



BC807DS

PNP/PNP general purpose double transistors

8 July 2024

Product data sheet

1. General description

PNP/PNP general-purpose double transistors in an SOT457 (SC-74) plastic package.

NPN/NPN complement: BC817DS

NPN/PNP complement: BC817DPN

2. Features and benefits

- Reduces component count
- Reduces pick and place costs
- AEC-Q101 qualified

3. Applications

- General purpose switching and amplification

4. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Per transistor						
V_{CEO}	collector-emitter voltage	open base	-	-	-45	V
I_C	collector current		-	-	-500	mA
I_{CM}	peak collector current	single pulse; $t_p \leq 1$ ms	-	-	-1	A

5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	E1	emitter TR1	TSOP6 (SOT457)	sym018
2	B1	base TR1		
3	C2	collector TR2		
4	E2	emitter TR2		
5	B2	base TR2		
6	C1	collector TR1		

6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
BC807DS	TSOP6	plastic, surface-mounted package (SC-74; TSOP6); 6 leads	SOT457

7. Marking

Table 4. Marking codes

Type number	Marking code
BC807DS	N2

8. Limiting values

Table 5. Limiting values

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

Symbol	Parameter	Conditions		Min	Max	Unit
Per transistor						
V _{CBO}	collector-base voltage	open emitter		-	-50	V
V _{CEO}	collector-emitter voltage	open base		-	-45	V
V _{EBO}	emitter-base voltage	open collector		-	-5	V
I _C	collector current			-	-500	mA
I _{CM}	peak collector current	single pulse; t _p ≤ 1 ms		-	-1	A
I _{BM}	peak base current			-	-200	mA
P _{tot}	total power dissipation	T _{amb} ≤ 25 °C	[1]	-	370	mW
T _j	junction temperature			-	150	°C
T _{amb}	ambient temperature			-65	150	°C
T _{stg}	storage temperature			-65	150	°C
Per device						
P _{tot}	total power dissipation	T _{amb} ≤ 25 °C	[1]	-	600	mW

[1] Device mounted on an FR4 Printed-Circuit Board (PCB); single-sided copper; tin plated; mounting pad for collector 1 cm².

9. Thermal characteristics

Table 6. Thermal characteristics

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
Per device							
R _{th(j-a)}	thermal resistance from junction to ambient	in free air	[1]	-	-	208	K/W

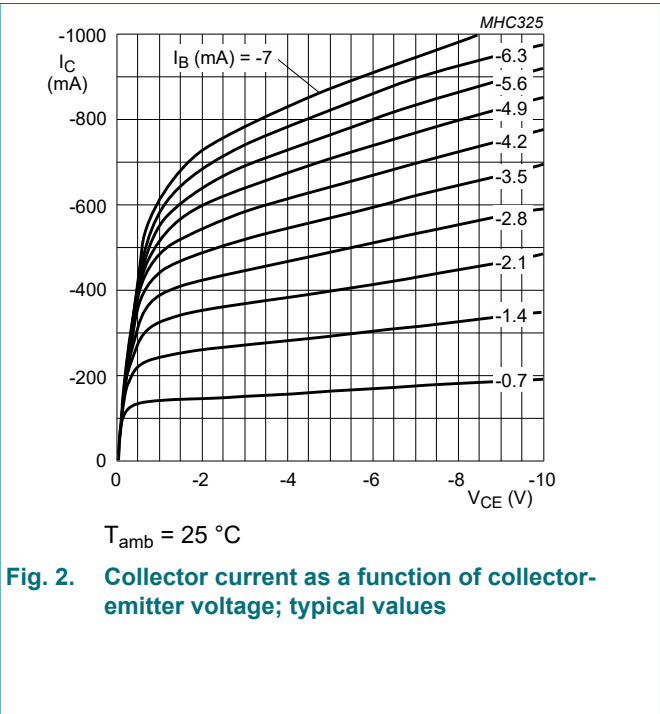
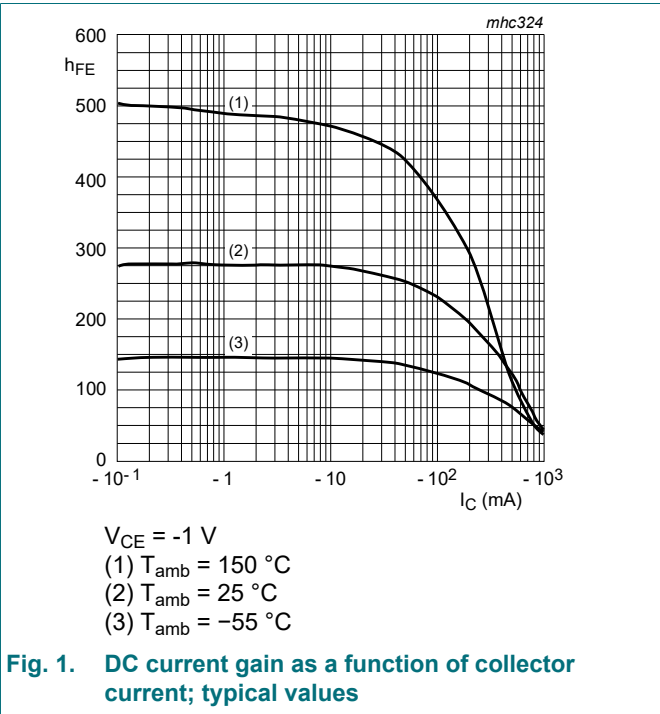
[1] Device mounted on an FR4 PCB; single-sided copper; tin-plated; mounting pad for collector 1 cm².

10. Characteristics

Table 7. Characteristics
T_{amb} = 25 °C unless otherwise specified.

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
Per transistor							
I _{CBO}	collector-base cut-off current	V _{CB} = -20 V; I _E = 0 A		-	-	-100	nA
		V _{CB} = -20 V; I _E = 0 A; T _j = 150 °C		-	-	-5	μA
I _{EBO}	emitter-base cut-off current	V _{EB} = -5 V; I _C = 0 A		-	-	-100	nA
h _{FE}	DC current gain	V _{CE} = -1 V; I _C = -100 mA	[1]	160	-	400	
		V _{CE} = -1 V; I _C = -500 mA	[1]	40	-	-	
V _{CEsat}	collector-emitter saturation voltage	I _C = -500 mA; I _B = -50 mA	[1]	-	-	-700	mV
V _{BE}	base-emitter voltage	V _{CE} = -1 V; I _C = -500 mA	[1] [2]	-	-	-1.2	V
C _c	collector capacitance	V _{CB} = -10 V; I _E = 0 A; i _e = 0 A; f = 1 MHz		-	9	-	pF
f _T	transition frequency	V _{CE} = -5 V; I _C = -10 mA; f = 100 MHz		80	-	-	MHz

- [1] Pulsed test: t_p ≤ 300 μs; δ ≤ 0.02
[2] V_{BE} decreases by approximately -2 mV/k with increasing temperature.



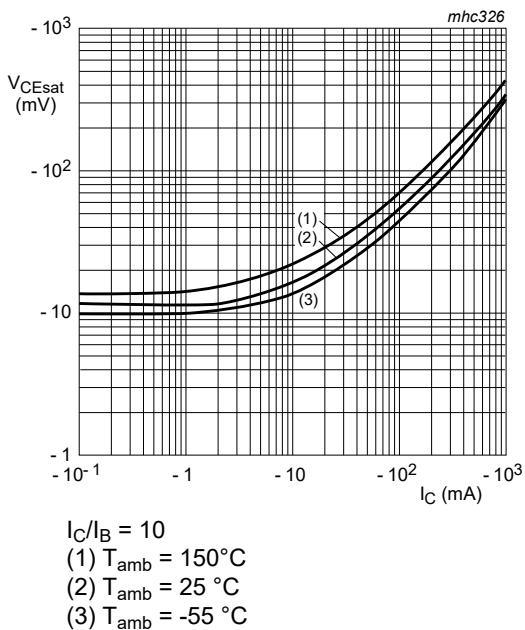


Fig. 3. Collector-emitter saturation voltage as a function of collector current; typical values

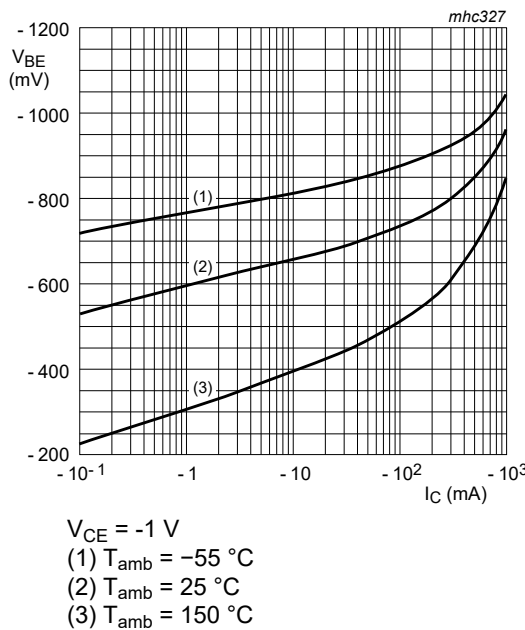


Fig. 4. Base-emitter voltage as a function of collector current; typical values

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

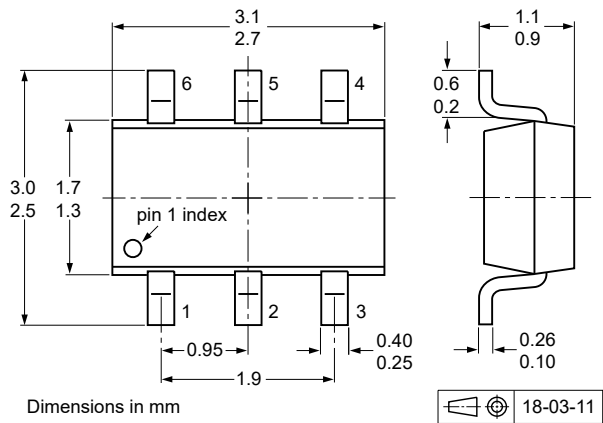
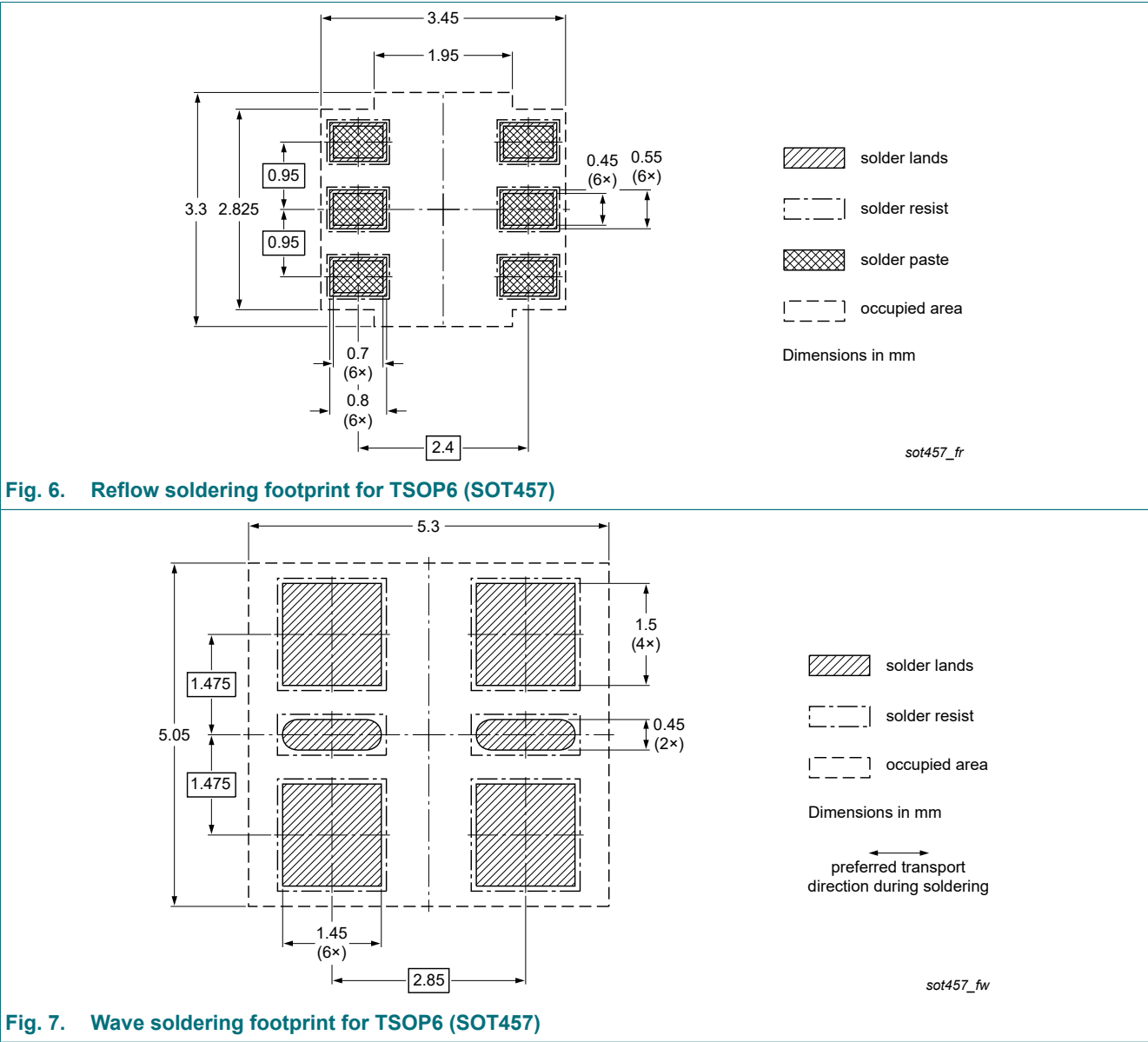


Fig. 5. Package outline TSOP6 (SOT457)

13. Soldering



14. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
BC807DS v.4	20240708	Product data sheet	-	BC807DS v.3
Modifications:	• Pinning Information graphics symbol is corrected.			
BC807DS v.3	20190503	Product data sheet	-	BC807DS v.2
BC807DS v.2	20021122	Product data sheet	-	BC807DS v.1
BC807DS v.1	20020809	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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- [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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Date of release: 8 July 2024