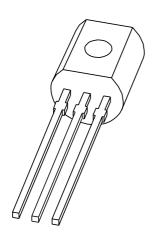
### **DISCRETE SEMICONDUCTORS**

# DATA SHEET



BC556; BC557 PNP general purpose transistors

Product data sheet Supersedes data of 1999 Apr 15

2004 Oct 11



### PNP general purpose transistors

BC556; BC557

### **FEATURES**

• Low current (max. 100 mA)

• Low voltage (max. 65 V).

### **APPLICATIONS**

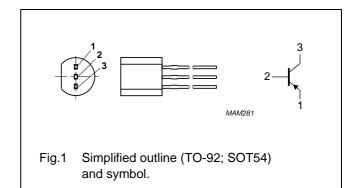
• General purpose switching and amplification.

### **DESCRIPTION**

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

### **PINNING**

PIN	DESCRIPTION
1	emitter
2	base
3	collector



### **ORDERING INFORMATION**

TYPE NUMBER		PACKAGE					
TIPE NUMBER	NAME	DESCRIPTION	VERSION				
BC556	SC-43A	plastic single-ended leaded (through hole) package; 3 leads	SOT54				
BC557							

### **LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V <sub>CBO</sub>	collector-base voltage	open emitter			
	BC556		_	-80	V
	BC557		_	-50	V
V <sub>CEO</sub>	collector-emitter voltage	open base			
	BC556		_	-65	V
	BC557		_	-45	V
V <sub>EBO</sub>	emitter-base voltage	open collector	_	-5	V
Ic	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	$T_{amb} \le 25  ^{\circ}C$	-	500	mW
T <sub>stg</sub>	storage temperature		-65	+150	°C
Tj	junction temperature		_	150	°C
T <sub>amb</sub>	ambient temperature		-65	+150	°C

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### THERMAL CHARACTERISTICS

SY	MBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R <sub>th(j-a</sub>	a)	thermal resistance from junction to ambient	note 1	250	K/W

### Note

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

### **CHARACTERISTICS**

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

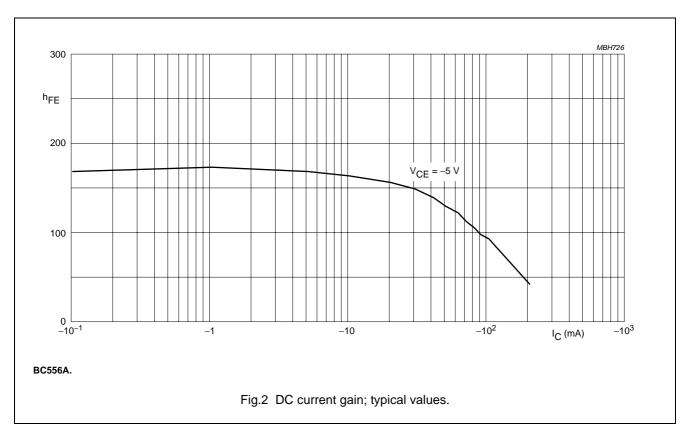
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I <sub>CBO</sub>	collector-base cut-off current	$V_{CB} = -30 \text{ V}; I_E = 0 \text{ A}$	_	-1	-15	nA
		$V_{CB} = -30 \text{ V}; I_E = 0 \text{ A}; T_j = 150 ^{\circ}\text{C}$	_	_	-4	μΑ
I <sub>EBO</sub>	emitter-base cut-off current	$V_{EB} = -5 \text{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

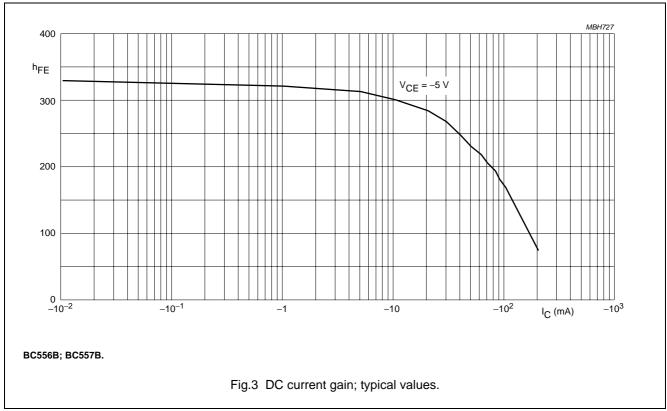
### **Notes**

- 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.

# PNP general purpose transistors

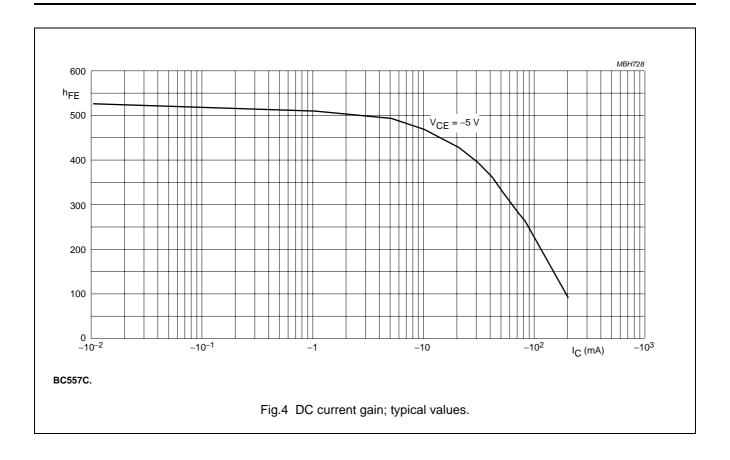
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# PNP general purpose transistors

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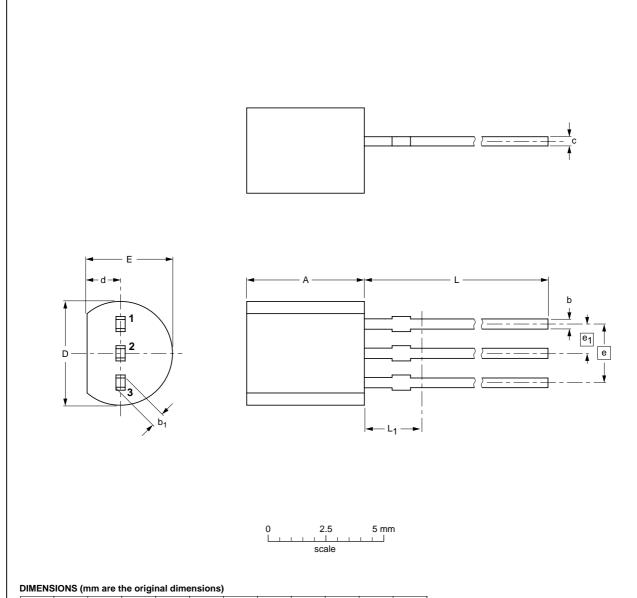
# PNP general purpose transistors

BC556; BC557

### **PACKAGE OUTLINE**

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

SOT54



UNIT	A	b	b <sub>1</sub>	С	D	d	E	е	e <sub>1</sub>	L	L <sub>1</sub> <sup>(1)</sup> max.	
mm	5.2 5.0	0.48 0.40	0.66 0.55	0.45 0.38	4.8 4.4	1.7 1.4	4.2 3.6	2.54	1.27	14.5 12.7	2.5	

#### Note

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

OUTLINE		REFER	EUROPEAN	ISSUE DATE		
VERSION	IEC	JEDEC	JEITA		PROJECTION	ISSUE DATE
SOT54		TO-92	SC-43A			<del>-04-06-28</del> 04-11-16

### PNP general purpose transistors

BC556; BC557

#### **DATA SHEET STATUS**

DOCUMENT STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	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.

### **Notes**

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### **Contact information**

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