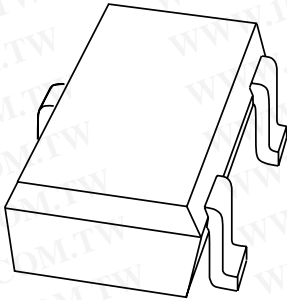


DATA SHEET



BC856W; BC857W; BC858W PNP general purpose transistors

Product data sheet
Supersedes data of 1999 Apr 12

2002 Feb 04

勝特力材料 886-3-5753170
勝特力电子(上海) 86-21-34970699
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NXP founded by Philips

PNP general purpose transistors

BC856W; BC857W; BC858W

FEATURES

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

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

PNP transistor in a SOT323 plastic package.
NPN complements: BC846W, BC847W and BC848W.

MARKING

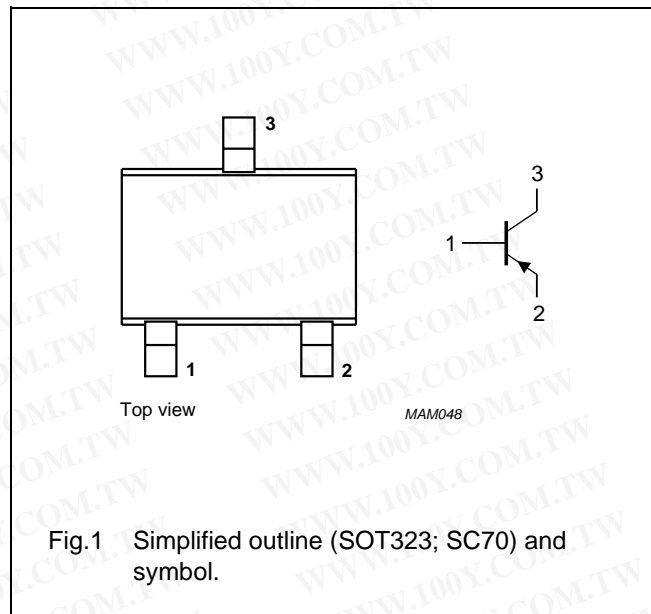
TYPE NUMBER	MARKING CODE ⁽¹⁾
BC856W	3D*
BC856AW	3A*
BC856BW	3B*
BC857W	3H*
BC857AW	3E*
BC857BW	3F*
BC857CW	3G*
BC858W	3M*

Note

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

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector



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PNP general purpose transistors

BC856W; BC857W; BC858W

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{CBO}	collector-base voltage	open emitter			
	BC856W		–	–80	V
	BC857W		–	–50	V
	BC858W		–	–30	V
V _{CEO}	collector-emitter voltage	open base			
	BC856W		–	–65	V
	BC857W		–	–45	V
	BC858W		–	–30	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} ≤ 25 °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

Note

1. Refer to SOT323 standard mounting conditions.

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R _{th j-a}	thermal resistance from junction to ambient	in free air; note 1	625	K/W

Note

1. Refer to SOT323 standard mounting conditions.

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PNP general purpose transistors

BC856W; BC857W; BC858W

CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT	
I_{CBO}	collector-base cut-off current	$V_{CB} = -30\text{ V}; I_E = 0$	–	–1	–15	nA	
		$V_{CB} = -30\text{ V}; I_E = 0;$ $T_j = 150\text{ }^{\circ}\text{C}$	–	–	–4	μA	
I_{EBO}	emitter-base cut-off current	$V_{EB} = -5\text{ V}; I_C = 0$	–	–	–100	nA	
h_{FE}	DC current gain	$I_C = -2\text{ mA}; V_{CE} = -5\text{ V}$	BC856W	125	–	475	
			BC857W; BC858W	125	–	800	
			BC856AW; BC857AW	125	–	250	
			BC856BW; BC857BW	220	–	475	
			BC857CW	420	–	800	
V_{CEsat}	collector-emitter saturation voltage	$I_C = -10\text{ mA}; I_B = -0.5\text{ mA}$	–	–75	–300	mV	
		$I_C = -100\text{ mA}; I_B = -5\text{ mA};$ note 1	–	–250	–600	mV	
V_{BEsat}	base-emitter saturation voltage	$I_C = -10\text{ mA}; I_B = -0.5\text{ mA}$	–	–700	–	mV	
		$I_C = -100\text{ mA}; I_B = -5\text{ mA};$ note 1	–	–850	–	mV	
V_{BE}	base-emitter voltage	$I_C = -2\text{ mA}; V_{CE} = -5\text{ V}$	–600	–650	–750	mV	
		$I_C = -10\text{ mA}; V_{CE} = -5\text{ V}$	–	–	–820	mV	
C_c	collector capacitance	$V_{CB} = -10\text{ V}; I_E = I_e = 0;$ $f = 1\text{ MHz}$	–	–	3	pF	
C_e	emitter capacitance	$V_{EB} = -0.5\text{ V}; I_C = I_c = 0;$ $f = 1\text{ MHz}$	–	–	12	pF	
f_T	transition frequency	$V_{CE} = -5\text{ V}; I_C = -10\text{ mA};$ $f = 100\text{ MHz}$	100	–	–	MHz	
F	noise figure	$I_C = -200\text{ }\mu\text{A}; V_{CE} = -5\text{ V};$ $R_S = 2\text{ k}\Omega; f = 1\text{ kHz};$ $B = 200\text{ Hz}$	–	–	10	dB	

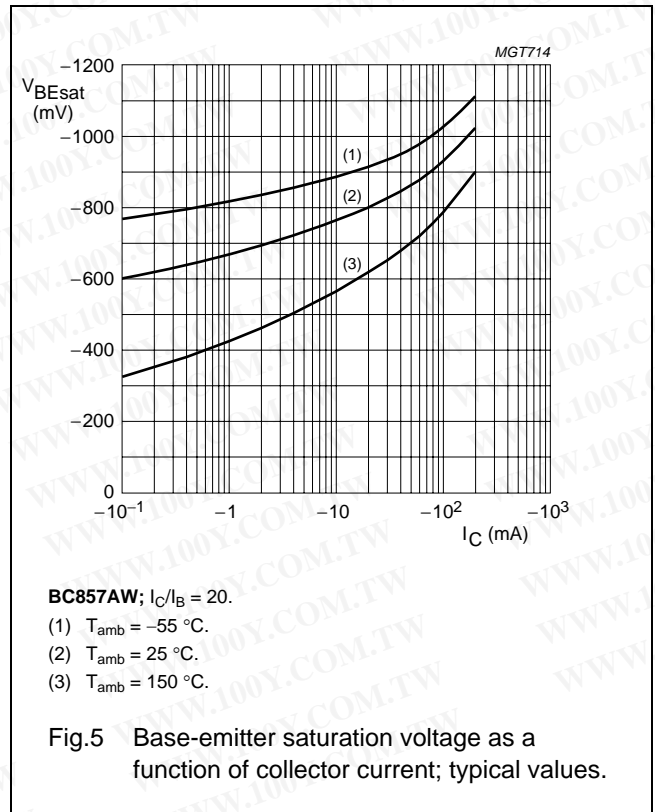
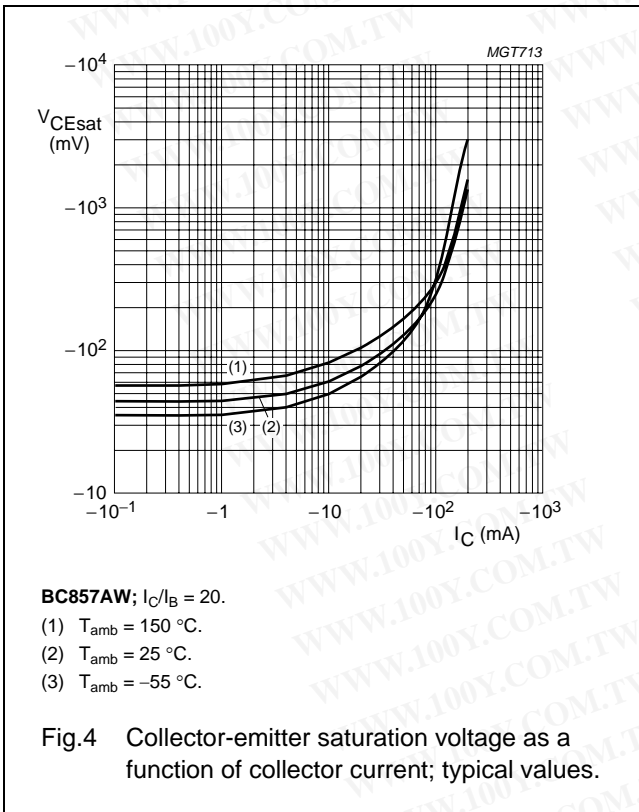
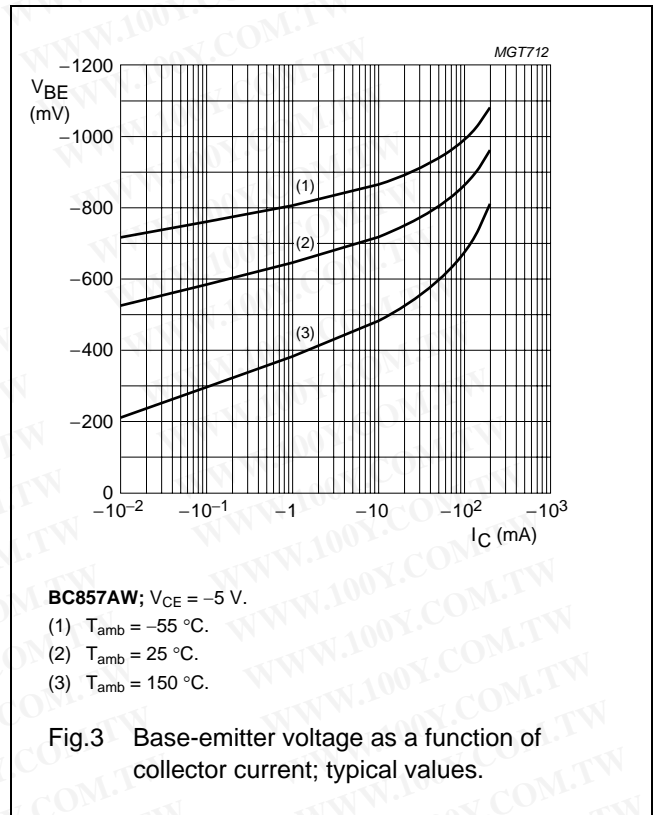
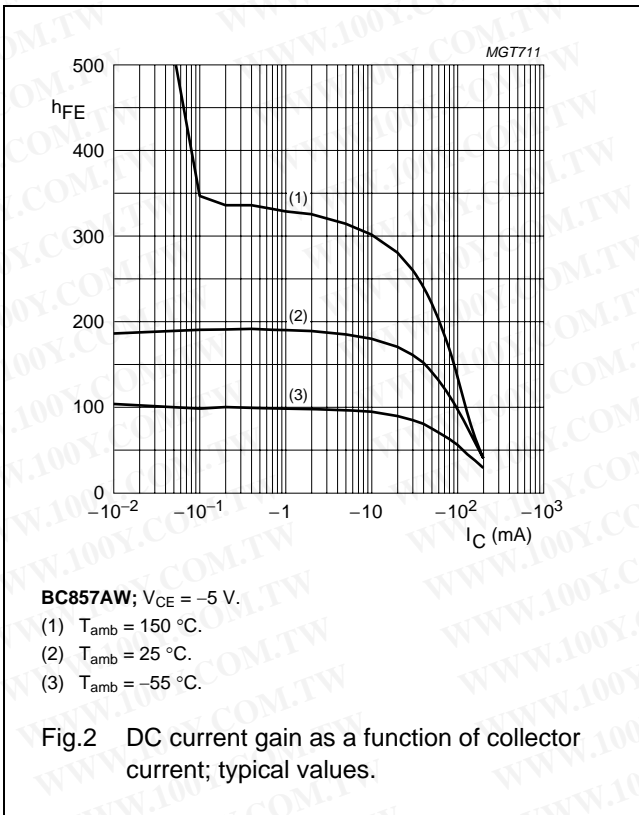
Note

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

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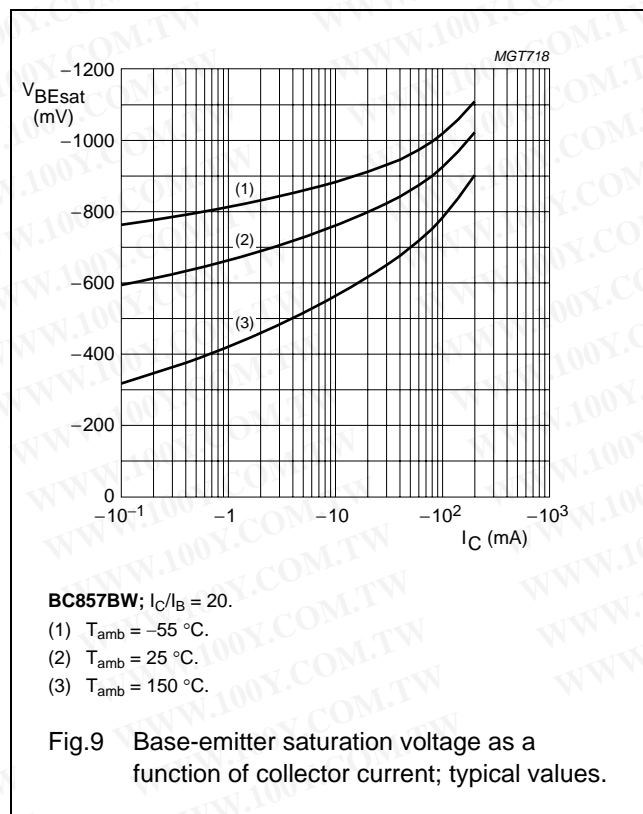
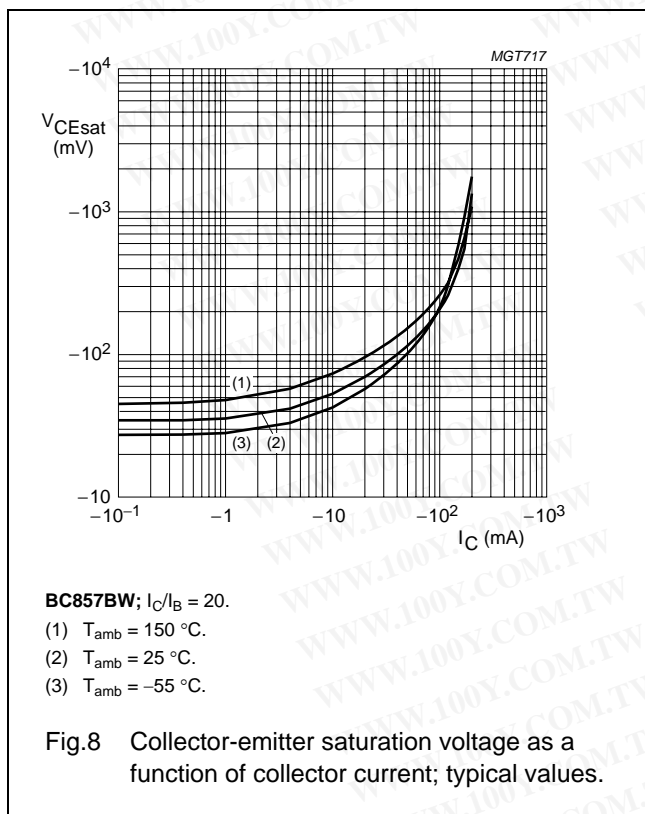
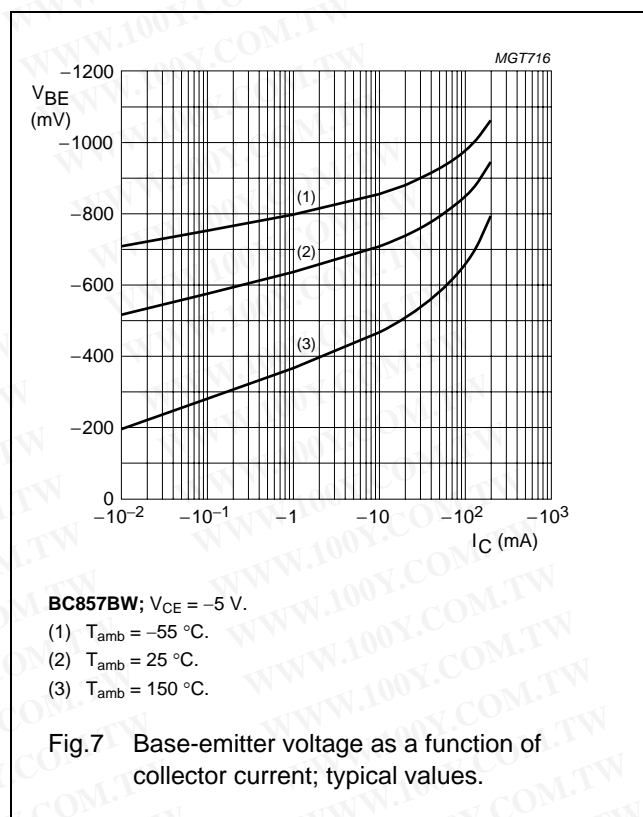
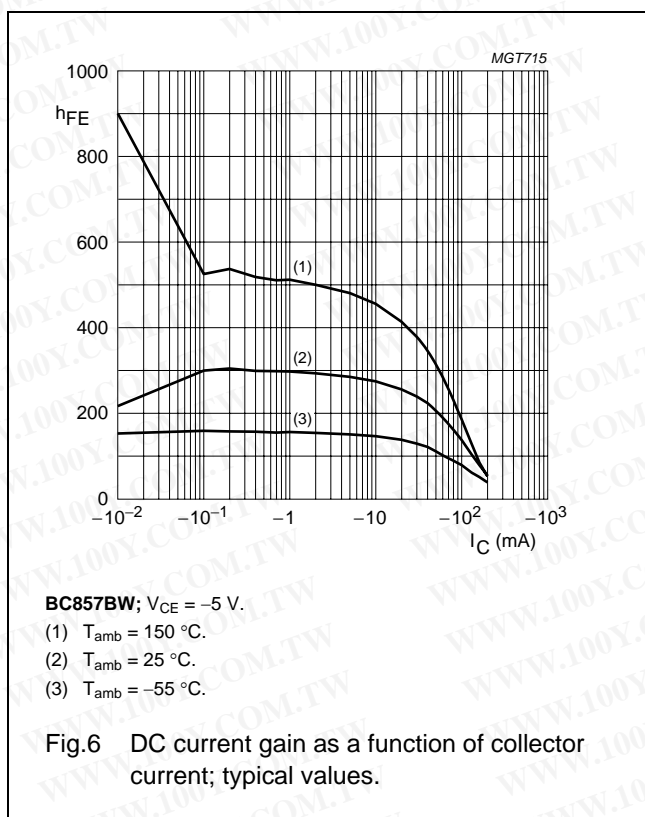
PNP general purpose transistors

BC856W; BC857W; BC858W



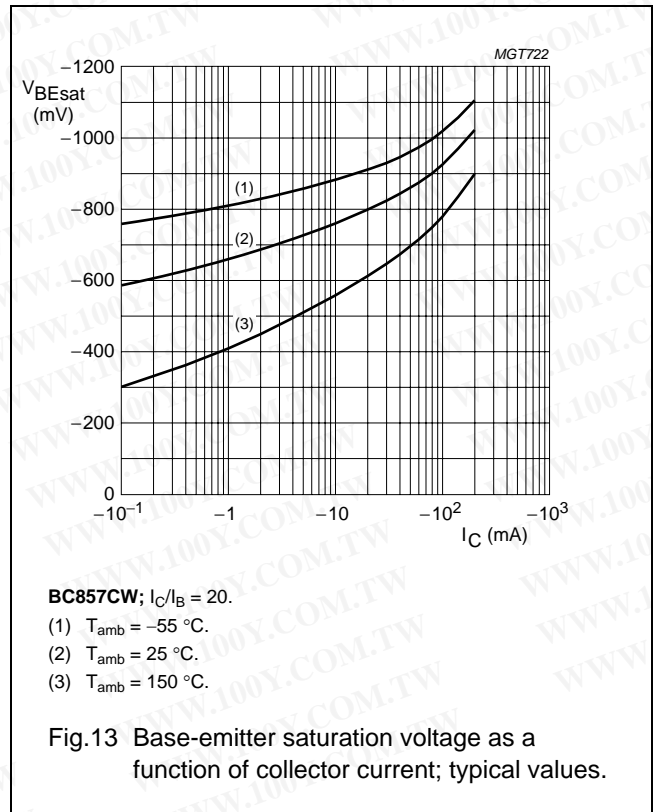
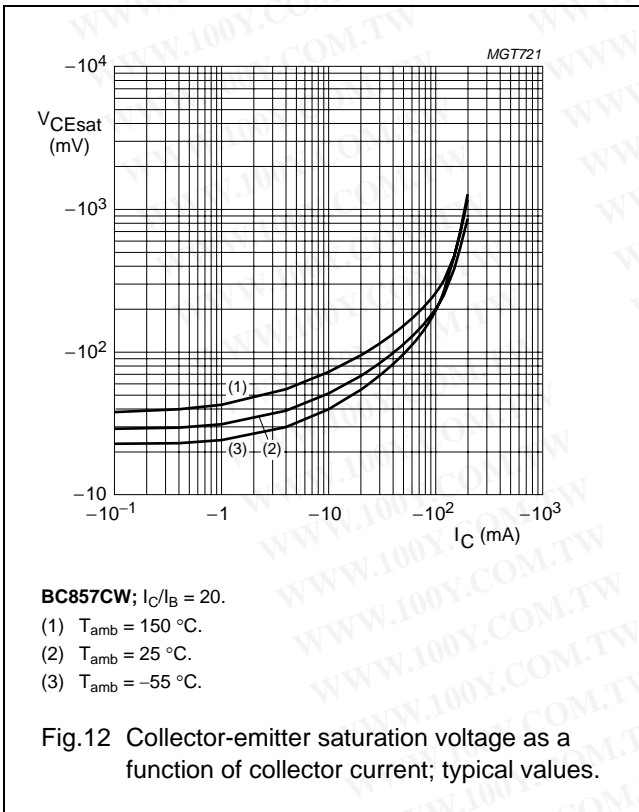
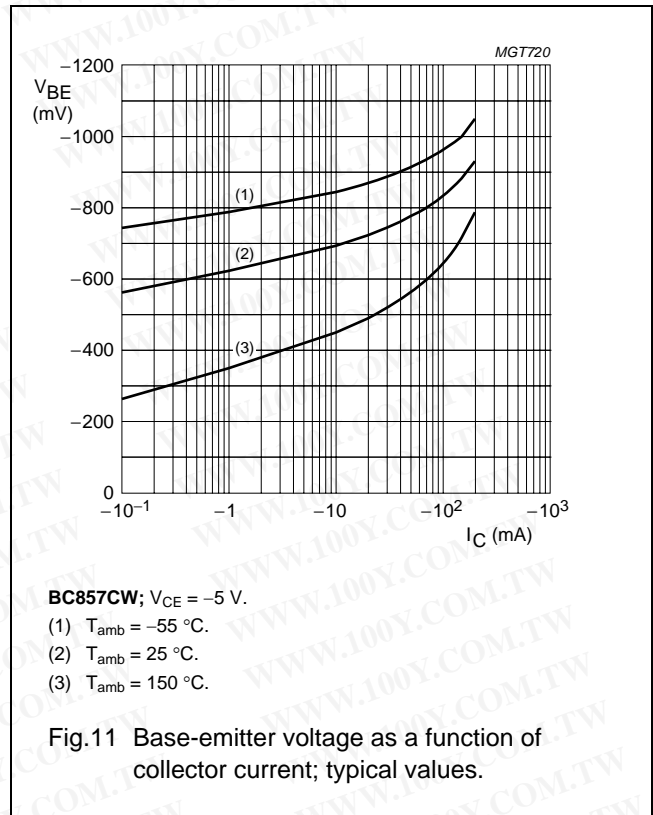
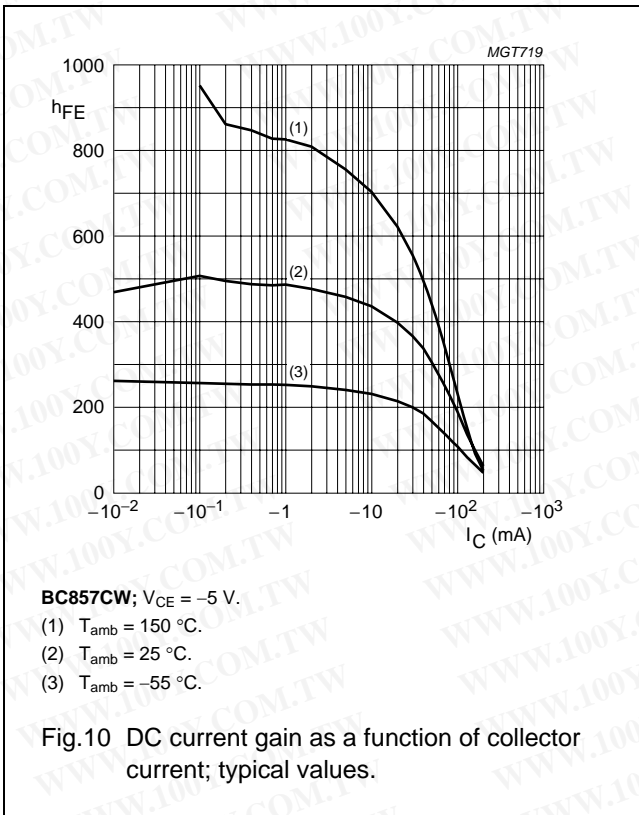
PNP general purpose transistors

BC856W; BC857W; BC858W



PNP general purpose transistors

BC856W; BC857W; BC858W



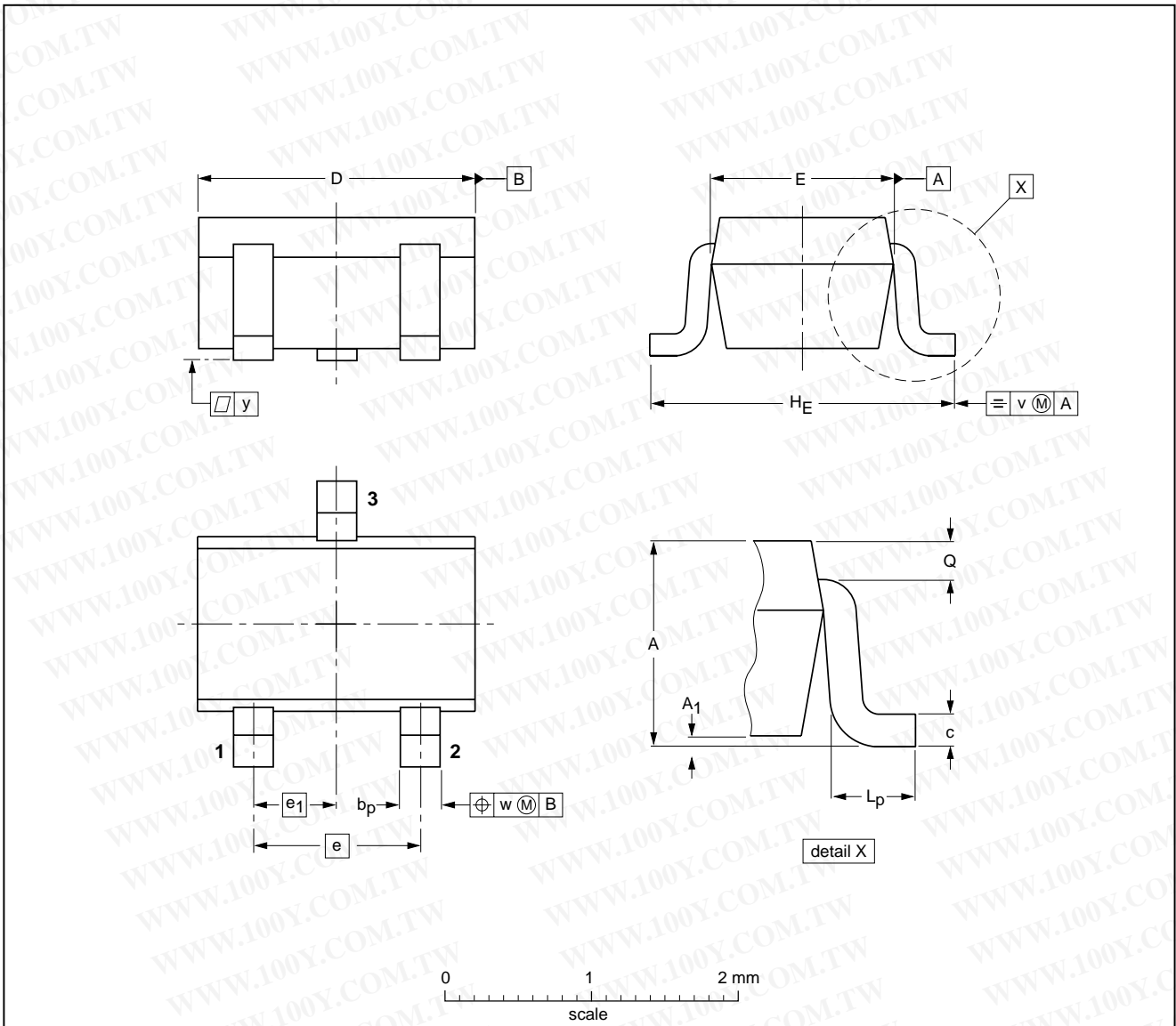
PNP general purpose transistors

BC856W; BC857W; BC858W

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT323



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
mm	1.1 0.8	0.1	0.4 0.3	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.23 0.13	0.2	0.2

OUTLINE VERSION	REFERENCES			EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ		
SOT323			SC-70		97-02-28

PNP general purpose transistors

BC856W; BC857W; BC858W

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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