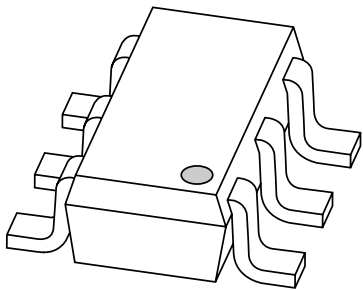


# DATA SHEET



## **BC817DPN** NPN/PNP general purpose transistor

Product specification  
Supersedes data of 2002 Aug 09

2002 Nov 22

# NPN/PNP general purpose transistor

# BC817DPN

### FEATURES

- High current (500 mA)
- 600 mW total power dissipation
- Replaces two SOT23 packaged transistors on same PCB area.

### APPLICATIONS

- General purpose switching and amplification
- Complementary driver
- Half and full bridge driver.

### DESCRIPTION

NPN/PNP transistor pair in a SOT457 (SC-74) plastic package.

### MARKING

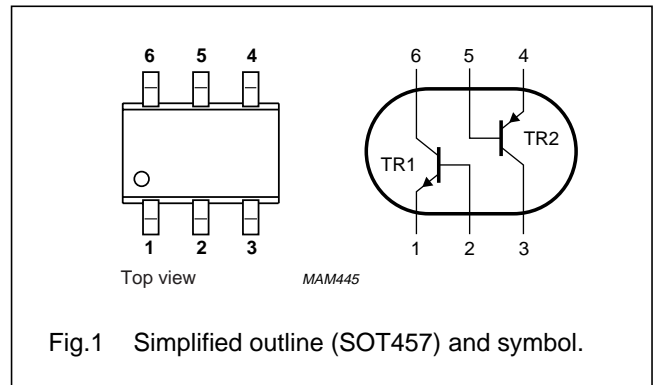
TYPE NUMBER	MARKING CODE
BC817DPN	N4

### QUICK REFERENCE DATA

SYMBOL	PARAMETER	MAX.	UNIT
$V_{CE0}$	collector-emitter voltage	45	V
$I_C$	collector current (DC)	500	mA
$I_{CM}$	peak collector current	1	A

### PINNING

PIN	DESCRIPTION
1, 4	emitter TR1; TR2
2, 5	base TR1; TR2
6, 3	collector TR1; TR2



### LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
<b>Per transistor; for the PNP transistor with negative polarity</b>					
$V_{CBO}$	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)		–	500	mA
$I_{CM}$	peak collector current		–	1	A
$I_{BM}$	peak base current		–	200	mA
$P_{tot}$	total power dissipation	$T_{amb} \leq 25\text{ °C}$ ; note 1	–	370	mW
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	150	°C
$T_{amb}$	operating ambient temperature		–65	+150	°C
<b>Per device</b>					
$P_{tot}$	total power dissipation	$T_{amb} \leq 25\text{ °C}$ ; note 1	–	600	mW

### Note

1. Device mounted on a printed-circuit board; single sided copper; tinplated; mounting pad for collector 1 cm<sup>2</sup>.

## NPN/PNP general purpose transistor

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## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	208	K/W

## Note

1. Device mounted on a printed-circuit board; single sided copper; tinplated; mounting pad for collector 1 cm<sup>2</sup>.

## CHARACTERISTICS

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

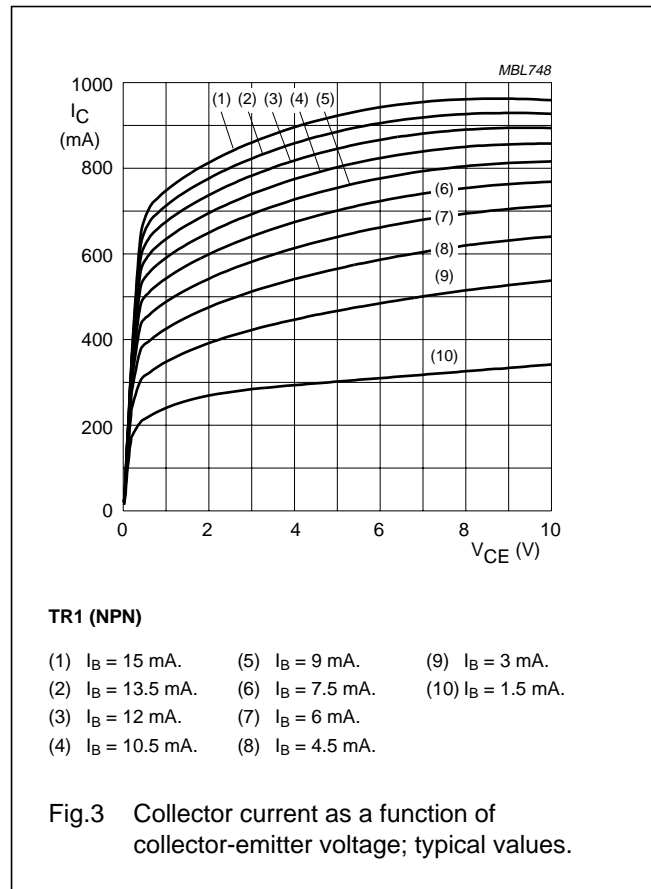
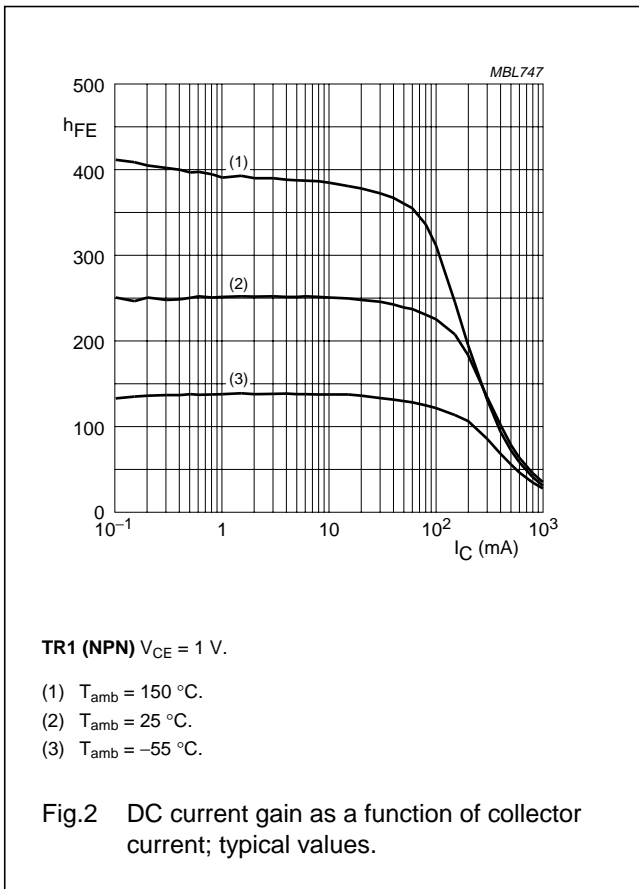
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
<b>Per transistor unless otherwise specified; for the PNP transistor with negative polarity</b>						
$I_{CBO}$	collector-base cut-off current	$V_{CB} = 20\text{ V}; I_E = 0$	–	–	100	nA
		$V_{CB} = 20\text{ V}; I_E = 0; T_j = 150\text{ °C}$	–	–	5	μA
$I_{EBO}$	emitter-base cut-off current	$V_{EB} = 5\text{ V}; I_C = 0$	–	–	100	nA
$h_{FE}$	DC current gain	$V_{CE} = 1\text{ V}; I_C = 100\text{ mA};$ note 1	160	–	400	
		$V_{CE} = 1\text{ V}; I_C = 500\text{ mA};$ note 1	40	–	–	
$V_{CEsat}$	collector-emitter saturation voltage	$I_C = 500\text{ mA}; I_B = 50\text{ mA};$ note 1	–	–	700	mV
$V_{BE}$	base-emitter voltage	$V_{CE} = 1\text{ V}; I_C = 500\text{ mA};$ notes 1 and 2	–	–	1.2	V
<b>NPN transistor</b>						
$C_c$	collector capacitance	$V_{CB} = 10\text{ V}; I_E = I_e = 0; f = 1\text{ MHz}$	–	5	–	pF
$f_T$	transition frequency	$V_{CE} = 5\text{ V}; I_C = 10\text{ mA};$ $f = 100\text{ MHz}$	100	–	–	MHz
<b>PNP transistor</b>						
$C_c$	collector capacitance	$V_{CB} = -10\text{ V}; I_E = I_e = 0; f = 1\text{ MHz}$	–	9	–	pF
$f_T$	transition frequency	$V_{CE} = -5\text{ V}; I_C = -10\text{ mA};$ $f = 100\text{ MHz}$	80	–	–	MHz

## Notes

1. Pulse test:  $t_p \leq 300\text{ μs}; \delta \leq 0.02$ .
2.  $V_{BE}$  decreases by approximately  $-2\text{ mV/K}$  with increasing temperature.

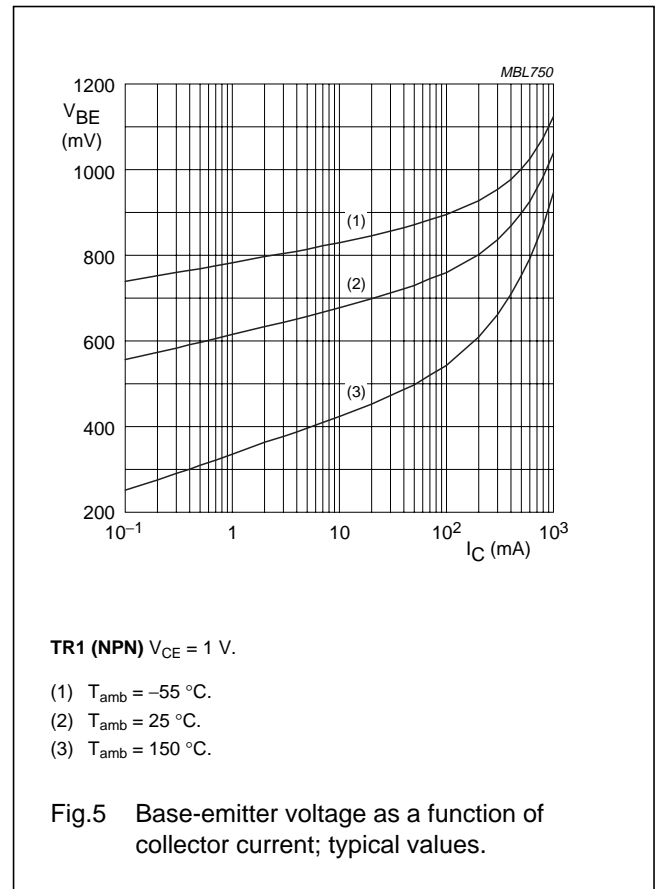
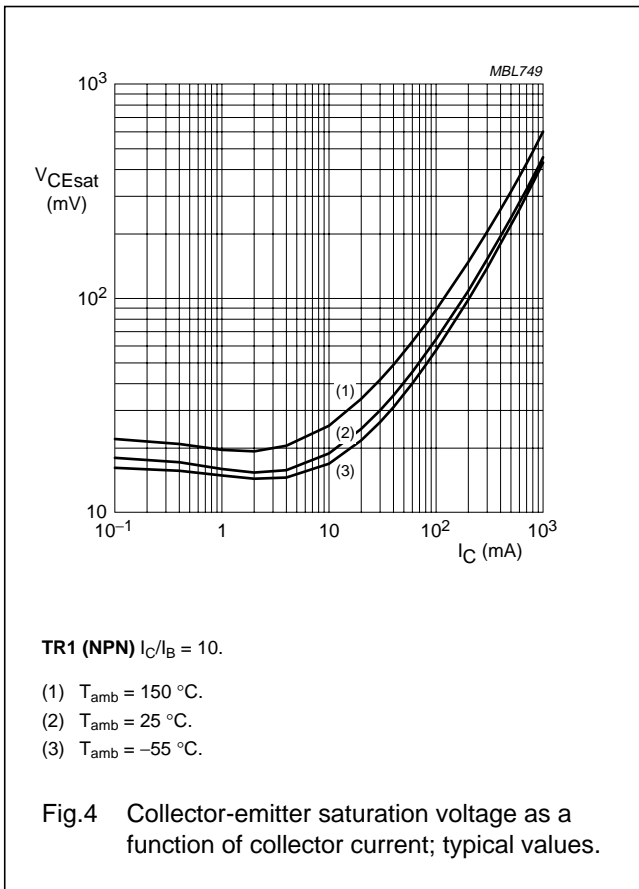
NPN/PNP general purpose transistor

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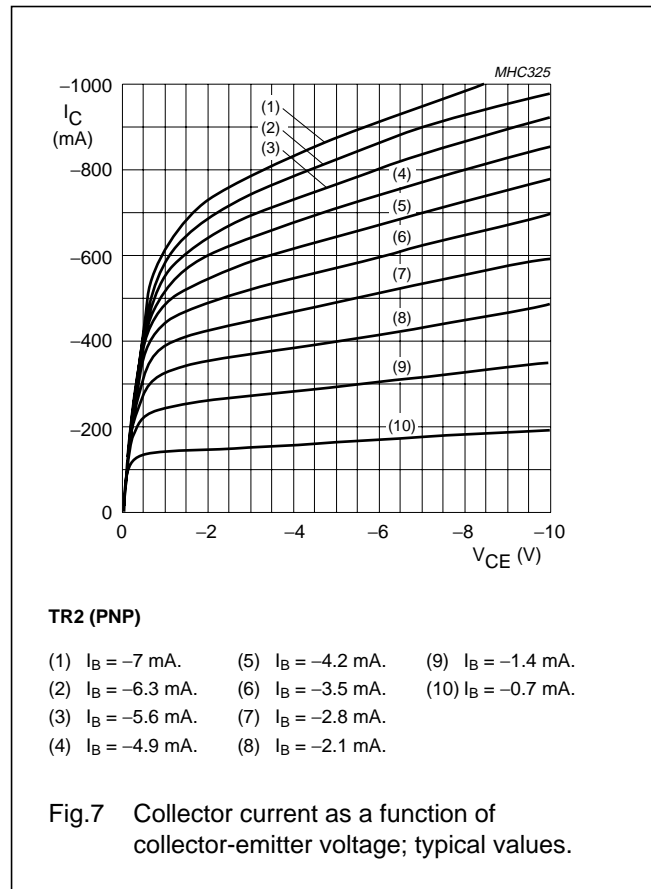
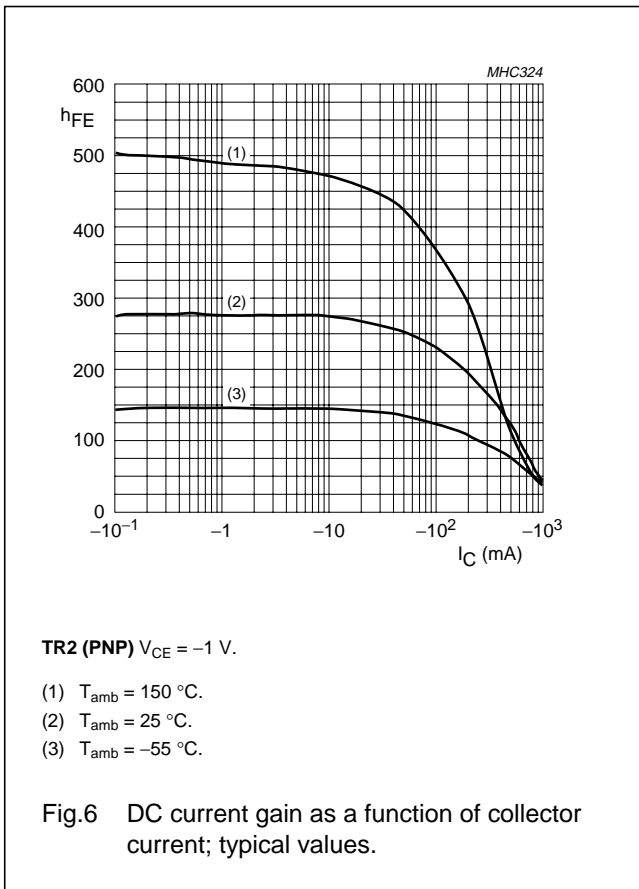
NPN/PNP general purpose transistor

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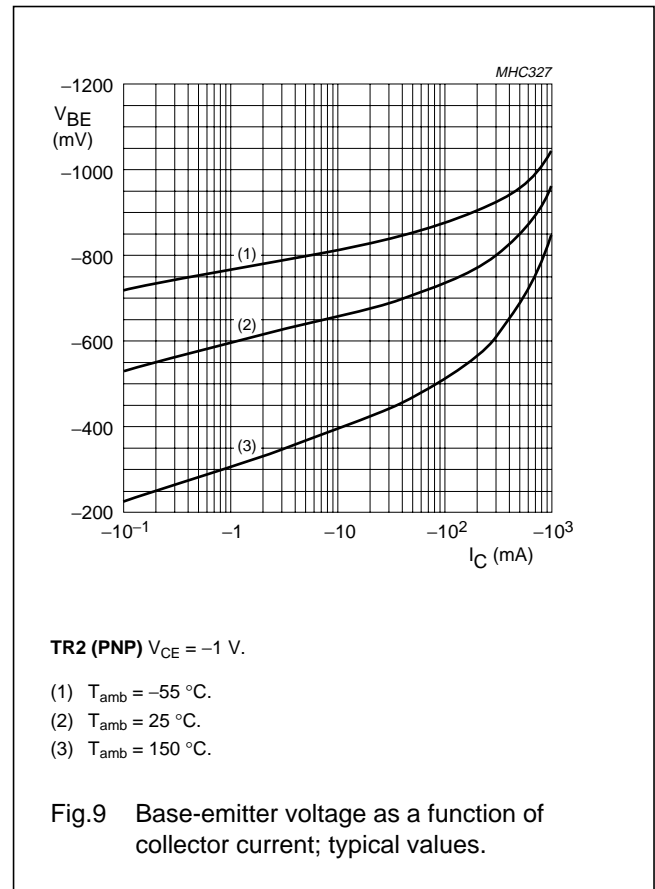
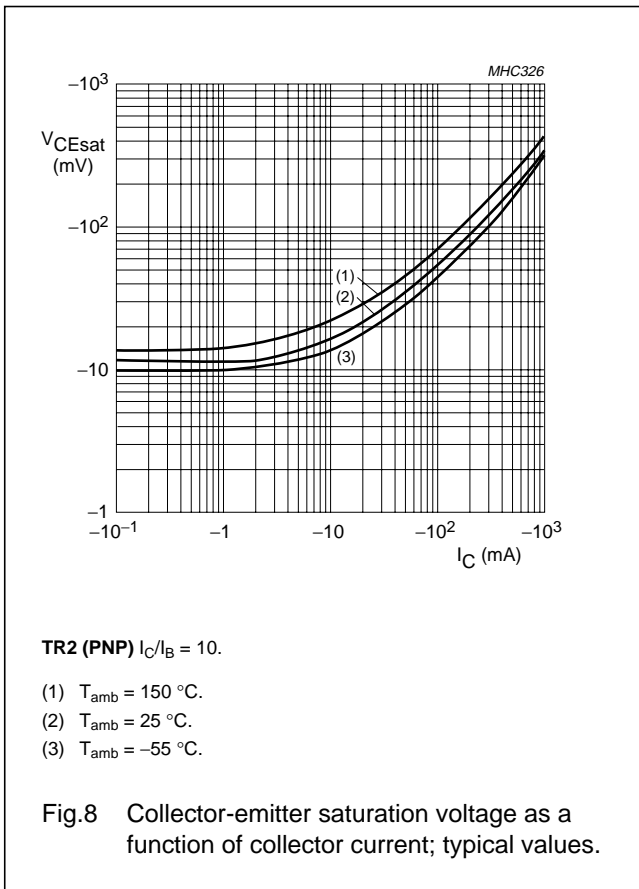
NPN/PNP general purpose transistor

BC817DPN



NPN/PNP general purpose transistor

BC817DPN



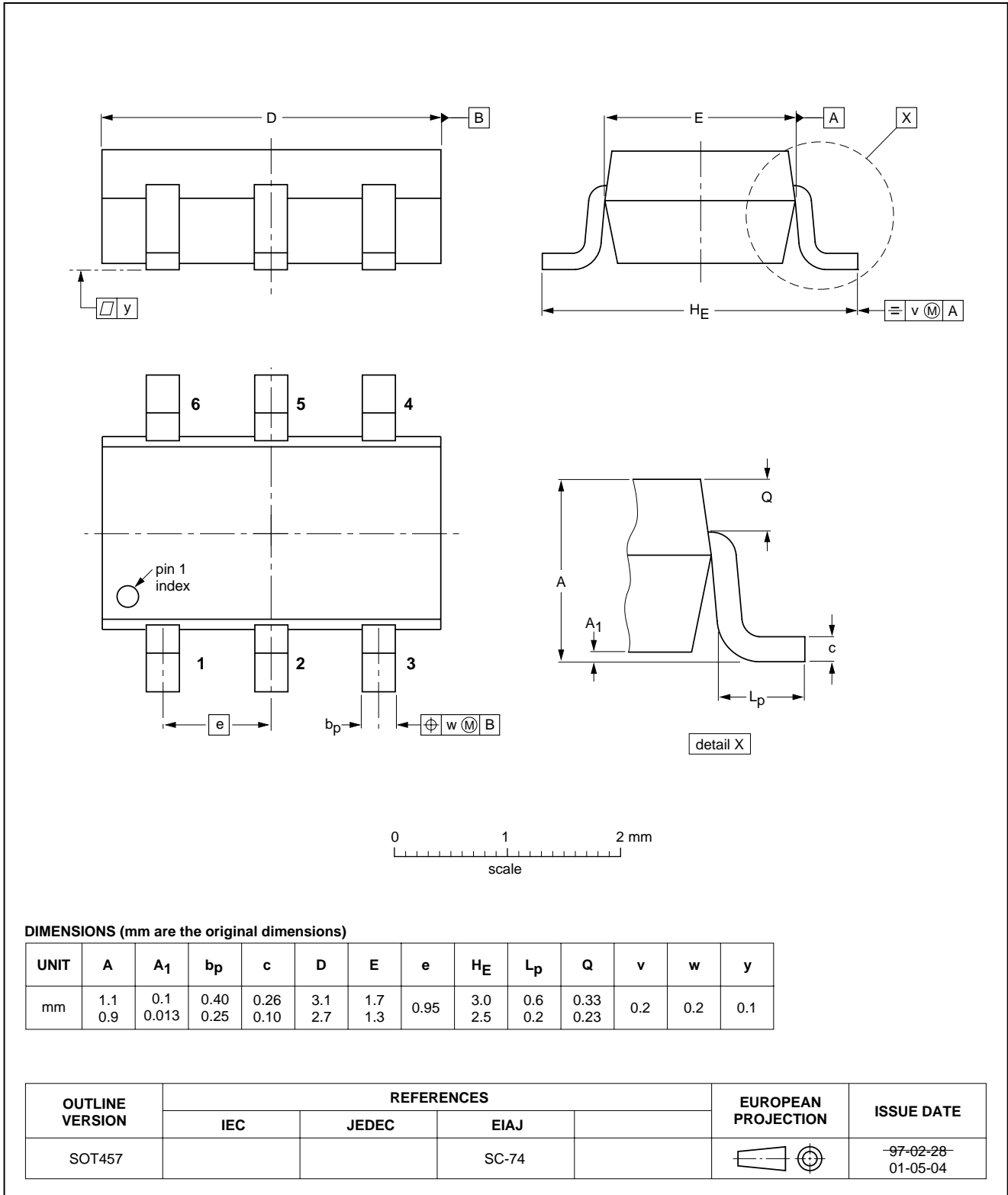
NPN/PNP general purpose transistor

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PACKAGE OUTLINE

Plastic surface mounted package; 6 leads

SOT457





## NPN/PNP general purpose transistor

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## DATA SHEET STATUS

LEVEL	DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)(3)</sup>	DEFINITION
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**NOTES**

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**NOTES**

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Printed in The Netherlands

613514/02/pp12

Date of release: 2002 Nov 22

Document order number: 9397 750 10583

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