



# 2PB1219AS-Q

PNP general purpose transistor

15 May 2025

Product data sheet

## 1. General description

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

## 2. Features and benefits

- High current (max. 500 mA)
- Low voltage (max. 50 V)
- Low collector-emitter saturation voltage (max. 600 mV)
- Qualified according to AEC-Q101 and recommended for use in automotive applications

## 3. Applications

- General purpose switching and amplification

## 4. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$V_{CE0}$	collector-emitter voltage	open base	-	-	-50	V
$I_C$	collector current		-	-	-500	mA
$h_{FE}$	DC current gain	$V_{CE} = -10\text{ V}$ ; $I_C = -150\text{ mA}$ ; pulsed; $t_p \leq 300\text{ }\mu\text{s}$ ; $\delta \leq 0.02$ ; $T_{amb} = 25\text{ }^\circ\text{C}$	170	-	340	

## 5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	B	base	 SC-70 (SOT323)	 sym013
2	E	emitter		
3	C	collector		

6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
2PB1219AS-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]
2PB1219AS-Q	D%S

[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 <sub>CBO</sub>	collector-base voltage	open emitter		-	-60	V
V <sub>CEO</sub>	collector-emitter voltage	open base		-	-50	V
V <sub>EBO</sub>	emitter-base voltage	open collector		-	-5	V
I <sub>C</sub>	collector current			-	-500	mA
I <sub>CM</sub>	peak collector current	single pulse; t <sub>p</sub> ≤ 1 ms		-	-1	A
I <sub>BM</sub>	peak base current			-	-200	mA
P <sub>tot</sub>	total power dissipation	T <sub>amb</sub> ≤ 25 °C	[1]	-	200	mW
T <sub>j</sub>	junction temperature			-	150	°C
T <sub>amb</sub>	ambient temperature			-65	150	°C
T <sub>stg</sub>	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

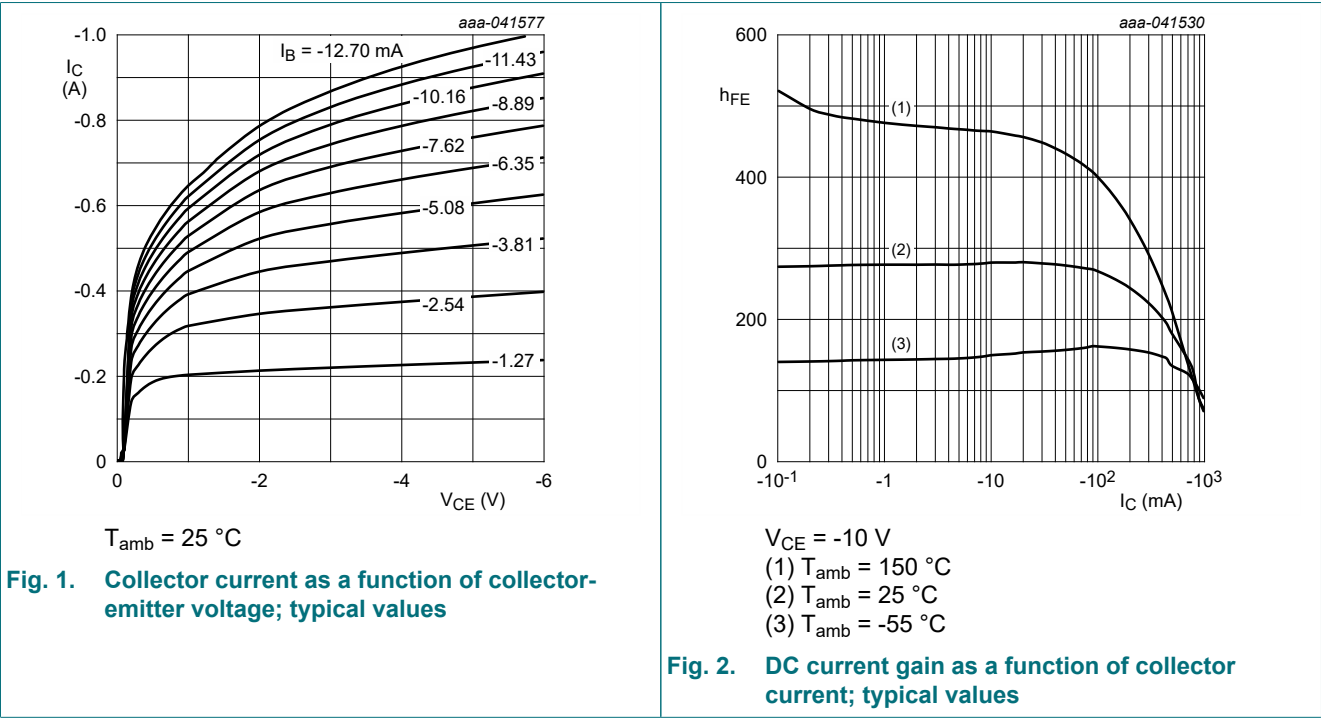
Symbol	Parameter	Conditions		Min	Typ	Max	Unit
R <sub>th(j-a)</sub>	thermal resistance from junction to ambient	in free air	[1]	-	-	625	K/W

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

10. Characteristics

Table 7. Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
I <sub>CBO</sub>	collector-base cut-off current	V <sub>CB</sub> = -20 V; I <sub>E</sub> = 0 A; T <sub>amb</sub> = 25 °C	-	-	-100	nA
		V <sub>CB</sub> = -20 V; I <sub>E</sub> = 0 A; T <sub>j</sub> = 150 °C	-	-	-5	μA
I <sub>EBO</sub>	emitter-base cut-off current	V <sub>EB</sub> = -4 V; I <sub>C</sub> = 0 A; T <sub>amb</sub> = 25 °C	-	-	-100	nA
h <sub>FE</sub>	DC current gain	V <sub>CE</sub> = -10 V; I <sub>C</sub> = -150 mA; pulsed; t <sub>p</sub> ≤ 300 μs; δ ≤ 0.02; T <sub>amb</sub> = 25 °C	170	-	340	
		V <sub>CE</sub> = -10 V; I <sub>C</sub> = -500 mA; pulsed; t <sub>p</sub> ≤ 300 μs; δ ≤ 0.02; T <sub>amb</sub> = 25 °C	40	-	-	
V <sub>CEsat</sub>	collector-emitter saturation voltage	I <sub>C</sub> = -300 mA; I <sub>B</sub> = -30 mA; pulsed; t <sub>p</sub> ≤ 300 μs; δ ≤ 0.02; T <sub>amb</sub> = 25 °C	-	-	-600	mV
V <sub>BEsat</sub>	base-emitter saturation voltage		-	-	-1.5	V
C <sub>c</sub>	collector capacitance	V <sub>CB</sub> = -10 V; I <sub>E</sub> = 0 A; i <sub>e</sub> = 0 A; f = 1 MHz; T <sub>amb</sub> = 25 °C	-	-	15	pF
f <sub>T</sub>	transition frequency	V <sub>CE</sub> = -10 V; I <sub>C</sub> = 50 mA; f = 100 MHz; T <sub>amb</sub> = 25 °C; pulsed: t <sub>p</sub> ≤ 300 μs; δ ≤ 0.02	140	-	-	MHz



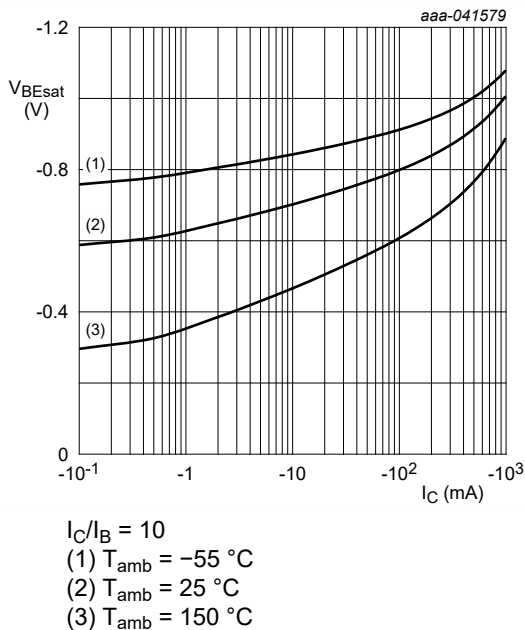


Fig. 3. Base-emitter saturation voltage as a function of collector current; typical values

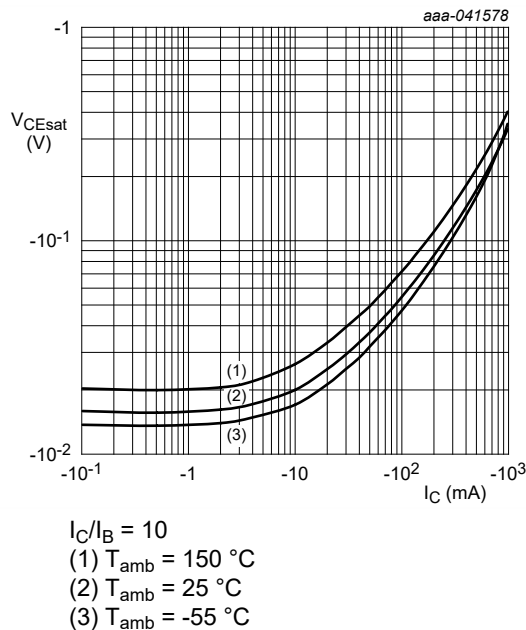


Fig. 4. Collector-emitter saturation voltage as a function of collector current; typical values

## 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.

## 12. Package outline

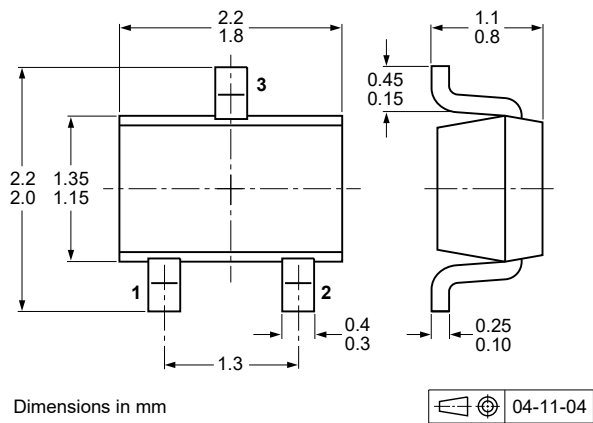
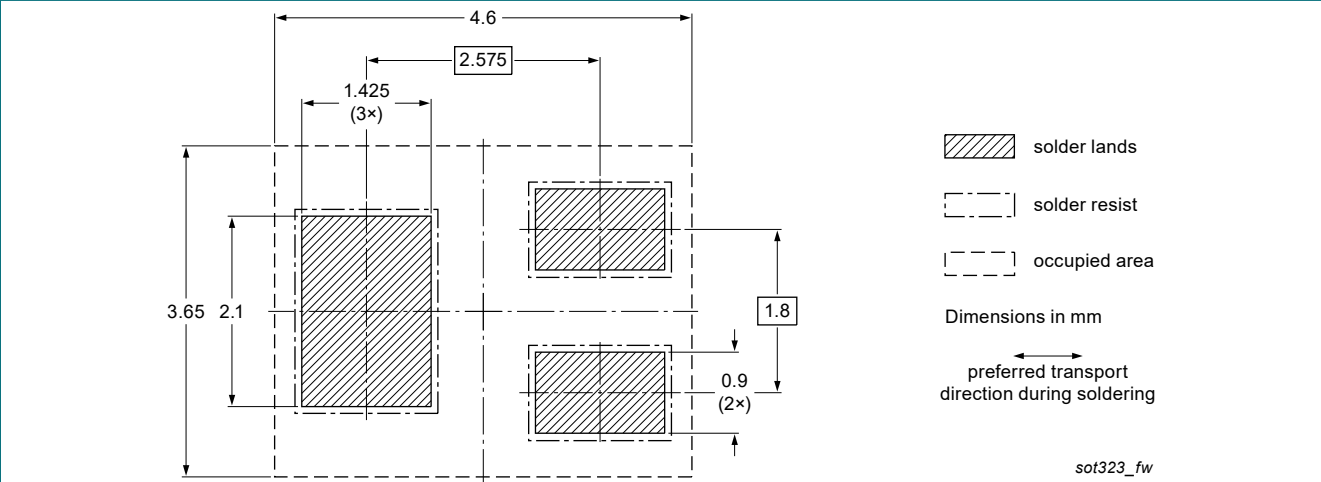
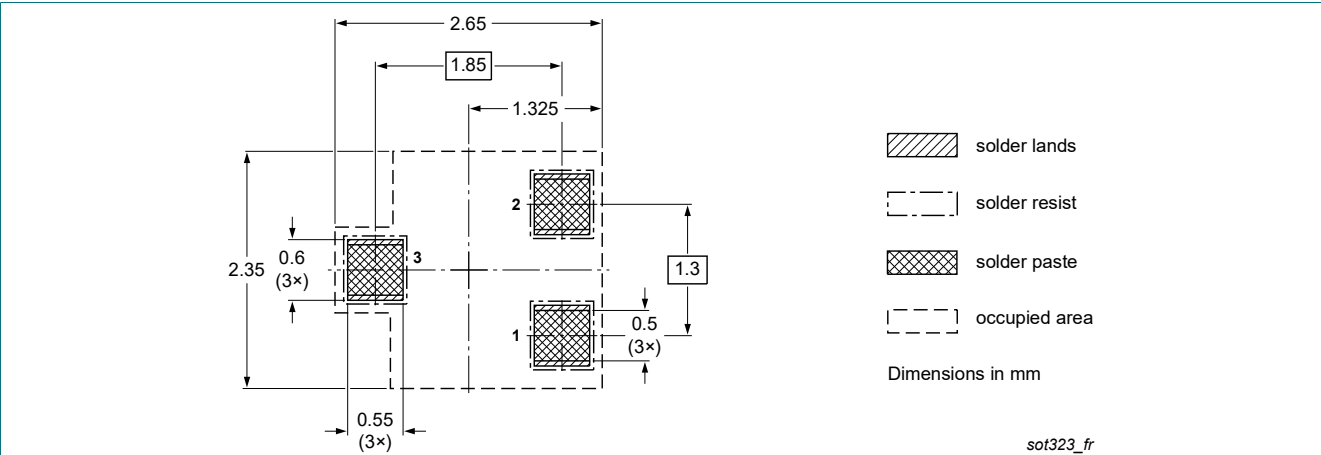


Fig. 5. Package outline SC-70 (SOT323)

13. Soldering



## 14. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
2PB1219AS-Q v.1	20250515	Product data sheet	-	-

## 15. 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.

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Contents

1. General description..... 1

2. Features and benefits..... 1

3. Applications..... 1

4. Quick reference data..... 1

5. Pinning information..... 1

6. Ordering information..... 2

7. Marking..... 2

8. Limiting values..... 2

9. Thermal characteristics..... 2

10. Characteristics..... 3

11. Test information..... 4

12. Package outline..... 4

13. Soldering..... 5

14. Revision history..... 6

15. Legal information..... 7

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