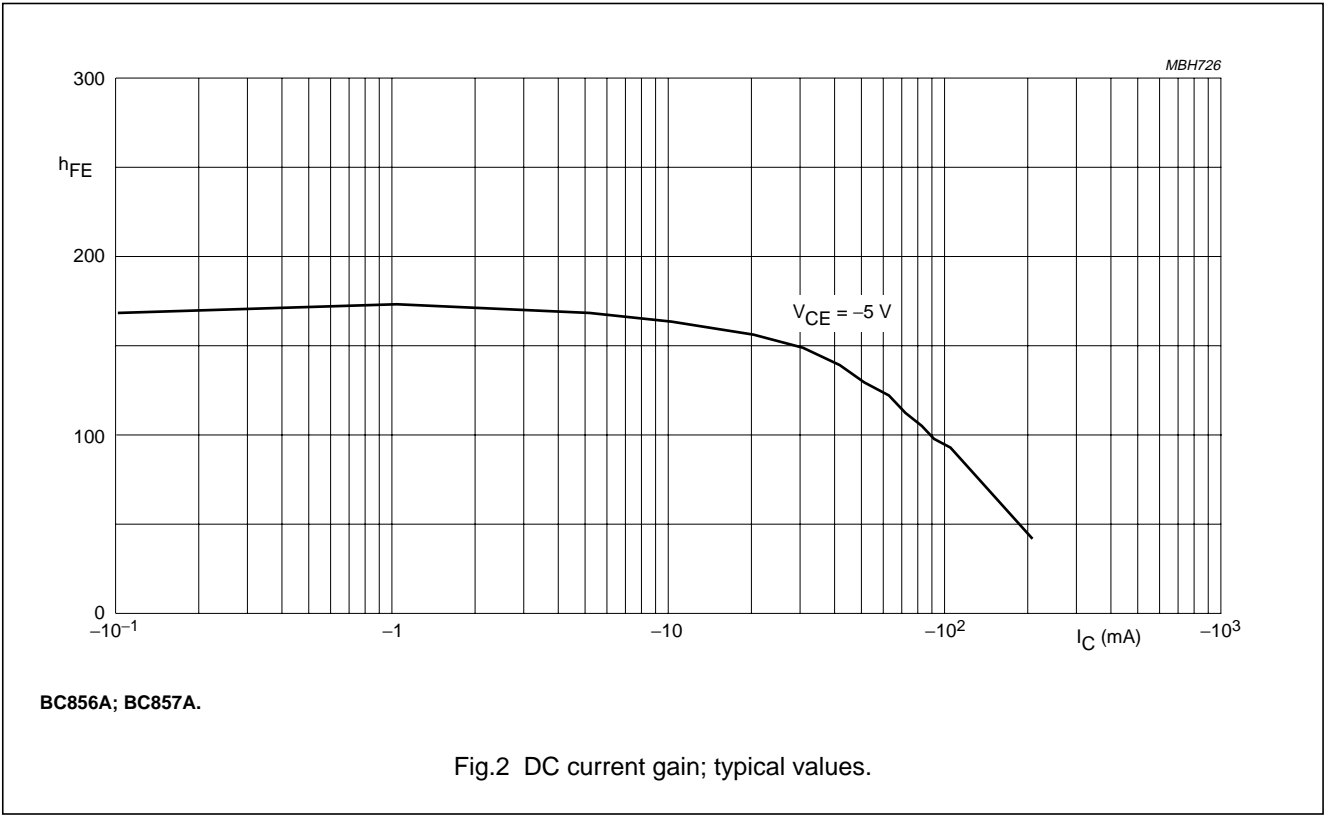
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{CBO}	collector cut-off current	$I_E = 0; V_{CB} = -30\text{ V}$	–	–1	–15	nA
		$I_E = 0; V_{CB} = -30\text{ V}; T_j = 150\text{ }^{\circ}\text{C}$	–	–	–4	μA
I_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = -5\text{ V}$	–	–	100	nA
h_{FE}	DC current gain	$I_C = -2\text{ mA}; V_{CE} = -5\text{ V};$ see Figs 2, 3 and 4	125	–	475	
	BC856					
	BC857					
	BC856A; BC857A					
	BC856B; BC857B					
	BC857C		420	–	800	
V_{CEsat}	collector-emitter saturation voltage	$I_C = -10\text{ mA}; I_B = -0.5\text{ mA}$	–	–75	–300	mV
		$I_C = -100\text{ mA}; I_B = -5\text{ mA}$	–	–250	–650	mV
V_{BEsat}	base-emitter saturation voltage	$I_C = -10\text{ mA}; I_B = -0.5\text{ mA};$ note 1	–	–700	–	mV
		$I_C = -100\text{ mA}; I_B = -5\text{ mA};$ note 1	–	–850	–	mV
V_{BE}	base-emitter voltage	$I_C = -2\text{ mA}; V_{CE} = -5\text{ V};$ note 2	–600	–650	–750	mV
		$I_C = -10\text{ mA}; V_{CE} = -5\text{ V};$ note 2	–	–	–820	mV
C_c	collector capacitance	$I_E = I_{\bar{e}} = 0; V_{CB} = -10\text{ V}; f = 1\text{ MHz}$	–	4.5	–	pF
f_T	transition frequency	$I_C = -10\text{ mA}; V_{CE} = -5\text{ V};$ $f = 100\text{ MHz}$	100	–	–	MHz
F	noise figure	$I_C = -200\text{ }\mu\text{A}; V_{CE} = -5\text{ V};$ $R_S = 2\text{ k}\Omega; f = 1\text{ kHz}; B = 200\text{ Hz}$	–	2	10	dB

Notes

1. V_{BEsat} decreases by about -1.7 mV/K with increasing temperature.
2. V_{BE} decreases by about -2 mV/K with increasing temperature.

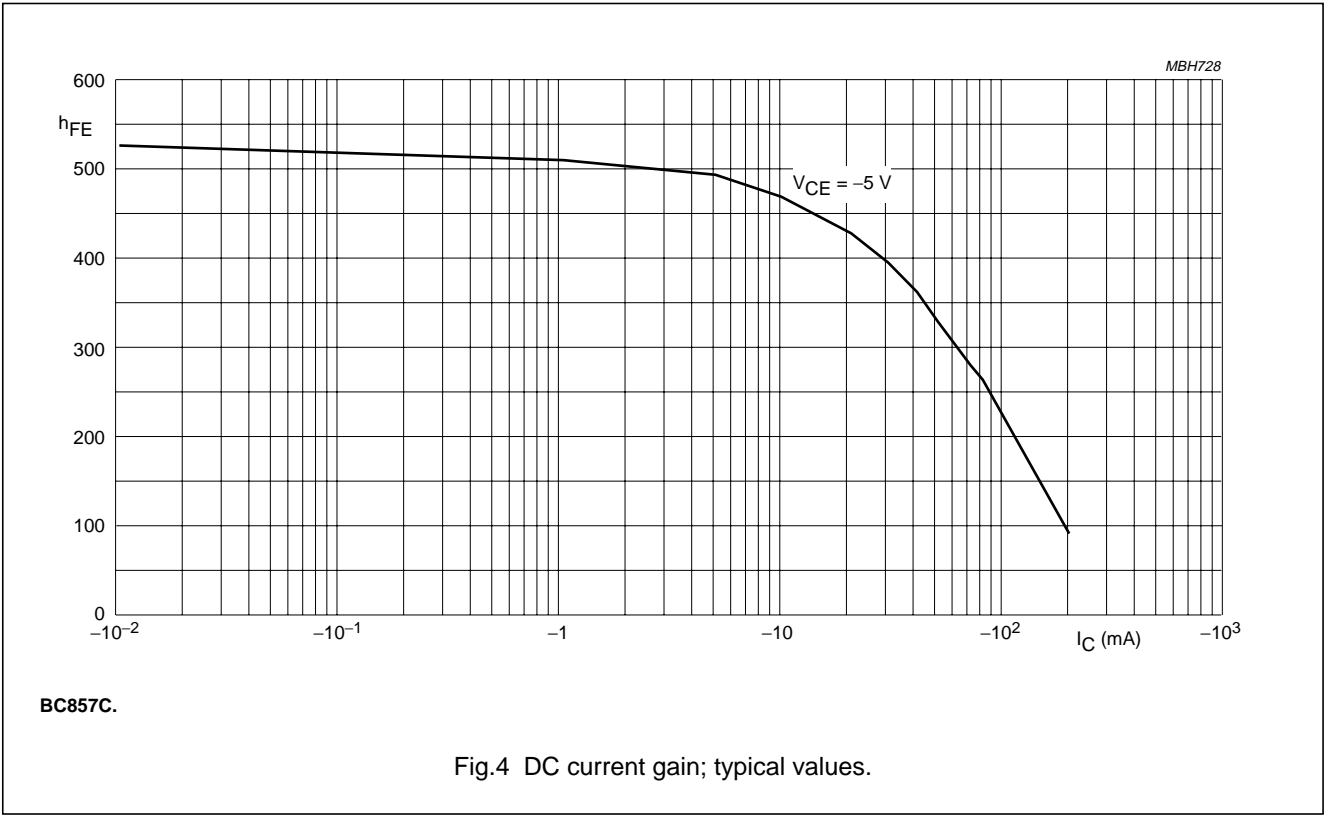
PNP general purpose transistors

BC856; BC857



PNP general purpose transistors

BC856; BC857



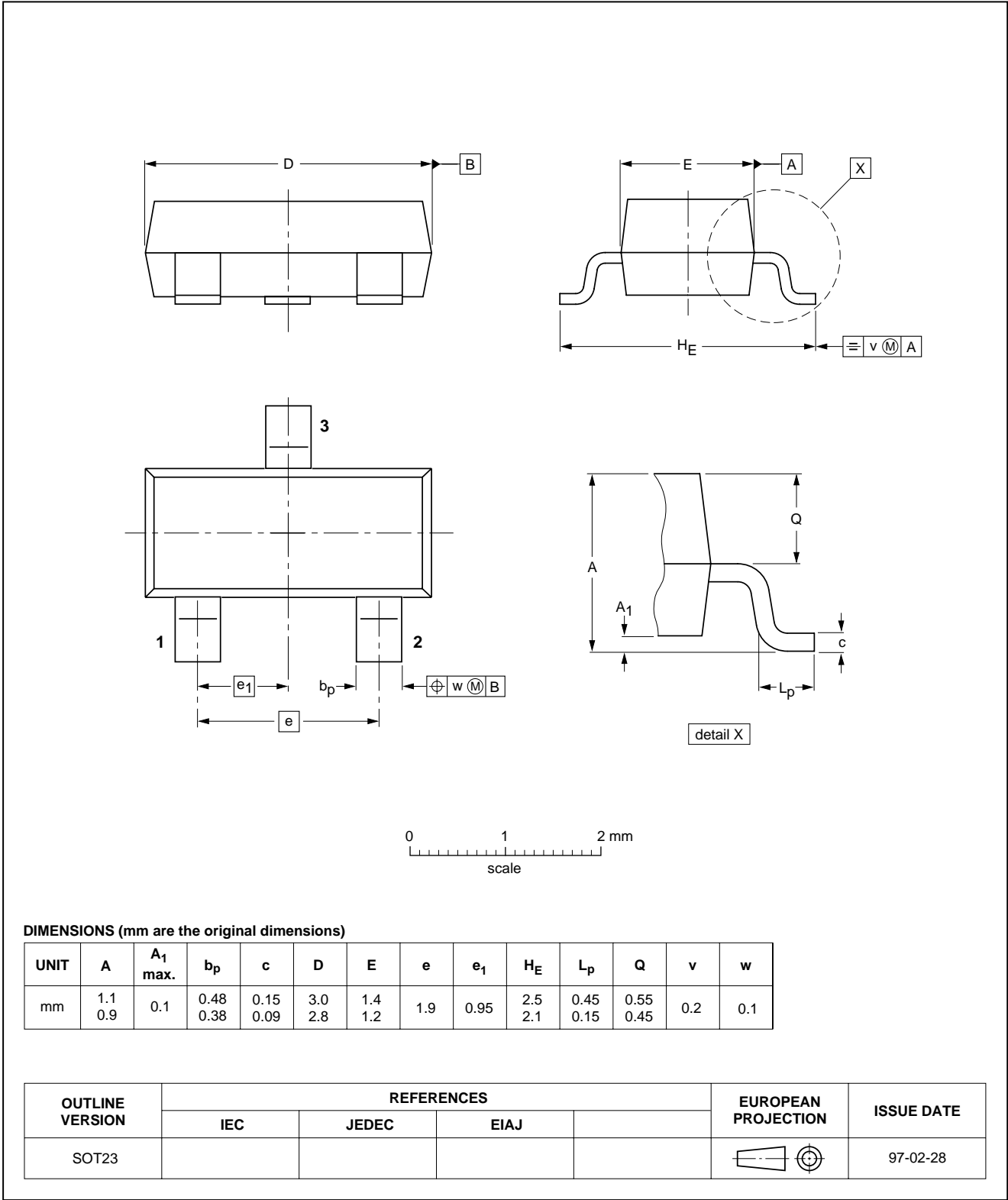
PNP general purpose transistors

BC856; BC857

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



PNP general purpose transistors

BC856; BC857

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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