



BC859C

30 V, 100 mA PNP general purpose transistors

20 March 2026

Product data sheet

1. General description

PNP transistor in a very small SOT23 Surface-Mounted Device (SMD) plastic package.

NPN complements: BC849B

2. Features and benefits

- Low current (max. 100 mA)
- Low voltage (max. 30V)
- AEC-Q101 qualified

3. Applications

- Low noise input stages of audio-frequency equipment

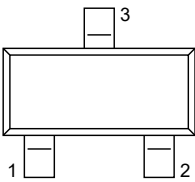
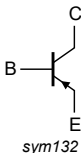
4. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_{CE0}	collector-emitter voltage	Open base	-	-	-30	V
I_C	collector current		-	-	-100	mA
h_{FE}	DC current gain	$V_{CE} = -5\text{ V}$; $I_C = -2\text{ mA}$; see Figs 2 and 3	420	-	800	

5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	B	base	 SOT23	 sym132
2	E	emitter		
3	C	collector		

6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
BC859C	SOT23	plastic, surface-mounted package; 3 terminals; 1.9 mm pitch; 2.9 mm x 1.3 mm x 1 mm body	SOT23

7. Marking

Table 4. Marking codes

Type number	Marking code[1]
BC859C	4C%

[1] % = placeholder for manufacturing site code

8. Limiting values

Table 5. 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		-	-30	V
V_{CEO}	collector-emitter voltage	Open base		-	-30	V
V_{EBO}	emitter-base voltage	Open collector		-	-5	V
I_C	collector current			-	-100	mA
I_{CM}	peak collector current			-	-200	mA
I_{BM}	peak base current			-	-200	mA
P_{tot}	total power dissipation	$T_{amb} = 25\text{ °C}$	[1]	-	250	mW
T_j	junction temperature			-	150	°C
T_{amb}	ambient temperature			-65	150	°C
T_{stg}	storage temperature			-65	150	°C

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

9. Thermal characteristics

Table 6. Thermal characteristics

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
$R_{th(j-a)}$	thermal resistance from junction to ambient		[1]	-	-	500	K/W

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

10. Characteristics

Table 7. Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
I_{CBO}	collector-base cut-off current	$V_{CB} = -30\text{ V}; I_E = 0\text{ A}; T_j = 25\text{ }^{\circ}\text{C}$	-	-1	-15	nA
		$V_{CB} = -30\text{ V}; I_E = 0\text{ A}; T_j = 150\text{ }^{\circ}\text{C}$	-	-	-4	μA
I_{EBO}	emitter-base cut-off current	$V_{EB} = -5\text{ V}; I_C = 0\text{ A}; T_j = 25\text{ }^{\circ}\text{C}$	-	-	-100	nA
h_{FE}	DC current gain	$V_{CE} = -5\text{ V}; I_C = -2\text{ mA}$; see Figs 2 and 3	420	-	800	
V_{CEsat}	collector-emitter saturation voltage	$I_C = -10\text{ mA}; I_B = -0.5\text{ mA}; T_j = 25\text{ }^{\circ}\text{C}$	-	-75	-300	mV
		$I_C = -100\text{ mA}; I_B = -5\text{ mA}; T_j = 25\text{ }^{\circ}\text{C}$	-	-250	-650	mV
V_{BEsat}	base-emitter saturation voltage	$I_C = -10\text{ mA}; I_B = -0.5\text{ mA}; T_j = 25\text{ }^{\circ}\text{C}$ [1]	-	-700	-	mV
		$I_C = -100\text{ mA}; I_B = -5\text{ mA}$ [1]	-	-850	-	mV
V_{BE}	base-emitter voltage	$V_{CE} = -5\text{ V}; I_C = -2\text{ mA}; T_j = 25\text{ }^{\circ}\text{C}$ [2]	-600	-650	-750	mV
		$V_{CE} = -5\text{ V}; I_C = -10\text{ mA}; T_j = 25\text{ }^{\circ}\text{C}$ [2]	-	-	-820	mV
C_c	collector capacitance	$V_{CB} = -10\text{ V}; I_E = 0\text{ A}; i_e = 0\text{ A}; f = 1\text{ MHz}$	-	4.5	-	pF
C_e	emitter capacitance	$V_{EB} = -500\text{ mV}; I_C = 0\text{ A}; i_c = 0\text{ A}; f = 1\text{ MHz}; T_j = 25\text{ }^{\circ}\text{C}$	-	10	-	pF
f_T	transition frequency	$V_{CE} = -5\text{ V}; I_C = -10\text{ mA}; f = 100\text{ MHz}; T_j = 25\text{ }^{\circ}\text{C}$	100	-	-	MHz
NF	noise figure	$V_{CE} = -5\text{ V}; I_C = -200\text{ }\mu\text{A}; R_S = 2\text{ k}\Omega; f = 30\text{ Hz to }15\text{ kHz}; T_j = 25\text{ }^{\circ}\text{C}$	-	-	4	dB
		$V_{CE} = -5\text{ V}; I_C = -200\text{ }\mu\text{A}; R_S = 2\text{ k}\Omega; f = 1\text{ kHz}; B = 200\text{ Hz}; T_j = 25\text{ }^{\circ}\text{C}$	-	-	4	dB

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

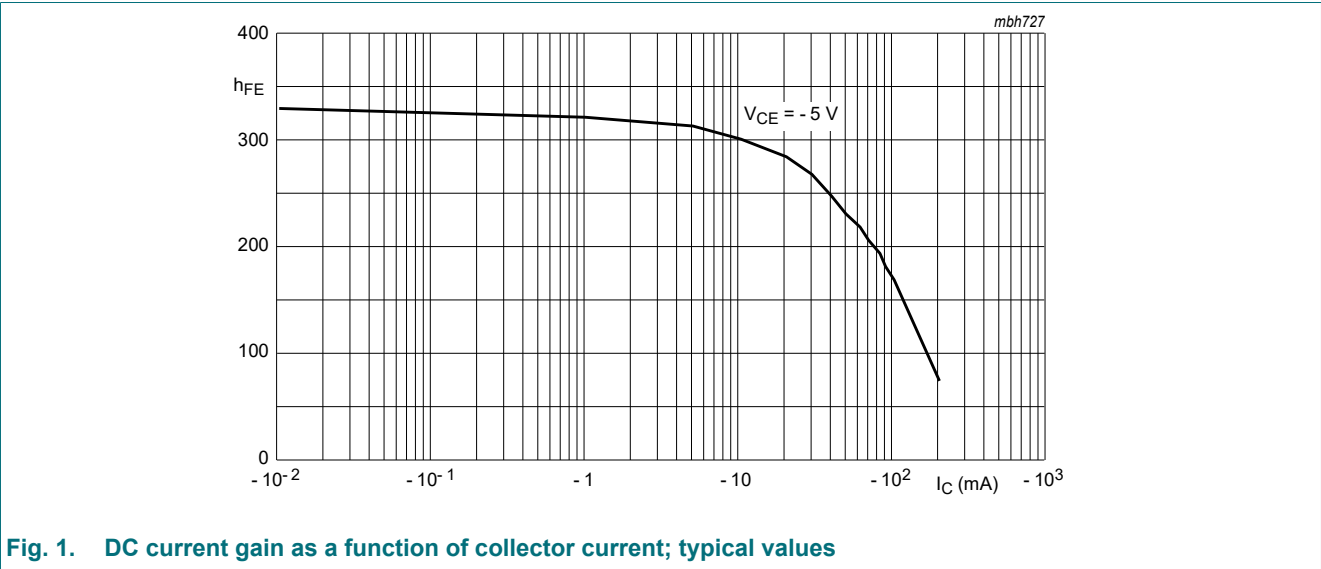


Fig. 1. DC current gain as a function of collector current; typical values

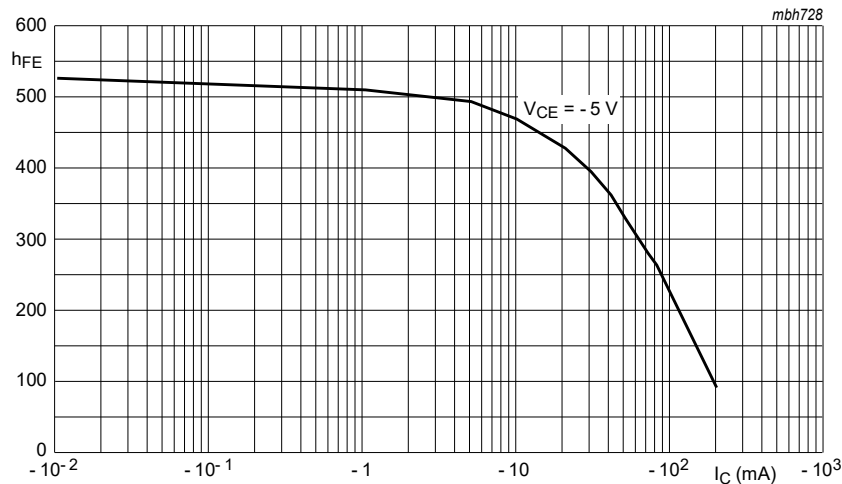


Fig. 2. DC current gain as a function of collector current; typical values

11. Package outline

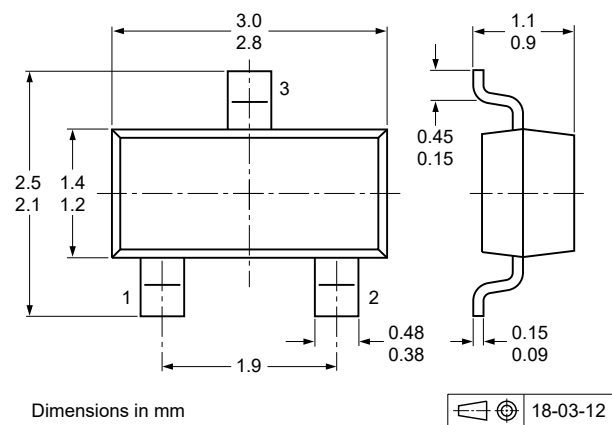


Fig. 3. Package outline SOT23

12. Soldering

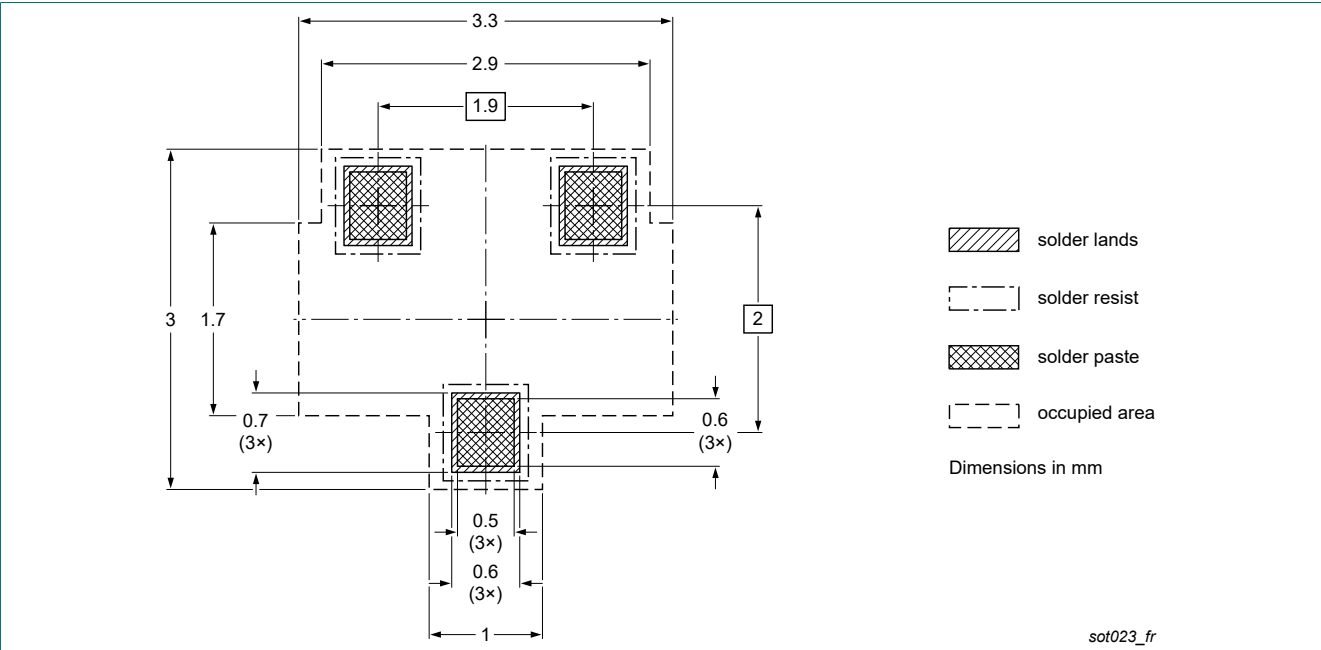


Fig. 4. Reflow soldering footprint for SOT23

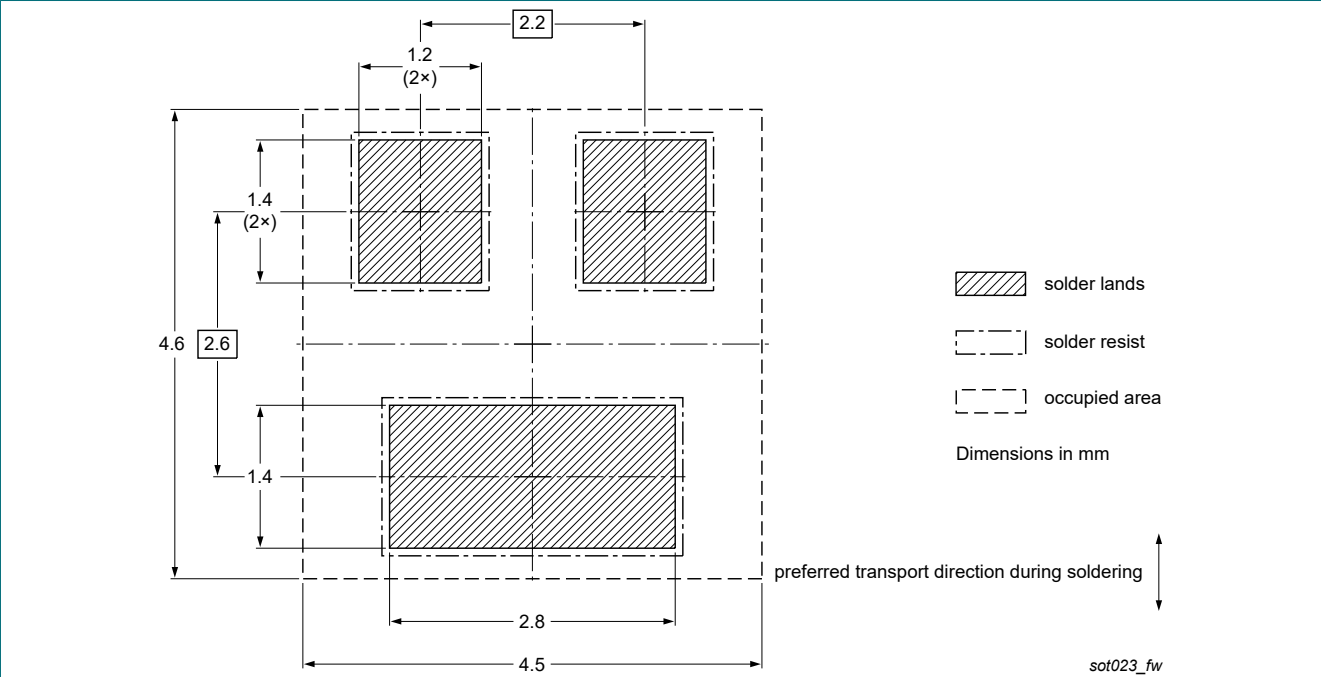


Fig. 5. Wave soldering footprint for SOT23

13. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
BC859C v.2	20260320	Product data sheet	-	BC859C v.1
Modifications:	- The format of this data sheet has been redesigned to comply with the identity guidelines of Nexperia. - Legal texts have been adapted to the new company name where appropriate. - Family data sheet split to single type data sheets.			
BC859C v.1	20040116	Product data sheet	-	-

14. Legal information

Data sheet status

Document status [1][2]	Product status [3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

- [1] Please consult the most recently issued document before initiating or completing a design.
- [2] The term 'short data sheet' is explained in section "Definitions".
- [3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the internet at <https://www.nexperia.com>.

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