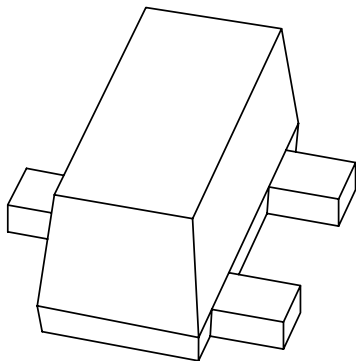


# DATA SHEET



## **BC857F series** **PNP general purpose transistors**

Product specification  
Supersedes data of 2000 Oct 23

2000 Dec 04

# PNP general purpose transistors

# BC857F series

### FEATURES

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

### APPLICATIONS

- General purpose switching and amplification especially in portable equipment.

### DESCRIPTION

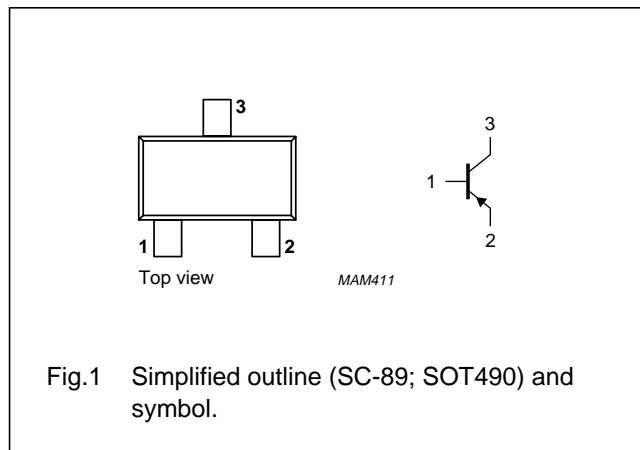
PNP transistor in a SC-89 (SOT490) plastic package.  
NPN complement: BC847F series.

### MARKING

TYPE NUMBER	MARKING CODE
BC857AF	3E
BC857BF	3F
BC857CF	3G

### PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector



### LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{CBO}$	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		-	-100	mA
$P_{tot}$	total power dissipation	$T_{amb} \leq 25\text{ }^\circ\text{C}$ ; note 1	-	250	mW
$T_{stg}$	storage temperature		-65	+150	$^\circ\text{C}$
$T_j$	junction temperature		-	150	$^\circ\text{C}$
$T_{amb}$	operating ambient temperature		-65	+150	$^\circ\text{C}$

### Note

1. Transistor mounted on a FR4 printed-circuit board.

## PNP general purpose transistors

## BC857F series

## 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 a FR4 printed-circuit board.

## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$I_{CBO}$	collector-base cut-off current	$V_{CB} = -30\text{ V}; I_E = 0$	–	–15	nA
		$V_{CB} = -30\text{ V}; I_E = 0; T_j = 150\text{ °C}$	–	–5	$\mu\text{A}$
$I_{EBO}$	emitter cut-off current	$V_{EB} = -5\text{ V}; I_C = 0$	–	–100	nA
$h_{FE}$	DC current gain BC857AF BC857BF BC857CF	$I_C = -2\text{ mA}; V_{CE} = -5\text{ V}$	125	250	
			220	475	
			420	800	
$V_{BE}$	base-emitter voltage	$I_C = -2\text{ mA}; V_{CE} = -5\text{ V}$	–600	–750	mV
		$I_C = -10\text{ mA}; V_{CE} = -5\text{ V}$	–	–820	mV
$V_{CEsat}$	collector-emitter saturation voltage	$I_C = -10\text{ mA}; I_B = -0.5\text{ mA}$	–	–200	mV
		$I_C = -100\text{ mA}; I_B = -5\text{ mA}; \text{note 1}$	–	–400	mV
$C_c$	collector capacitance	$V_{CB} = -10\text{ V}; I_E = I_e = 0; f = 1\text{ MHz}$	–	2.5	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

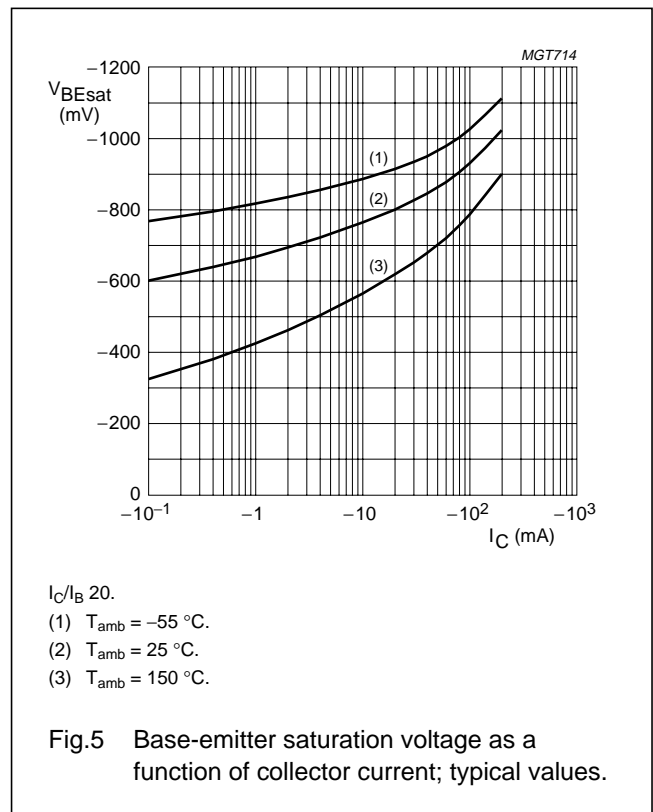
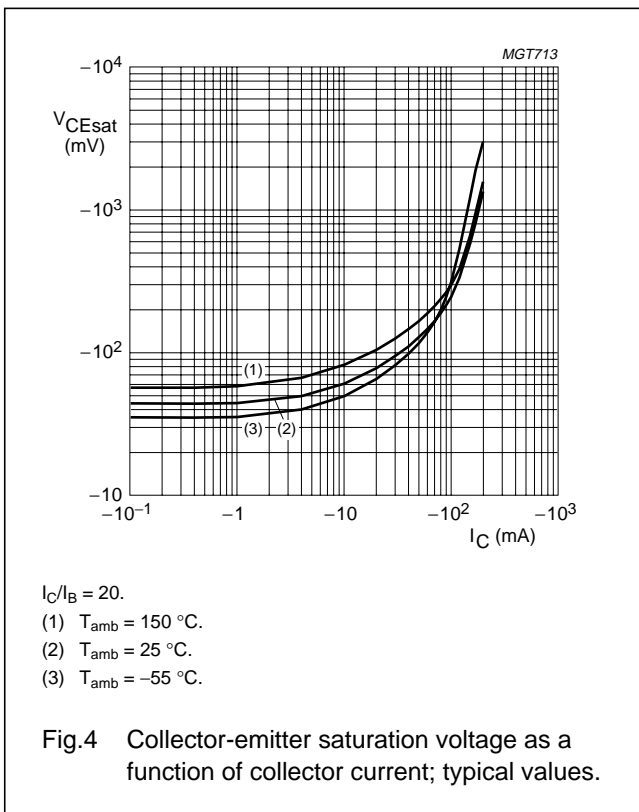
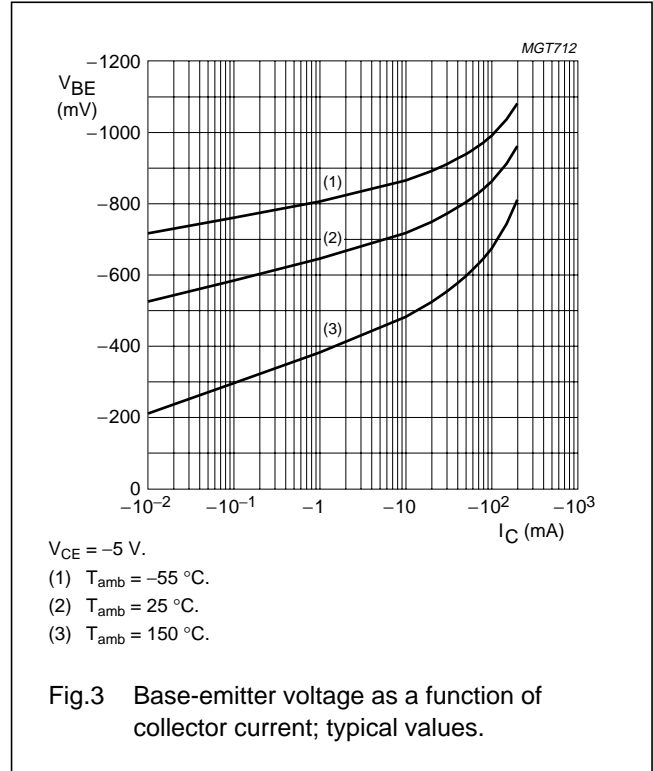
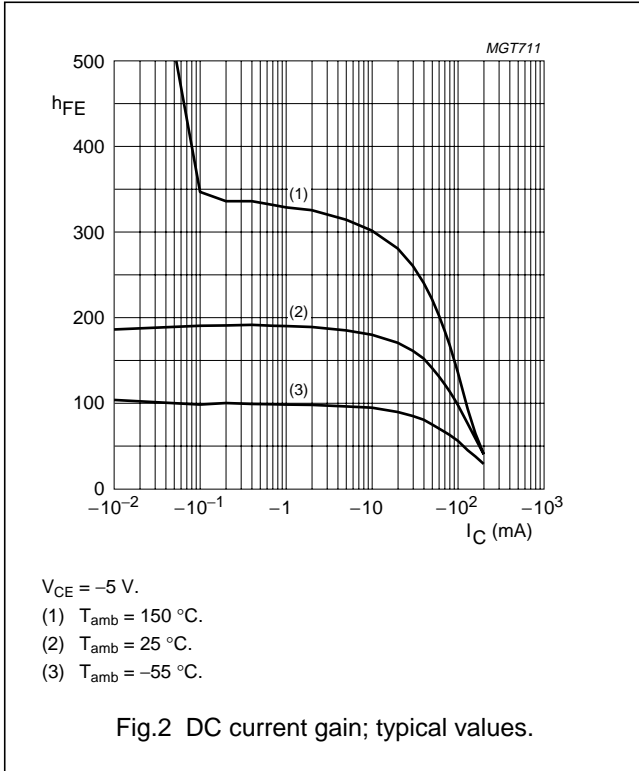
## Note

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

PNP general purpose transistors

BC857F series

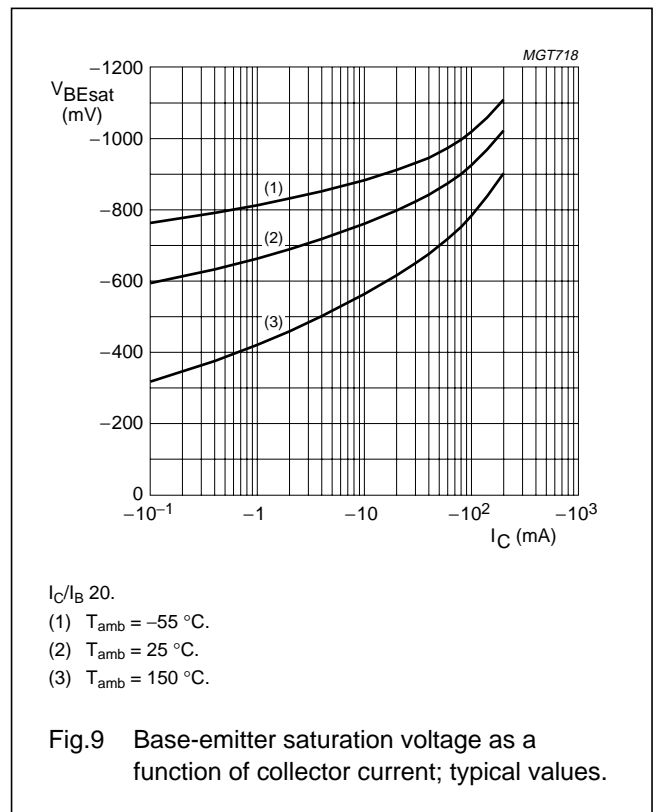
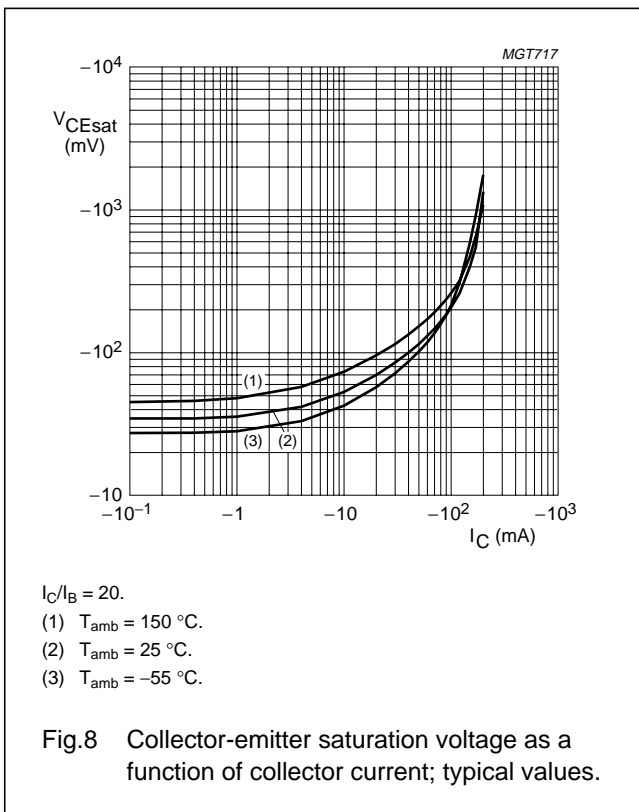
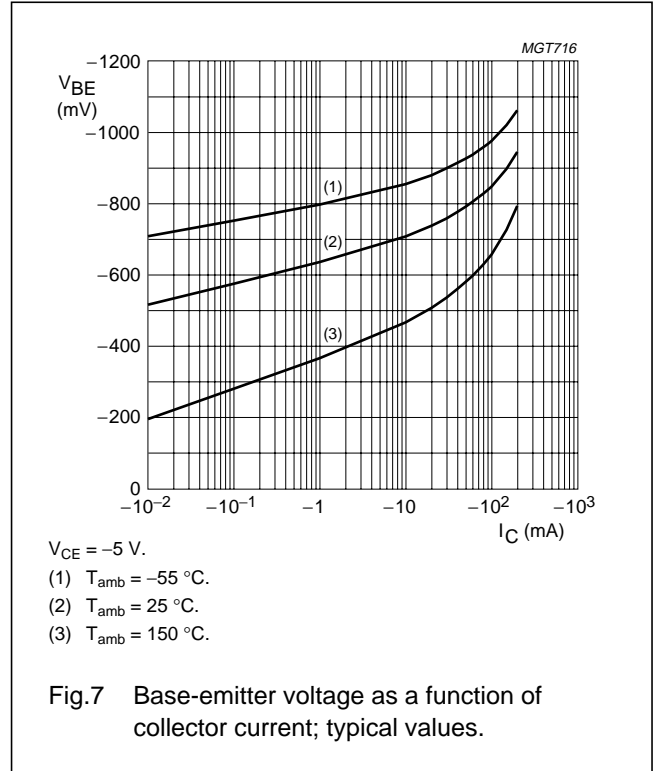
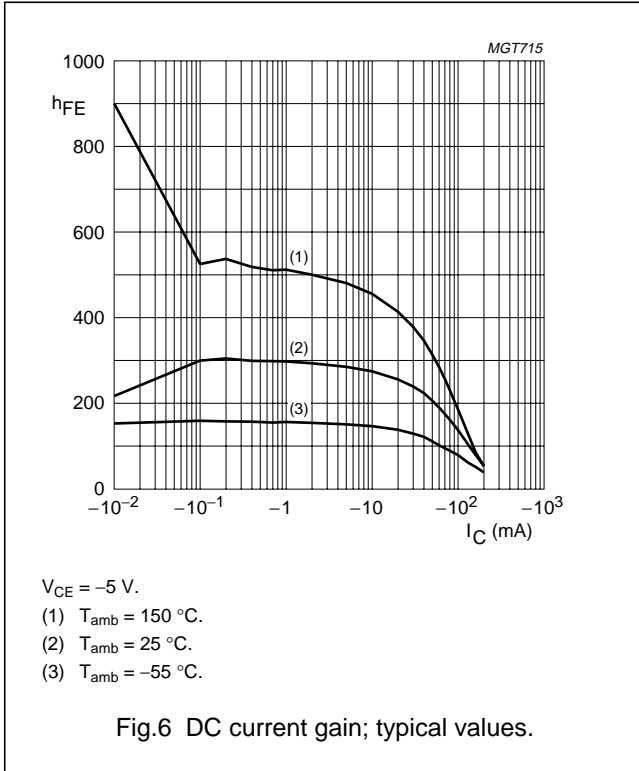
GRAPHICAL INFORMATION BC857AF



PNP general purpose transistors

BC857F series

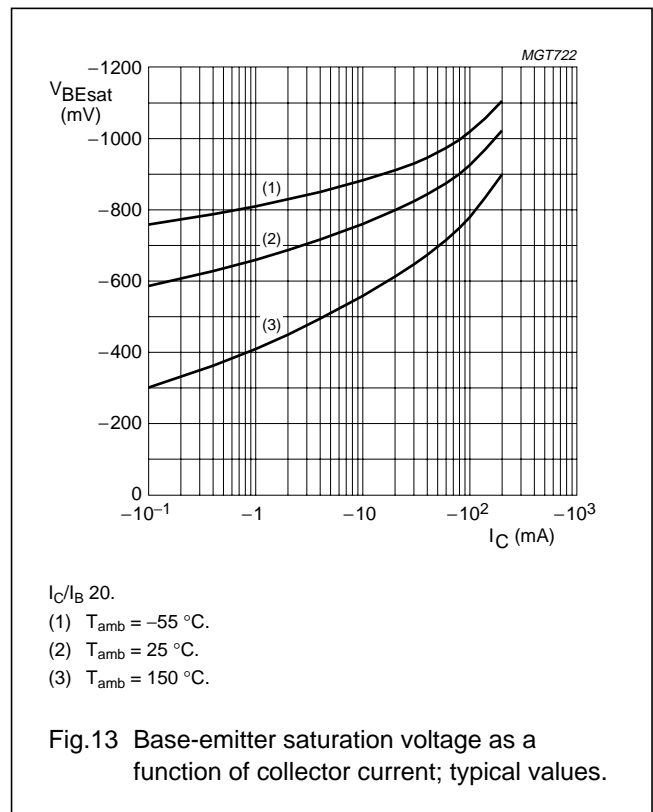
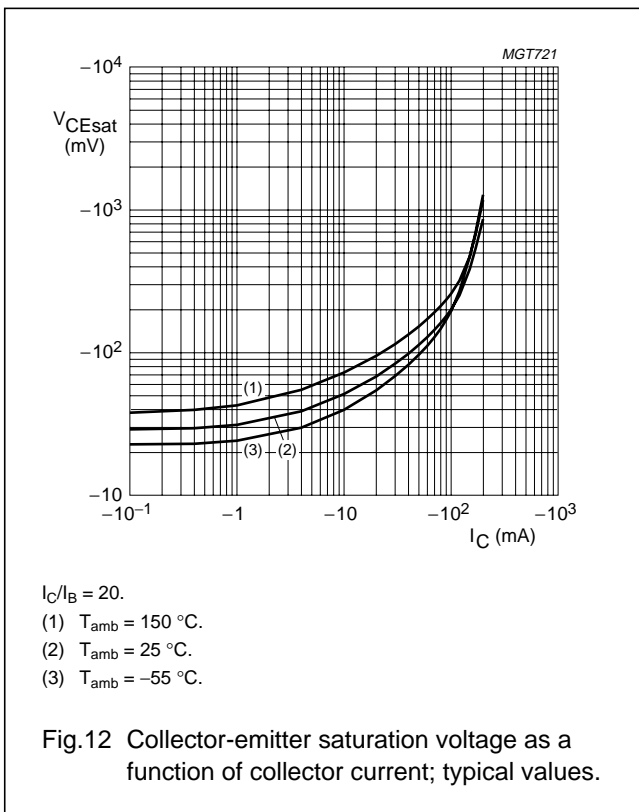
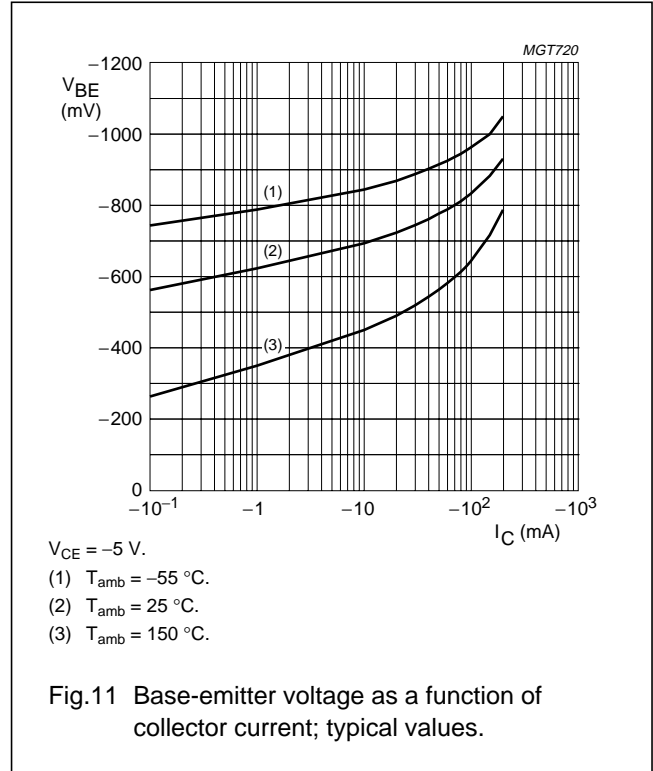
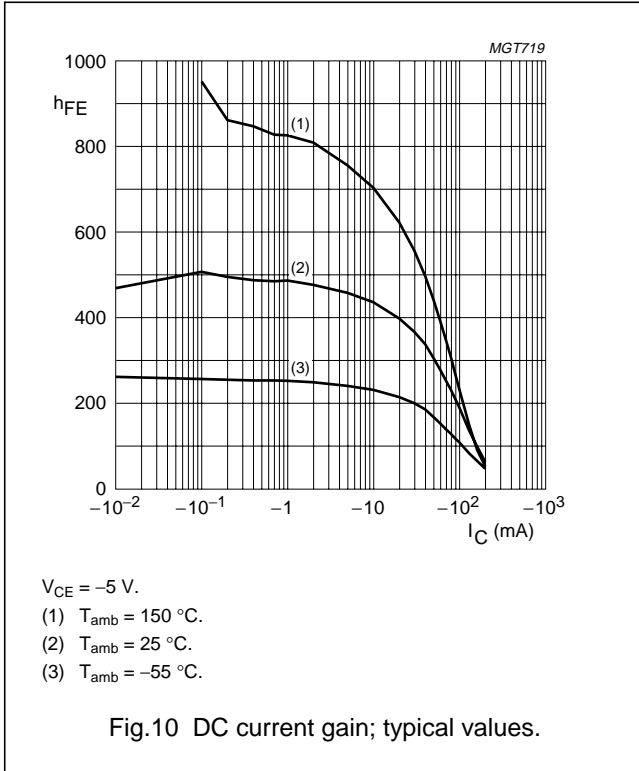
GRAPHICAL INFORMATION BC857BF



PNP general purpose transistors

BC857F series

GRAPHICAL INFORMATION BC857CF



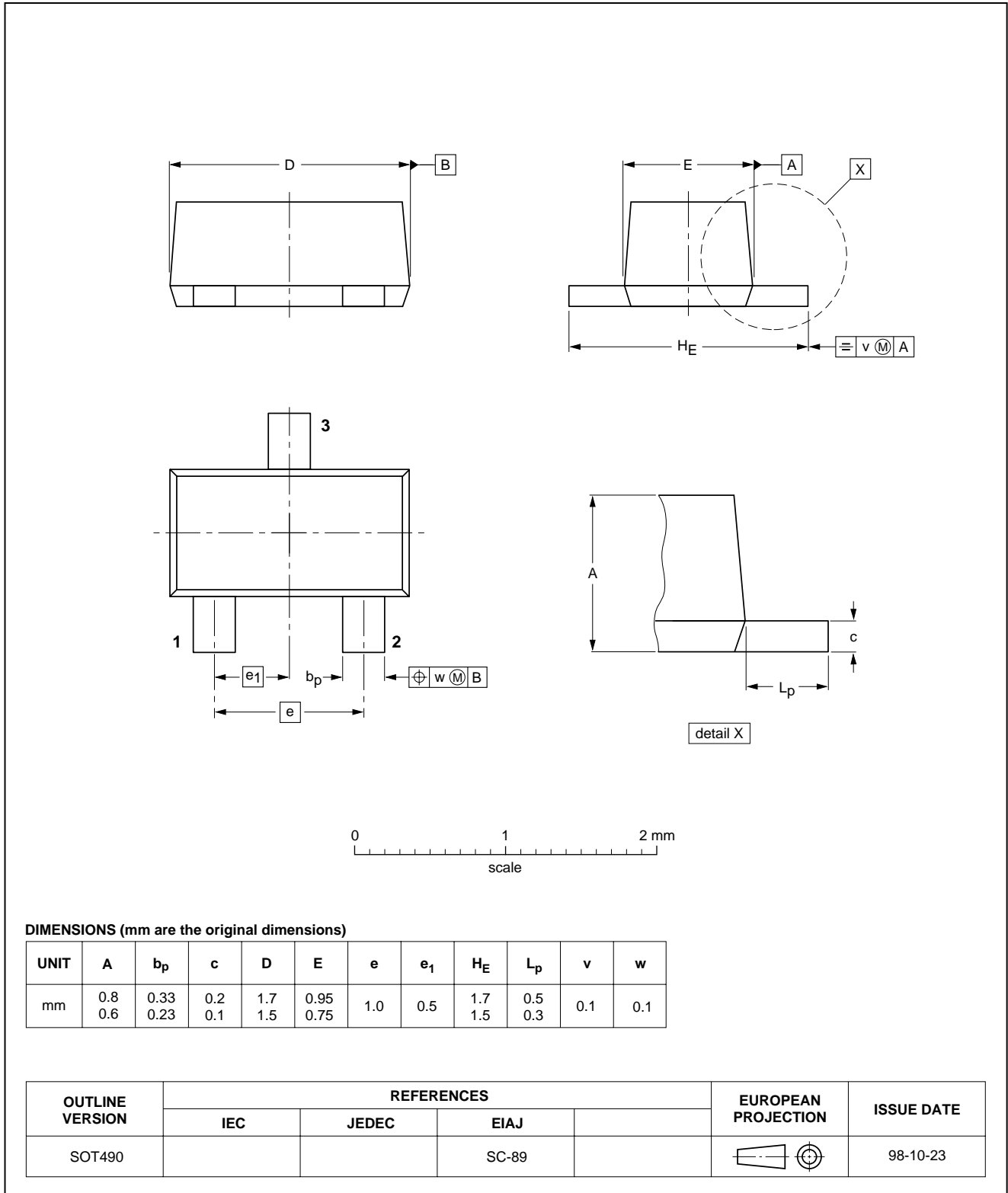
PNP general purpose transistors

BC857F series

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT490



## PNP general purpose transistors

## BC857F series

## DATA SHEET STATUS

DATA SHEET STATUS	PRODUCT STATUS	DEFINITIONS <sup>(1)</sup>
Objective specification	Development	This data sheet contains the design target or goal specifications for product development. Specification may change in any manner without notice.
Preliminary specification	Qualification	This data sheet contains preliminary data, and supplementary data will be published at a later date. Philips Semiconductors reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.
Product specification	Production	This data sheet contains final specifications. Philips Semiconductors reserves the right to make changes at any time without notice in order to improve design and supply the best possible product.

**Note**

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PNP general purpose transistors

BC857F series

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**NOTES**

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**NOTES**

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**NOTES**

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