

BC859CW-Q

30 V, 100 mA PNP general purpose transistors

20 January 2026 Product data sheet

1. General description

PNP transistor in a very small SOT323 (SC-70) Surface-Mounted Device (SMD) plastic package.

NPN complements: BC849CW-Q

2. Features and benefits

- Low current (max. 100 mA)
- Low voltage (max. 30 V)
- Qualified according to AEC-Q101 and recommended for use in automotive applications

3. Applications

- Low noise stages in tape recorders, hi-fi amplifiers and other audio-frequency equipment

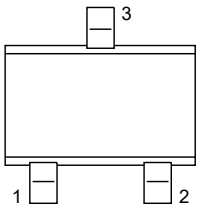
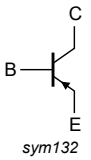
4. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
V_{CEO}	collector-emitter voltage	open base		-	-	-30	V
I_C	collector current			-	-	-100	mA
h_{FE}	DC current gain	V_{CE} = -5 V; I_C = -2 mA; T_{amb} = 25 °C		420	-	800	

5. Pinning information

Table 2. Pinning information

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

SC-70 (SOT323)

sym132

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6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
BC859CW-Q	SC-70	plastic, surface-mounted package; 3 leads; 1.3 mm pitch; 2 mm x 1.25 mm x 0.95 mm body	SOT323

7. Marking

Table 4. Marking codes

Type number	Marking code[1]
BC859CW-Q	4C%

[1] % = placeholder for manufacturing site code

8. Limiting values

Table 5. Limiting values

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

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 °	[1]	-	200	mW
T_j	junction temperature			-	150	°C
T_{amb}	ambient temperature			-65	150	°C
T_{stg}	storage temperature			-65	150	°C

[1] Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated and standard footprint.

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]	-	-	625	K/W

[1] Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.

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10. Characteristics

Table 7. Characteristics

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
I_{CBO}	collector-base cut-off current	V_{CB} = -30 V; I_E = 0 A; T_{amb} = 25 °C		-	-	-15	nA
		V_{CB} = -30 V; I_E = 0 A; T_j = 150 °C		-	-	-4	µA
I_{EBO}	emitter-base cut-off current	V_{EB} = -5 V; I_C = 0 mA; T_{amb} = 25 °C		-	-	-100	nA
h_{FE}	DC current gain	V_{CE} = -5 V; I_C = -2 mA; T_{amb} = 25 °C		420	-	800	
V_{CEsat}	collector-emitter saturation voltage	I_C = -10 mA; I_B = -0.5 mA; T_{amb} = 25 °C		-	-	-300	mV
		I_C = 100 mA; I_B = 0.5 mA; pulsed; $t_p \leq$ 300 µs; $\delta \leq$ 0.02; T_{amb} = 25 °C		-	-	-650	mV
V_{BE}	base-emitter voltage	V_{CE} = -5 V; I_C = -2 mA; T_{amb} = 25 °C		-600	-	-750	mV
		V_{CE} = -5 V; I_C = -10 mA; T_{amb} = 25 °C		-	-	-820	mV
C_c	collector capacitance	V_{CB} = -10 V; I_E = 0 A; i_e = 0 A; f = 1 MHz; T_{amb} = 25 °C		-	-	5	pF
C_e	emitter capacitance	V_{EB} = -500 mV; I_C = 0 A; i_c = 0 A; f = 1 MHz; T_{amb} = 25 °C		-	10	-	pF
f_T	transition frequency	V_{CE} = -5 V; I_C = -10 mA; f = 100 MHz; T_{amb} = 25 °C		100	-	-	MHz
NF	noise figure	V_{CE} = -5 V; I_C = -200 µA; R_S = 2 kΩ; f = 10 Hz to 15.7 kHz; T_{amb} = 25 °C		-	-	4	dB
		V_{CE} = -5 V; I_C = -200 µA; R_S = 2 kΩ; f = 1 kHz; B = 200 Hz; T_{amb} = 25 °C		-	-	4	dB

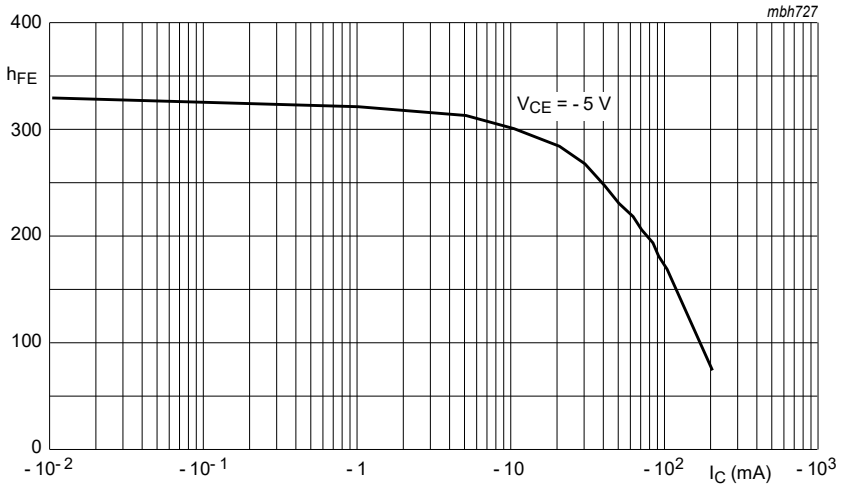


Fig. 1. DC current gain as a function of collector current; typical values

11. Test information

Quality information

This product has been qualified in accordance with the Automotive Electronics Council (AEC) standard *Q101 - Stress test qualification for discrete semiconductors*, and is suitable for use in automotive applications.

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12. Package outline

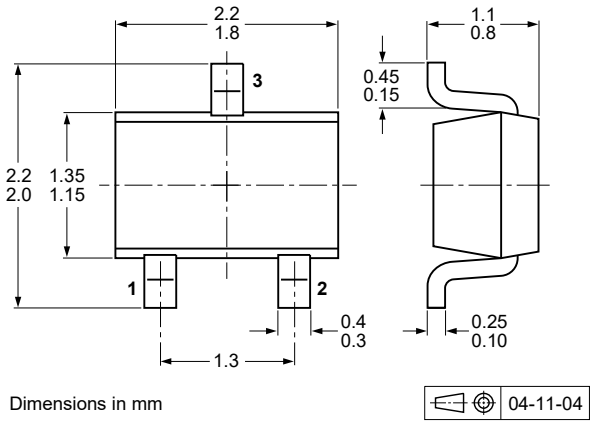


Fig. 2. Package outline SC-70 (SOT323)

13. Soldering

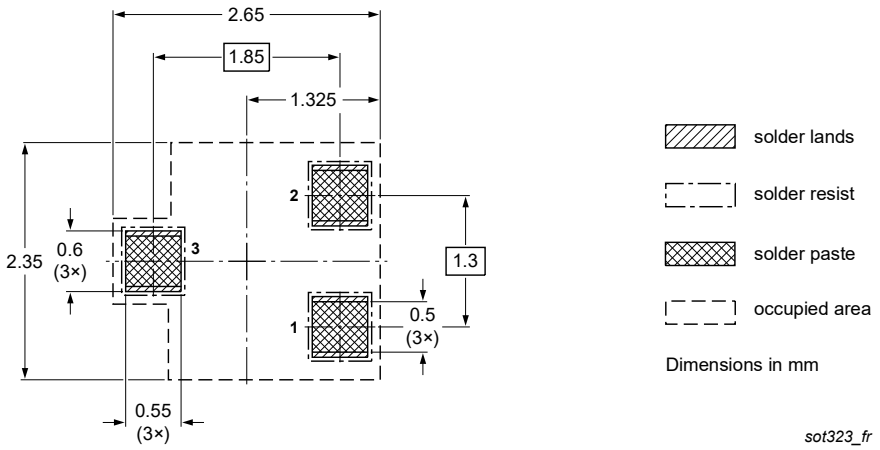


Fig. 3. Reflow soldering footprint for SC-70 (SOT323)

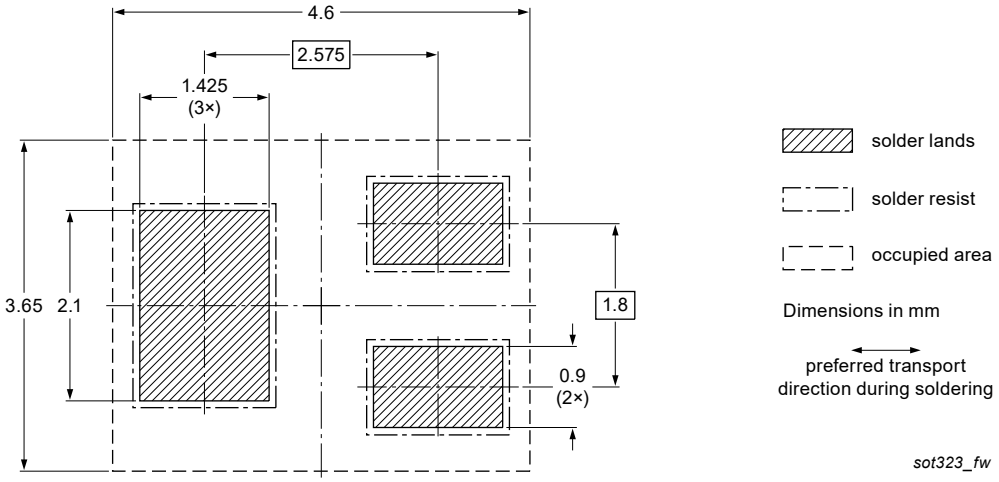


Fig. 4. Wave soldering footprint for SC-70 (SOT323)

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14. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
BC859CW-Q v.1	20260120	Product data sheet	-	-

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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.
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