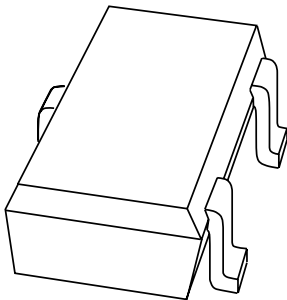


# DATA SHEET



## **BC856W; BC857W; BC858W** PNP general purpose transistors

Product specification  
Supersedes data of 1999 Apr 12

2002 Feb 04

# 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

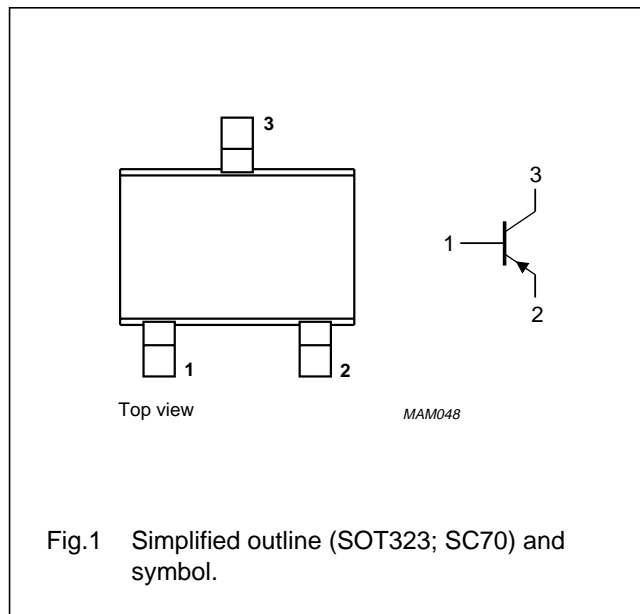
TYPE NUMBER	MARKING CODE <sup>(1)</sup>
BC856W	3D*
BC856AW	3A*
BC856BW	3B*
BC857W	3H*
BC857AW	3E*
BC857BW	3F*
BC857CW	3G*
BC858W	3M*

### Note

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

### PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector



## 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 <sub>CBO</sub>	collector-base voltage	open emitter			
	BC856W		–	–80	V
	BC857W		–	–50	V
	BC858W		–	–30	V
V <sub>CEO</sub>	collector-emitter voltage	open base			
	BC856W		–	–65	V
	BC857W		–	–45	V
	BC858W		–	–30	V
V <sub>EBO</sub>	emitter-base voltage	open collector	–	–5	V
I <sub>C</sub>	collector current (DC)		–	–100	mA
I <sub>CM</sub>	peak collector current		–	–200	mA
I <sub>BM</sub>	peak base current		–	–200	mA
P <sub>tot</sub>	total power dissipation	T <sub>amb</sub> ≤ 25 °C; note 1	–	200	mW
T <sub>stg</sub>	storage temperature		–65	+150	°C
T <sub>j</sub>	junction temperature		–	150	°C
T <sub>amb</sub>	operating ambient temperature		–65	+150	°C

**Note**

1. Refer to SOT323 standard mounting conditions.

**THERMAL CHARACTERISTICS**

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

**Note**

1. Refer to SOT323 standard mounting conditions.

## PNP general purpose transistors

## BC856W; BC857W; BC858W

**CHARACTERISTICS**

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

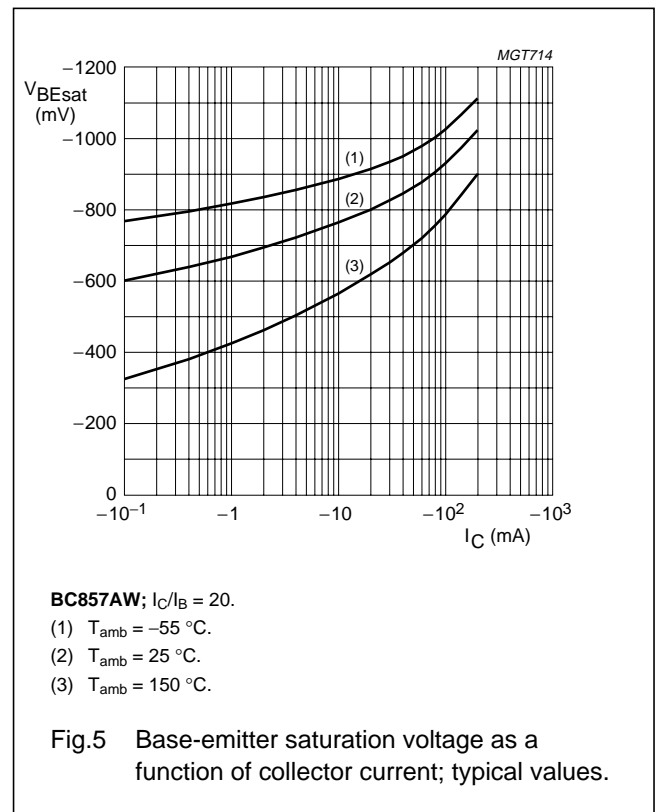
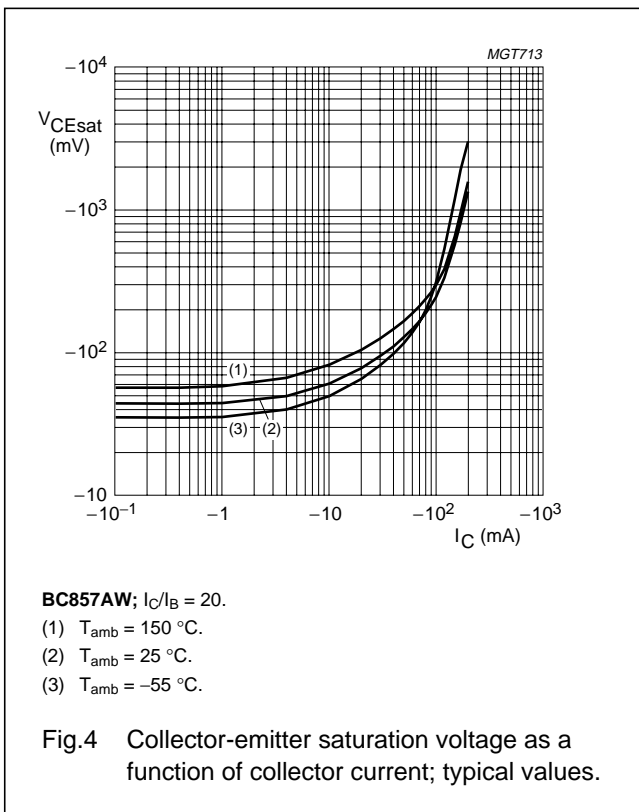
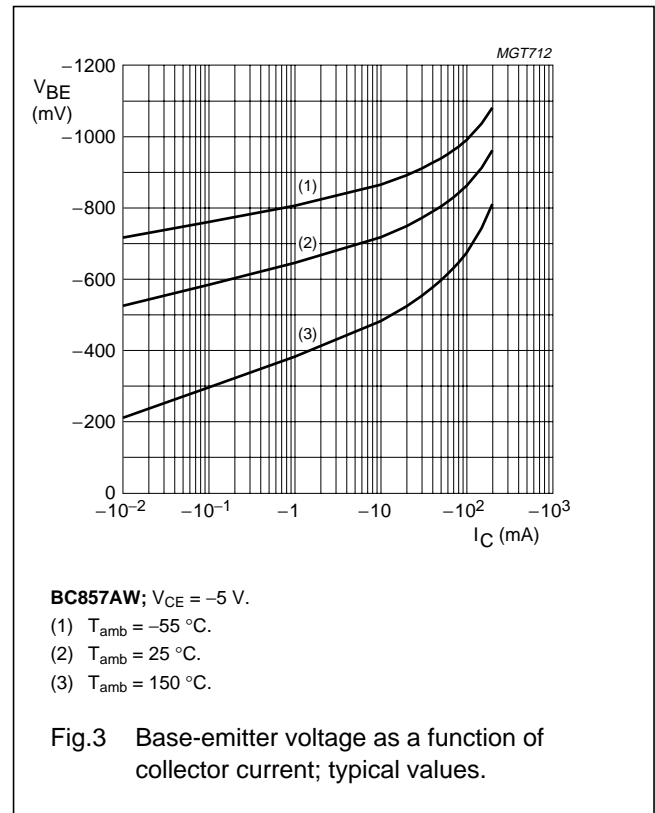
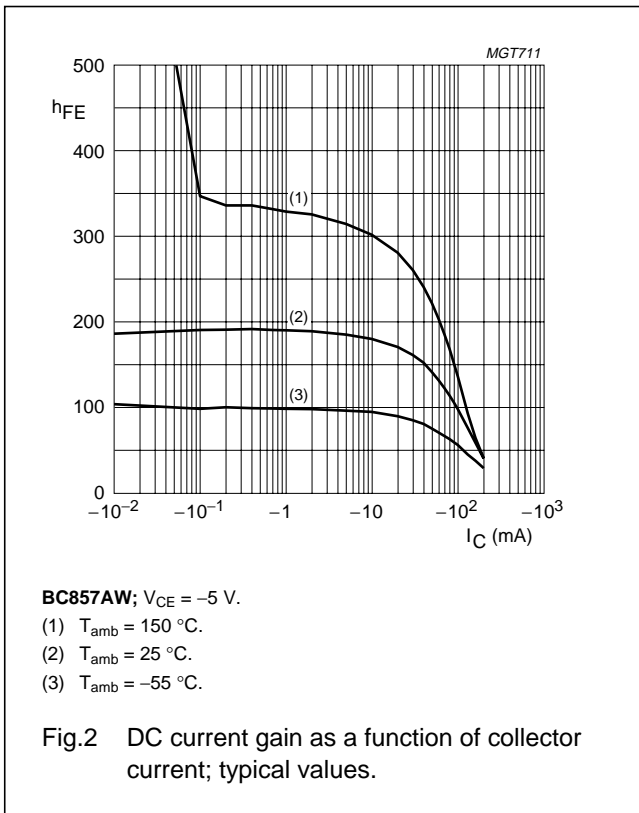
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT				
$I_{CBO}$	collector-base cut-off current	$V_{CB} = -30\text{ V}; I_E = 0$	–	–1	–15	nA				
		$V_{CB} = -30\text{ V}; I_E = 0;$ $T_j = 150\text{ °C}$	–	–	–4	$\mu\text{A}$				
$I_{EBO}$	emitter-base cut-off current	$V_{EB} = -5\text{ V}; I_C = 0$	–	–	–100	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:  $t_p \leq 300\text{ }\mu\text{s}; \delta \leq 0.02$ .

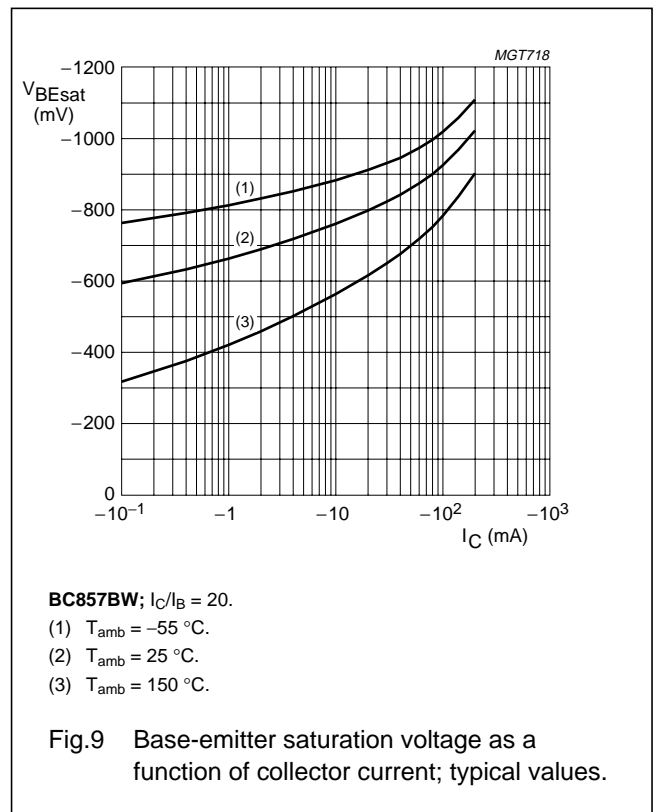
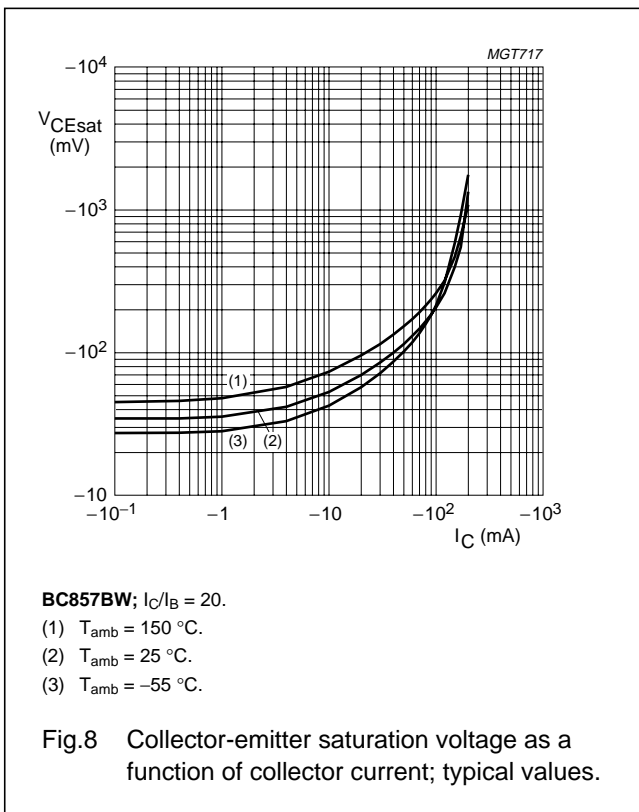
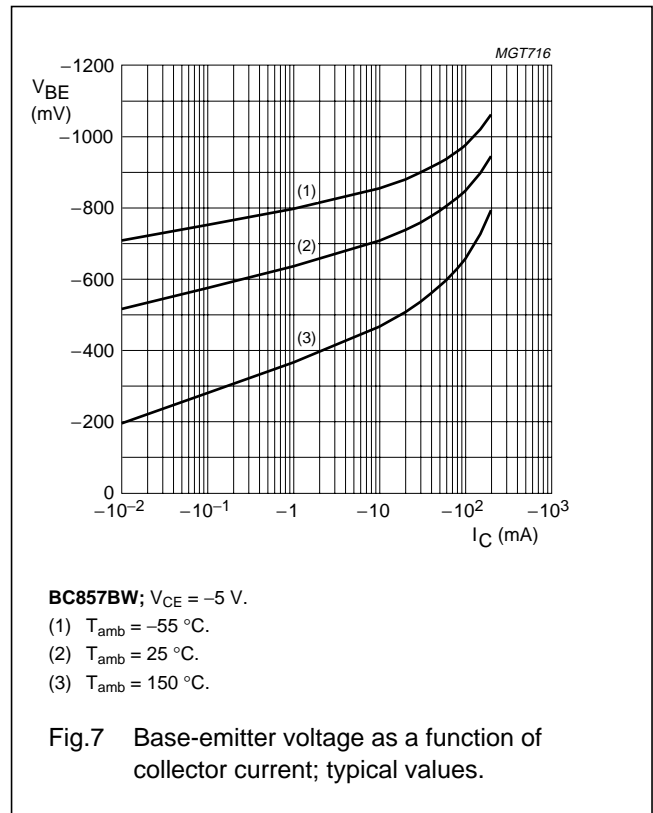
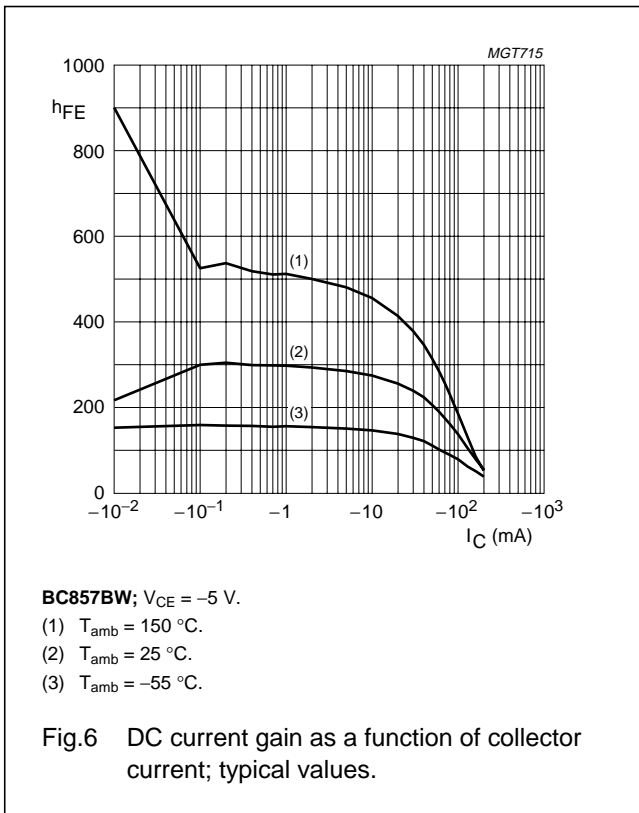
PNP general purpose transistors

BC856W; BC857W; BC858W



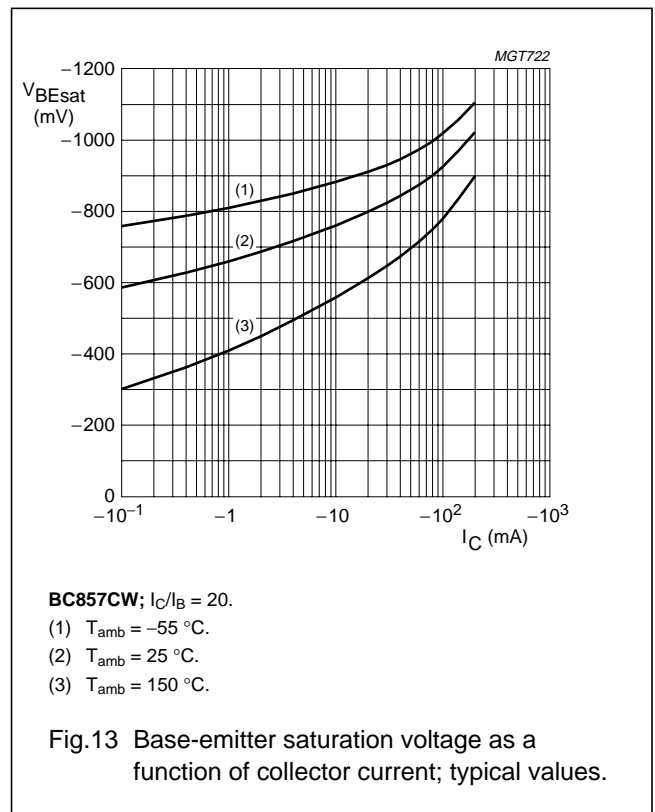
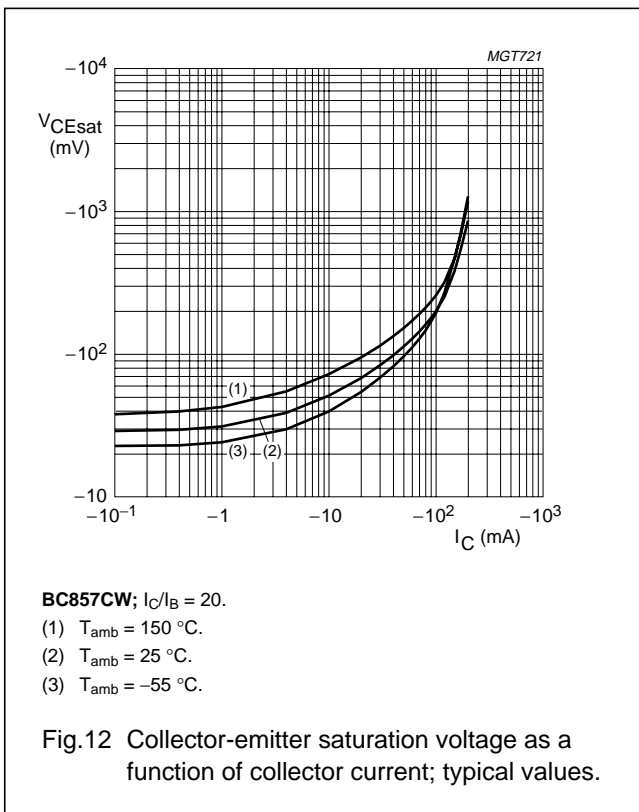
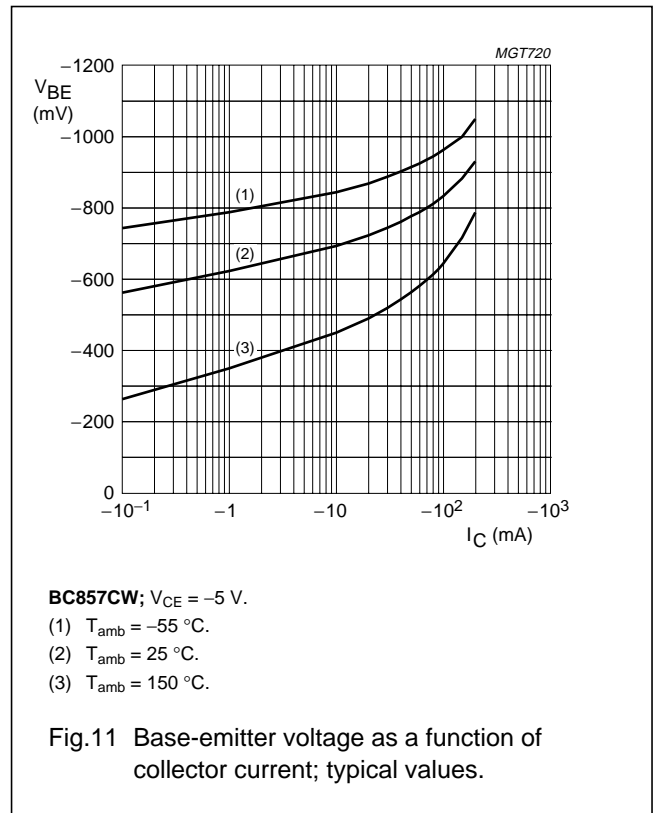
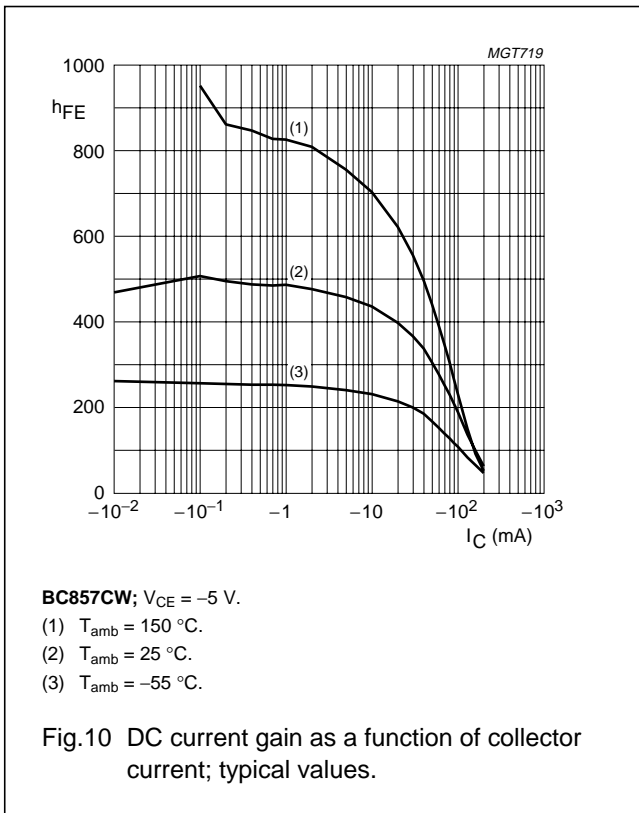
PNP general purpose transistors

BC856W; BC857W; BC858W



PNP general purpose transistors

BC856W; BC857W; BC858W



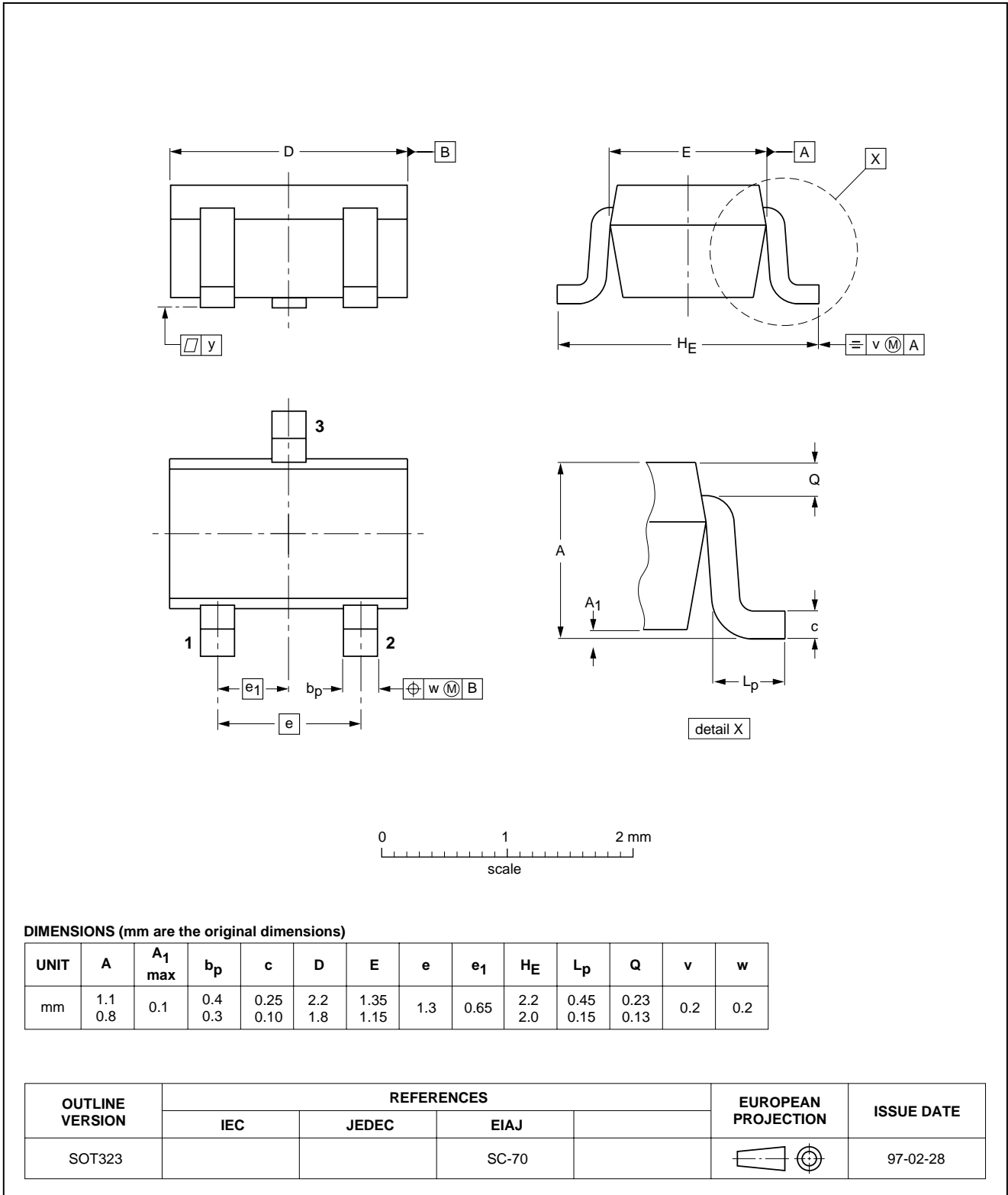
PNP general purpose transistors

BC856W; BC857W; BC858W

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT323





## PNP general purpose transistors

## BC856W; BC857W; BC858W

## DATA SHEET STATUS

DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	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.
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PNP general purpose transistors

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**NOTES**

PNP general purpose transistors

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**NOTES**

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