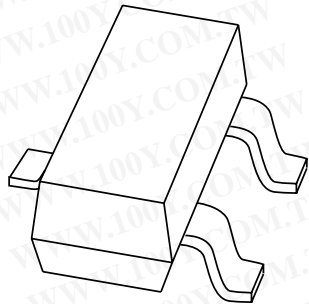


DATA SHEET

勝特力材料 886-3-5753170
勝特力电子(上海) 86-21-54151736
勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)



BC846; BC847; BC848 NPN general purpose transistors

Product specification
Supersedes data of 1999 Apr 23

2002 Feb 04

NPN general purpose transistors

BC846; BC847; BC848

FEATURES

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

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

NPN transistor in a SOT23 plastic package.
 PNP complements: BC856, BC857 and BC858.

MARKING

TYPE NUMBER	MARKING CODE ⁽¹⁾
BC846	1D*
BC846A	1A*
BC846B	1B*
BC847	1H*
BC847A	1E*
BC847B	1F*
BC847C	1G*
BC848B	1K*

Note

- * = p: made in Hong Kong.
 * = t: made in Malaysia.

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector

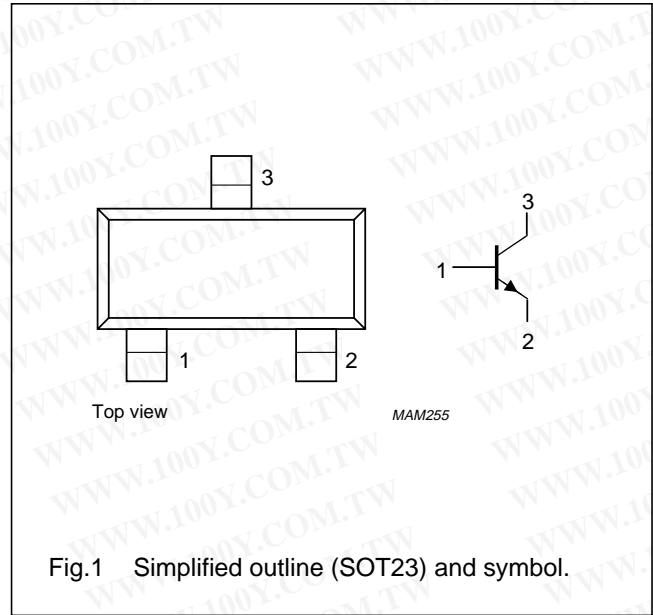


Fig.1 Simplified outline (SOT23) and symbol.

NPN general purpose transistors

BC846; BC847; BC848

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{CBO}	collector-base voltage	open emitter			
	BC846		–	80	V
	BC847		–	50	V
	BC848		–	30	V
V _{CEO}	collector-emitter voltage	open base			
	BC846		–	65	V
	BC847		–	45	V
	BC848		–	30	V
V _{EBO}	emitter-base voltage	open collector			
	BC846; BC847		–	6	V
	BC848		–	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} ≤ 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 an FR4 printed-circuit board, standard footprint.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R _{th j-a}	thermal resistance from junction to ambient	in free air; note 1	500	K/W

Note

1. Transistor mounted on an FR4 printed-circuit board, standard footprint.

NPN general purpose transistors

BC846; BC847; BC848

CHARACTERISTICS

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

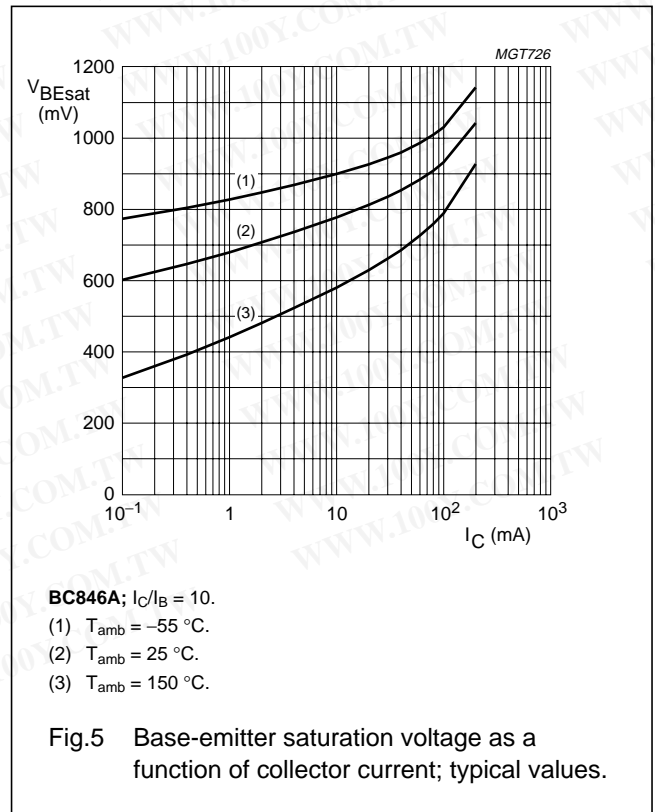
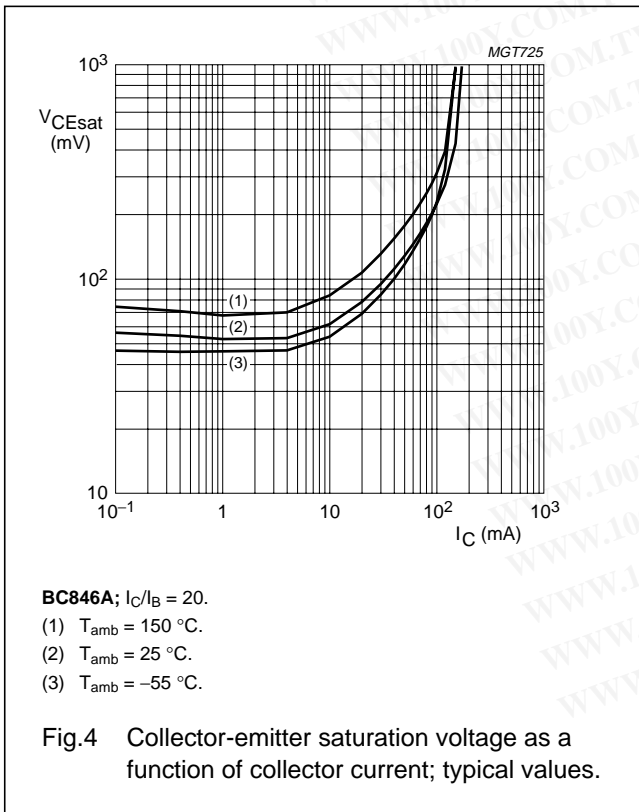
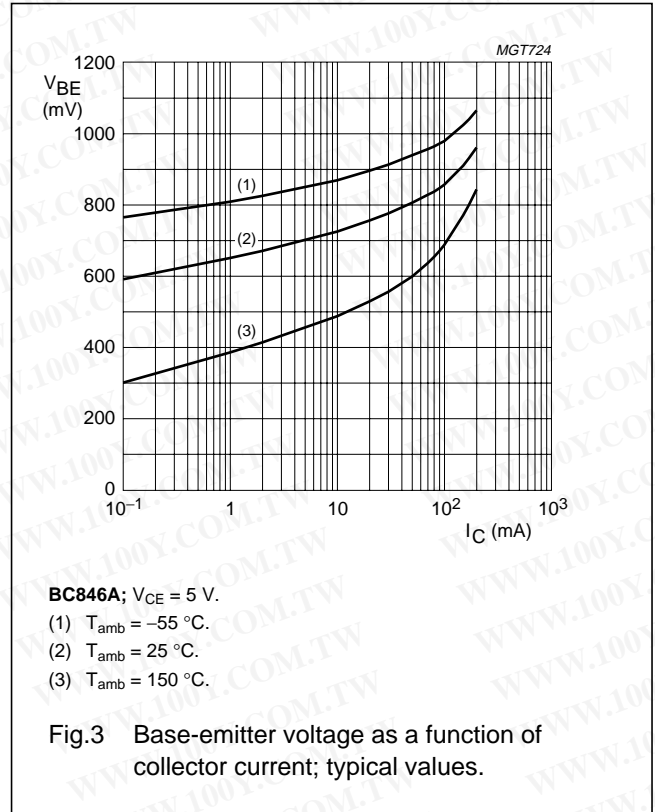
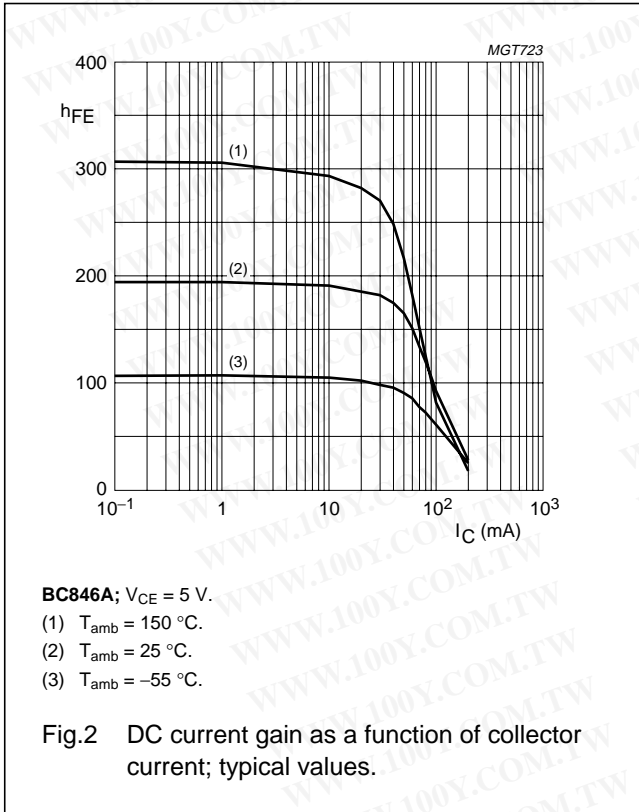
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I _{CBO}	collector-base cut-off current	V _{CB} = 30 V; I _E = 0	–	–	15	nA
		V _{CB} = 30 V; I _E = 0; T _J = 150 °C	–	–	5	μA
I _{EBO}	emitter-base cut-off current	V _{EB} = 5 V; I _C = 0	–	–	100	nA
h _{FE}	DC current gain	I _C = 10 μA; V _{CE} = 5 V	–	90	–	–
	BC846A; BC847A					
	BC846B; BC847B; BC848B	I _C = 2 mA; V _{CE} = 5 V	110	–	450	–
	BC847C					
	BC846	I _C = 10 mA; I _B = 0.5 mA	–	700	–	mV
	BC847					
	BC846A; BC847A	I _C = 100 mA; I _B = 5 mA; note 1	–	900	–	mV
	BC846B; BC847B; BC848B					
	BC847C	I _C = 2 mA; V _{CE} = 5 V	580	660	700	mV
V _{CEsat}	collector-emitter saturation voltage	I _C = 10 mA; I _B = 0.5 mA	–	90	250	mV
		I _C = 100 mA; I _B = 5 mA; note 1	–	200	600	mV
V _{BEsat}	base-emitter saturation voltage	I _C = 10 mA; I _B = 0.5 mA	–	700	–	mV
		I _C = 100 mA; I _B = 5 mA; note 1	–	900	–	mV
V _{BE}	base-emitter voltage	I _C = 2 mA; V _{CE} = 5 V	580	660	700	mV
		I _C = 10 mA; V _{CE} = 5 V	–	–	770	mV
C _c	collector capacitance	V _{CB} = 10 V; I _E = I _e = 0; f = 1 MHz	–	2.5	–	pF
f _T	transition frequency	V _{CE} = 5 V; I _C = 10 mA; f = 100 MHz	100	–	–	MHz
F	noise figure	I _C = 200 μA; V _{CE} = 5 V; R _S = 2 kΩ; f = 1 kHz; B = 200 Hz	–	2	10	dB

Note

1. Pulse test: t_p ≤ 300 μs; δ ≤ 0.02.

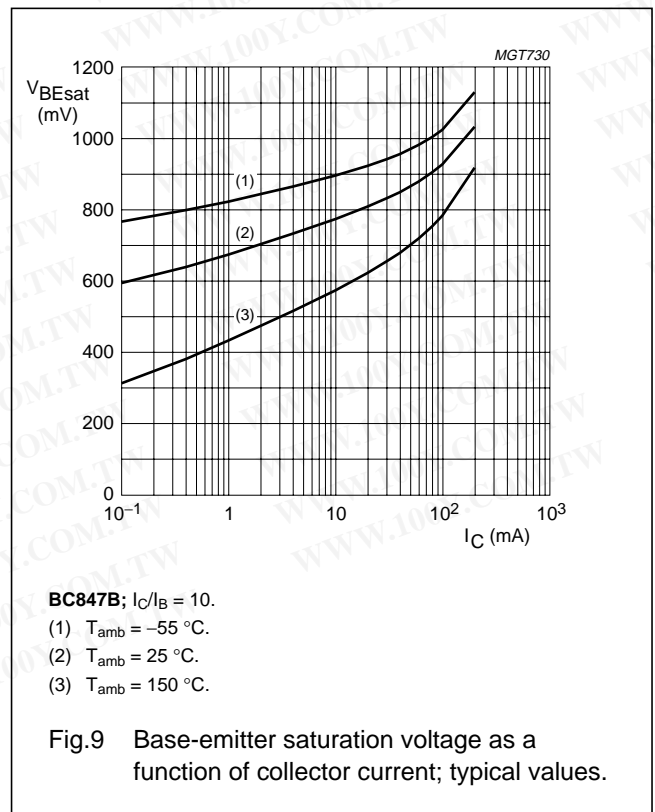
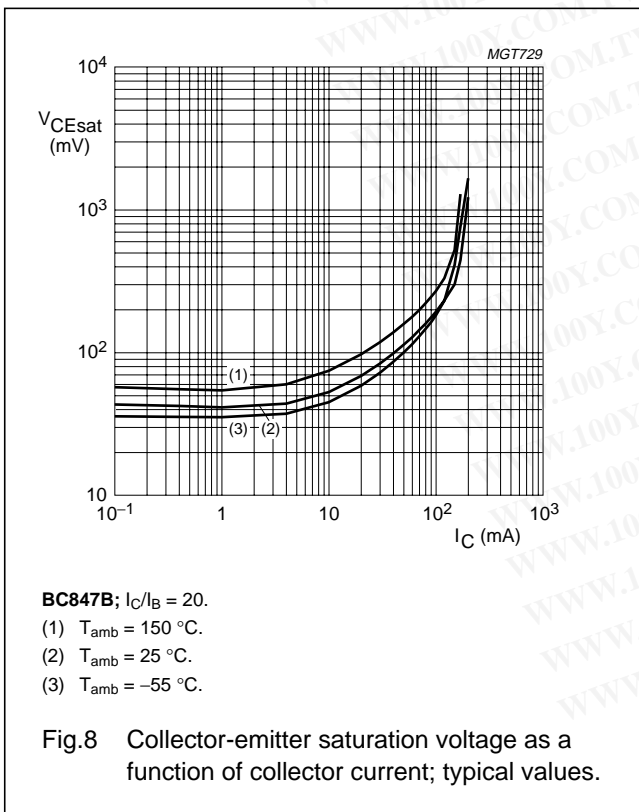
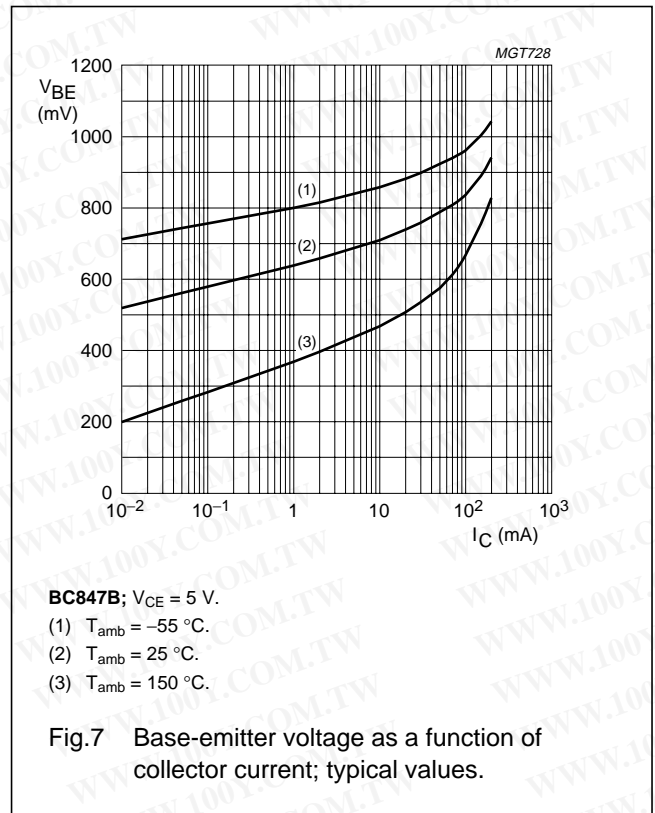
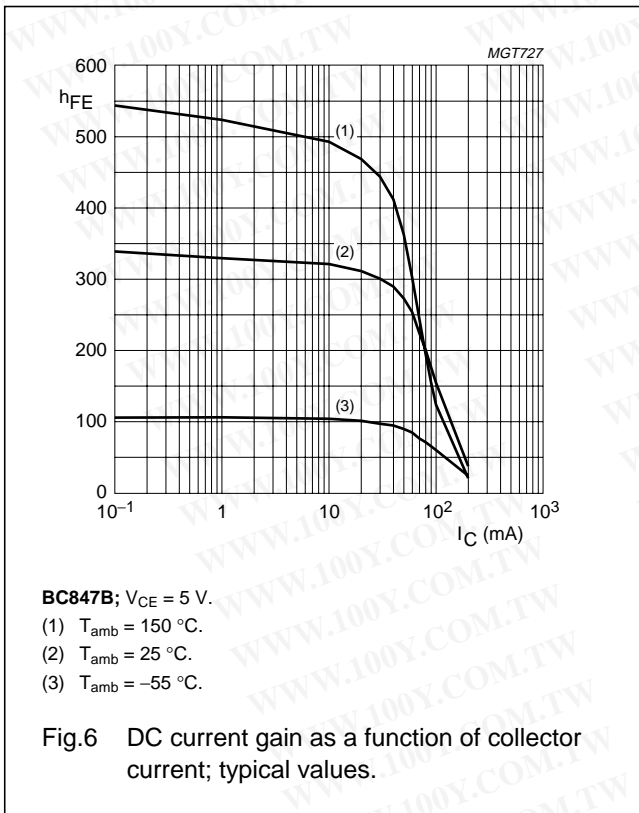
NPN general purpose transistors

BC846; BC847; BC848



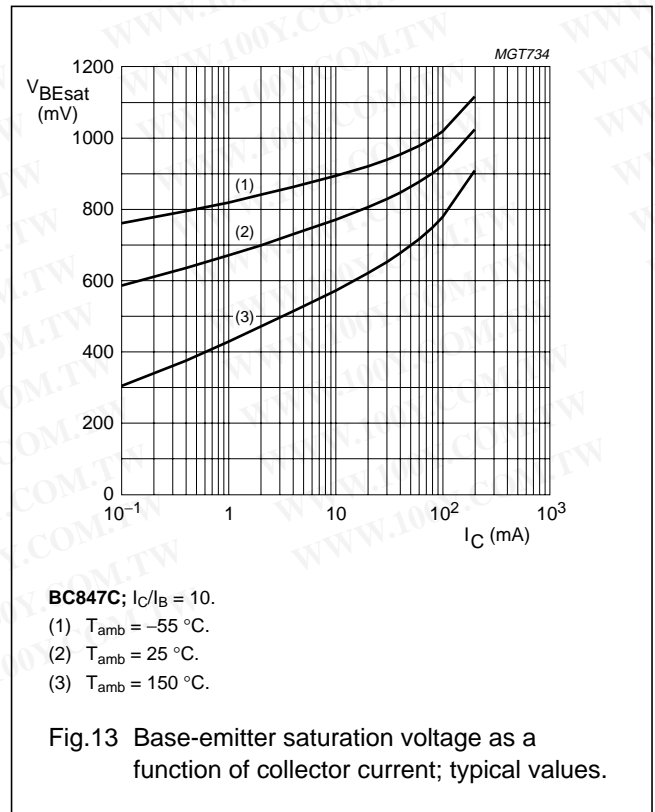
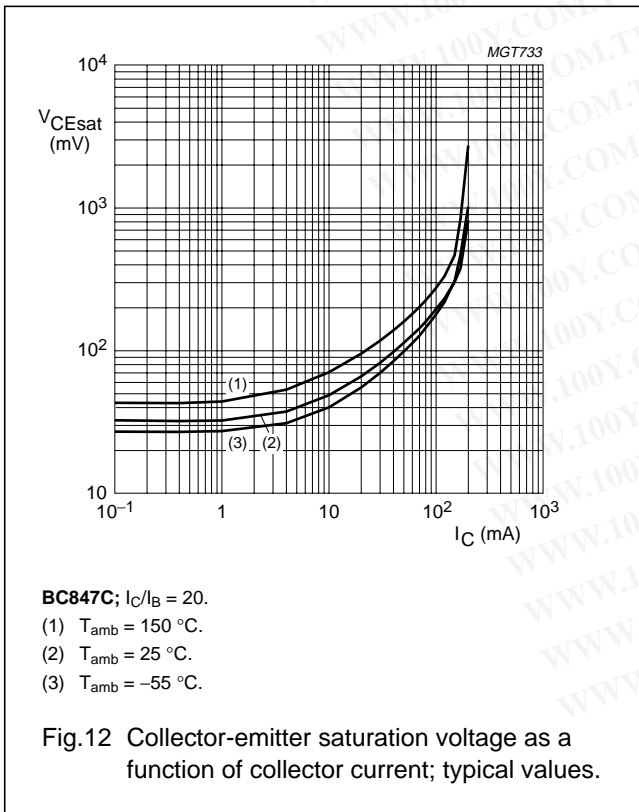
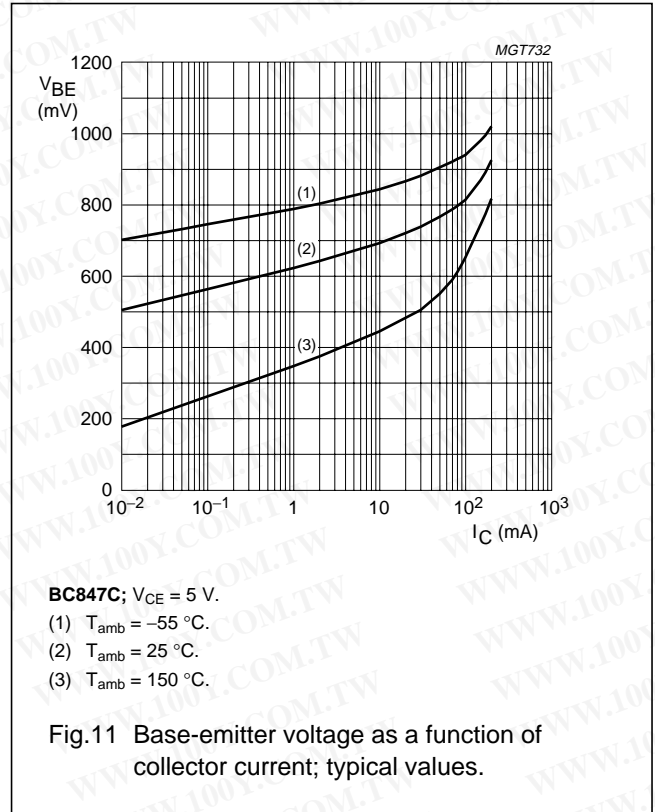
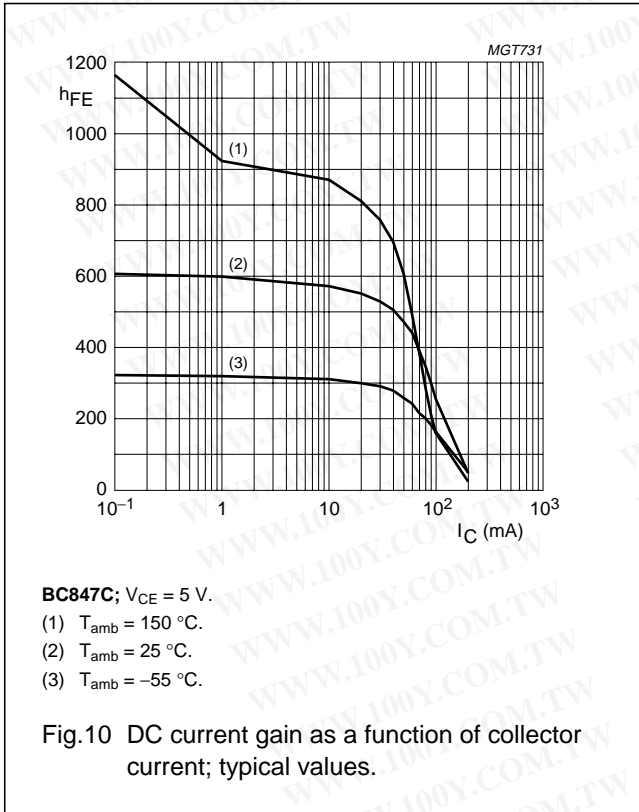
NPN general purpose transistors

BC846; BC847; BC848



NPN general purpose transistors

BC846; BC847; BC848



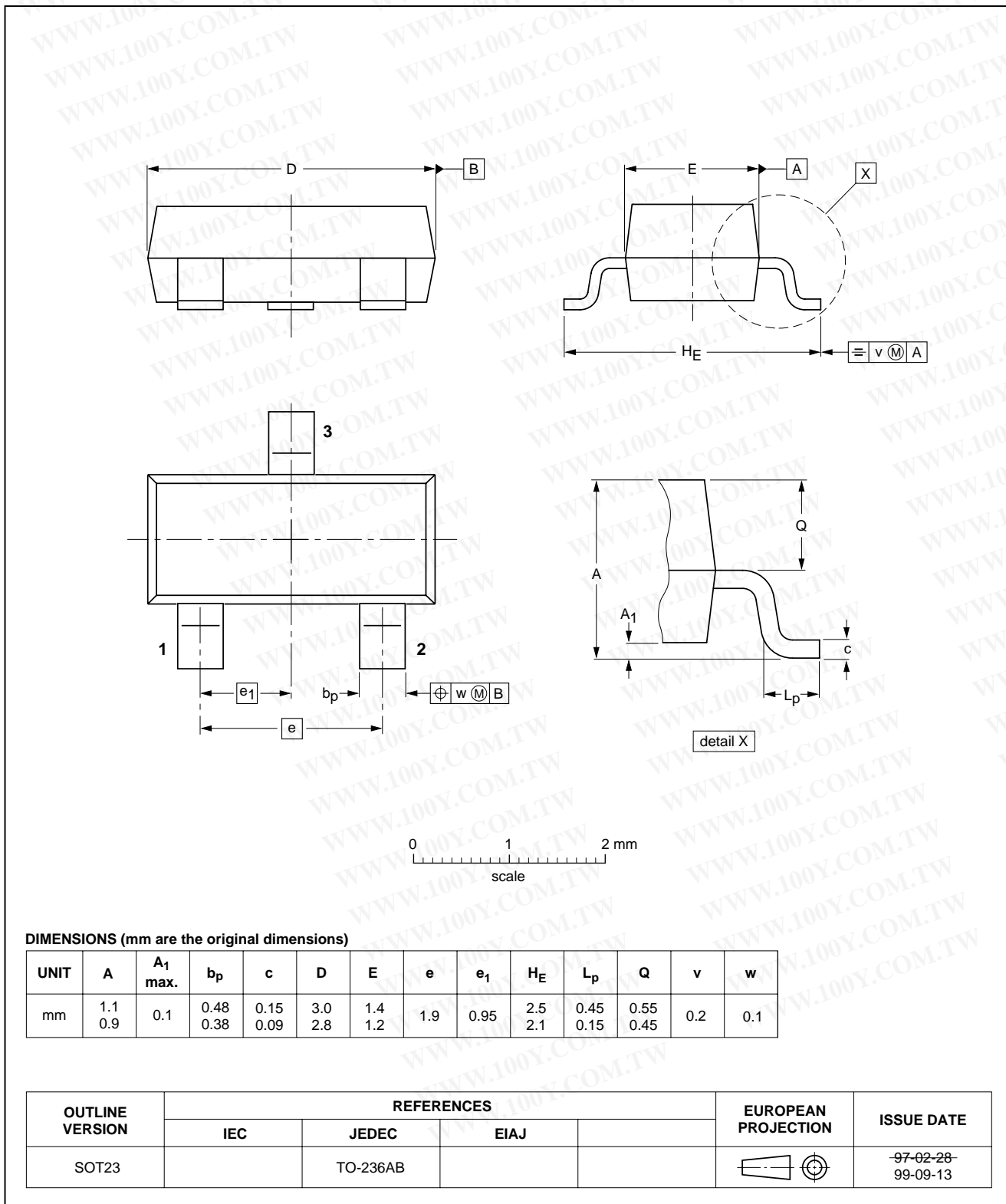
NPN general purpose transistors

BC846; BC847; BC848

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



NPN general purpose transistors

BC846; BC847; BC848

DATA SHEET STATUS

DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITIONS
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Preliminary data	Qualification	This data sheet contains data from the preliminary specification. Supplementary data will be published at a later date. Philips Semiconductors reserves the right to change the specification without notice, in order to improve the design and supply the best possible product.
Product data	Production	This data sheet contains data from the product specification. Philips Semiconductors reserves the right to make changes at any time in order to improve the design, manufacturing and supply. Changes will be communicated according to the Customer Product/Process Change Notification (CPCN) procedure SNW-SQ-650A.

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