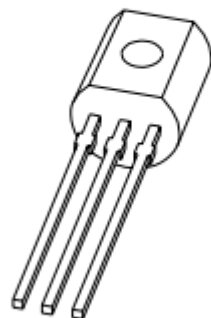


DATA SHEET



BC556; BC557 PNP general purpose transistors

Product specification
Supersedes data of 1997 Mar 27

1999 Apr 15

PNP general purpose transistors

BC556; BC557

FEATURES

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

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

PNP transistor in a TO-92; SOT54 plastic package.
NPN complements: BC546 and BC547.

PINNING

PIN	DESCRIPTION
1	emitter
2	base
3	collector

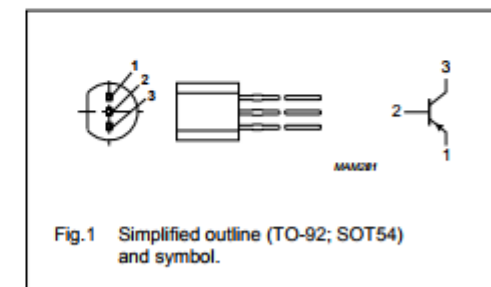


Fig.1 Simplified outline (TO-92; SOT54) and symbol.

LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CB0}	collector-base voltage	open emitter			
	BC556		-	-80	V
	BC557	-	-50	V	
V_{CEO}	collector-emitter voltage	open base			
	BC556		-	-65	V
	BC557	-	-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		-	-200	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25^\circ\text{C}$	-	500	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	$^\circ\text{C}$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th(j-a)}$	thermal resistance from junction to ambient	note 1	250	K/W

Note

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

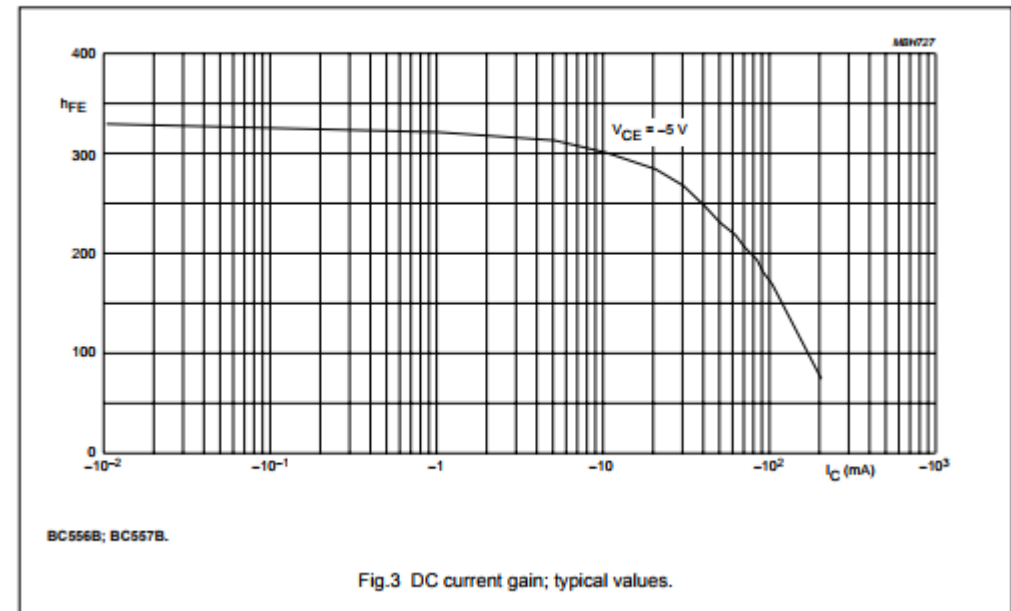
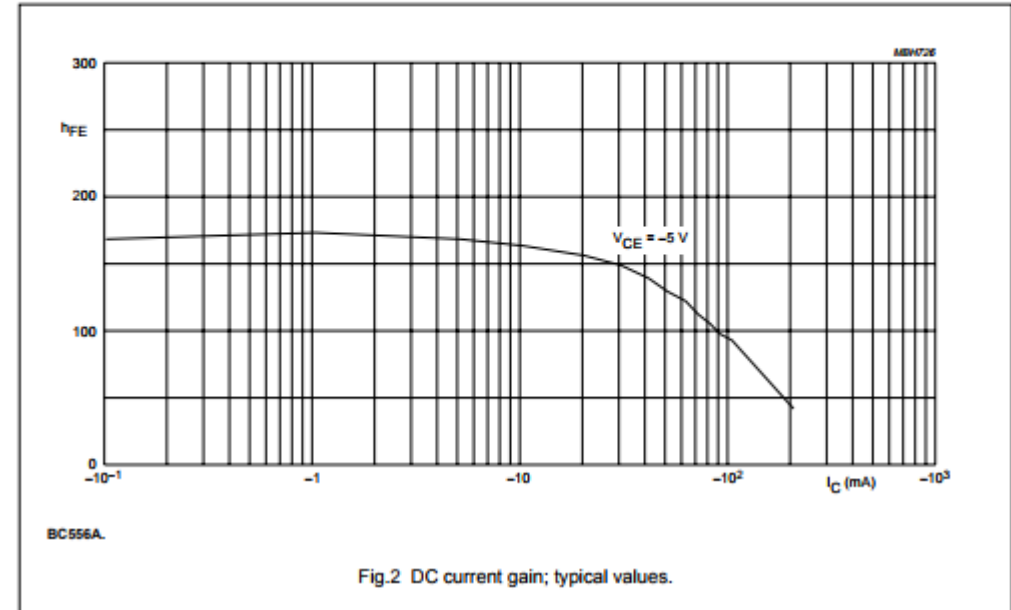
CHARACTERISTICS

$T_J = 25\text{ }^\circ\text{C}$ unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT	
I_{CBO}	collector cut-off current	$I_E = 0; V_{CB} = -30\text{ V}$	-	-1	-15	nA	
		$I_E = 0; V_{CB} = -30\text{ V}; T_J = 150\text{ }^\circ\text{C}$	-	-	-4	μA	
I_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = -5\text{ V}$	-	-	-100	nA	
h_{FE}	DC current gain	$I_C = -2\text{ mA}; V_{CE} = -5\text{ V};$ see Figs 2, 3 and 4	BC556	125	-	475	
			BC557	125	-	800	
			BC556A	125	-	250	
			BC556B; BC557B	220	-	475	
			BC557C	420	-	800	
V_{CEsat}	collector-emitter saturation voltage	$I_C = -10\text{ mA}; I_B = -0.5\text{ mA}$	-	-60	-300	mV	
		$I_C = -100\text{ mA}; I_B = -5\text{ mA}$	-	-180	-650	mV	
V_{BEsat}	base-emitter saturation voltage	$I_C = -10\text{ mA}; I_B = -0.5\text{ mA};$ note 1	-	-750	-	mV	
		$I_C = -100\text{ mA}; I_B = -5\text{ mA};$ note 1	-	-930	-	mV	
V_{BE}	base-emitter voltage	$I_C = -2\text{ mA}; V_{CE} = -5\text{ V};$ note 2	-600	-650	-750	mV	
		$I_C = -10\text{ mA}; V_{CE} = -5\text{ V};$ note 2	-	-	-820	mV	
C_c	collector capacitance	$I_E = I_B = 0; V_{CB} = -10\text{ V}; f = 1\text{ MHz}$	-	3	-	pF	
C_e	emitter capacitance	$I_C = I_C = 0; V_{EB} = -0.5\text{ V}; f = 1\text{ MHz}$	-	10	-	pF	
f_T	transition frequency	$I_C = -10\text{ mA}; V_{CE} = -5\text{ V}; f = 100\text{ MHz}$	100	-	-	MHz	
F	noise figure	$I_C = -200\text{ }\mu\text{A}; V_{CE} = -5\text{ V}; R_S = 2\text{ k}\Omega;$ $f = 1\text{ kHz}; B = 200\text{ Hz}$	-	2	10	dB	

Notes

1. V_{BEsat} decreases by about -1.7 mV/K with increasing temperature.
2. V_{BE} decreases by about -2 mV/K with increasing temperature.



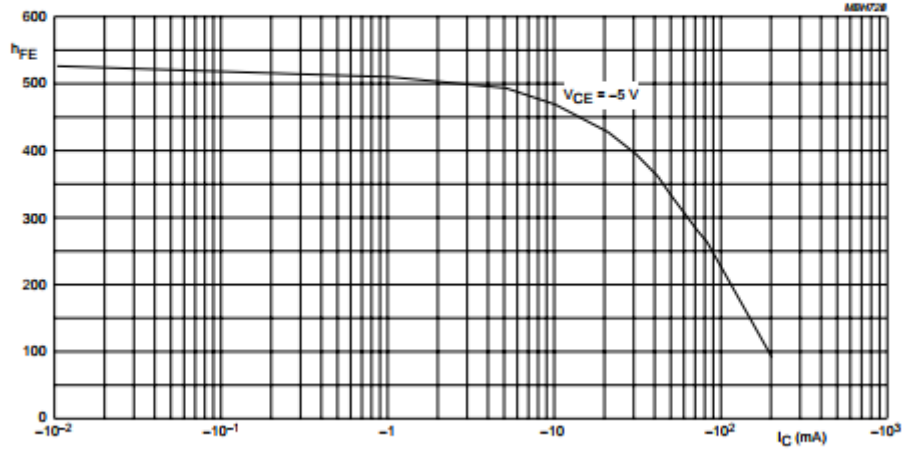
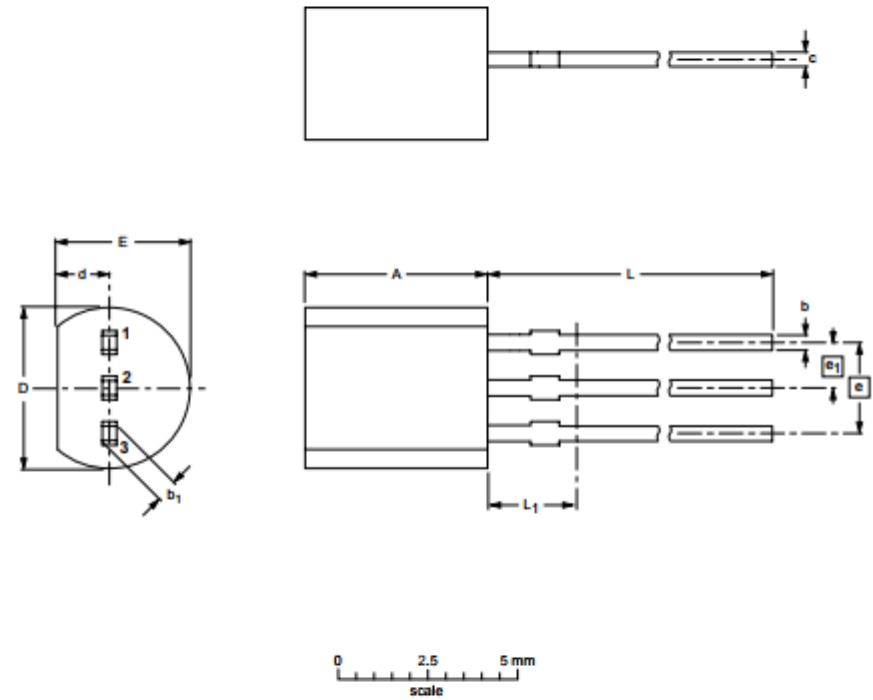


Fig.4 DC current gain; typical values.

PACKAGE OUTLINE

Plastic single-ended leaded (through hole) package; 3 leads

SOT54



DIMENSIONS (mm are the original dimensions)

UNIT	A	b	b ₁	c	D	d	E	e	e ₁	L	L ₁ ⁽¹⁾
mm	5.2	0.48	0.66	0.45	4.8	1.7	4.2	2.54	1.27	14.5	2.5
	5.0	0.40	0.56	0.40	4.4	1.4	3.6			12.7	

Note

1. Terminal dimensions within this zone are uncontrolled to allow for flow of plastic and terminal irregularities.

OUTLINE VERSION	REFERENCES			EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ		
SOT54		TO-92	SC-43		97-02-28