

BCM856DS

65 V, 100 mA PNP/PNP matched double transistors

12 August 2026 Product data sheet

1. General description

PNP/PNP matched double transistors in SOT457 (SC-74) small Surface-Mounted Device (SMD) plastic package. The transistors are fully isolated internally.

2. Features and benefits

- Current gain matching
- Base-emitter voltage matching
- Drop-in replacement for standard double transistors

3. Applications

- Current mirror
- Differential amplifier

4. Quick reference data

Table 1. Quick reference data

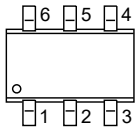
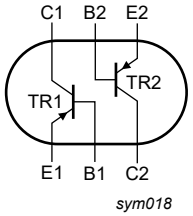
Symbol	Parameter	Conditions		Min	Typ	Max	Unit
Per transistor							
V_{CEO}	collector-emitter voltage	open base		-	-	-65	V
I_C	collector current			-	-	-100	mA
h_{FE}	DC current gain	V_{CE} = -5 V; I_C = -2 mA; T_{amb} = 25 °C		200	290	450	
Per device							
h_{FE1}/h_{FE2}	DC current gain matching	V_{CE} = -5 V; I_C = -2 mA; T_{amb} = 25 °C	[1]	0.9	1	-	
$V_{BE1}-V_{BE2}$	base-emitter voltage matching		[2]	-	-	2	mV

[1] The smaller of the two values is taken as the numerator.
[2] The smaller of the two values is subtracted from the larger value.

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5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	E1	emitter TR1	 TSOP6 (SOT457)	
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
BCM856DS	TSOP6	plastic, surface-mounted package (SC-74; TSOP6); 6 leads	SOT457

7. Marking

Table 4. Marking codes

Type number	Marking code
BCM856DS	DS

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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		-	-80	V
V_{CEO}	collector-emitter voltage	open base		-	-65	V
V_{EBO}	emitter-base voltage	open collector		-	-5	V
I_C	collector current			-	-100	mA
I_{CM}	peak collector current	$t_p \leq$ 1 ms; single pulse		-	-200	mA
P_{tot}	total power dissipation	$T_{amb} \leq$ 25 °C	[1]	-	250	mW
Per device						
P_{tot}	total power dissipation	$T_{amb} \leq$ 25 °C	[1]	-	380	mW
T_j	junction temperature			-	150	°C
T_{amb}	ambient temperature			-55	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
Per transistor							
$R_{th(j-a)}$	thermal resistance from junction to ambient	in free air	[1]	-	-	500	K/W
Per device							
$R_{th(j-a)}$	thermal resistance from junction to ambient	in free air	[1]	-	-	328	K/W

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

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10. Characteristics

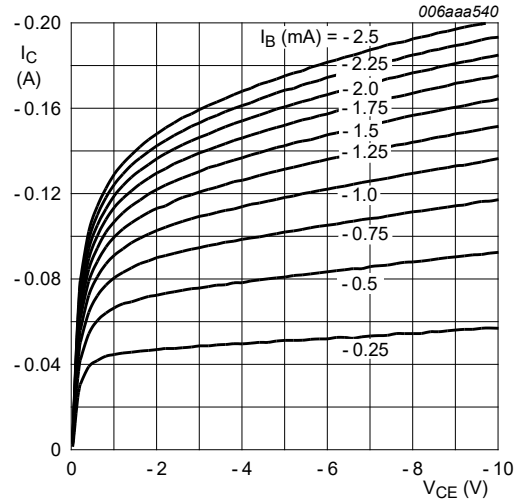
Table 7. Characteristics

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
Per transistor							
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		-	-	-5	µA
I_{EBO}	emitter-base cut-off current	V_{EB} = -5 V; I_C = 0 A; T_{amb} = 25 °C		-	-	-100	nA
h_{FE}	DC current gain	V_{CE} = -5 V; I_C = -10 µA; T_{amb} = 25 °C		-	250	-	
		V_{CE} = -5 V; I_C = -2 mA; T_{amb} = 25 °C		200	290	450	
V_{CEsat}	collector-emitter saturation voltage	I_C = -10 mA; I_B = -0.5 mA; T_{amb} = 25 °C		-	-50	-200	mV
		I_C = -100 mA; I_B = -5 mA; T_{amb} = 25 °C		-	-200	-400	mV
V_{BEsat}	base-emitter saturation voltage	I_C = -10 mA; I_B = -0.5 mA; T_{amb} = 25 °C	[1]	-	-760	-	mV
		I_C = -100 mA; I_B = -5 mA; T_{amb} = 25 °C	[1]	-	-920	-	mV
V_{BE}	base-emitter voltage	V_{CE} = -5 V; I_C = -2 mA; T_{amb} = 25 °C	[2]	-600	-650	-700	mV
		V_{CE} = -5 V; I_C = -10 mA; T_{amb} = 25 °C	[2]	-	-	-760	mV
C_c	collector capacitance	V_{CB} = -10 V; I_E = 0 A; i_e = 0 A; f = 1 MHz; T_{amb} = 25 °C		-	-	2.2	pF
C_e	emitter capacitance	V_{EB} = -0.5 V; 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	175	-	MHz
NF	noise figure	V_{CE} = -5 V; I_C = -0.2 mA; R_S = 2 kΩ; f = 10 Hz to 15.7 kHz		-	1.6	-	dB
		V_{CE} = -5 V; I_C = -0.2 mA; R_S = 2 kΩ; B = 200 Hz; f = 1 kHz		-	3.1	-	dB
Per device							
h_{FE1}/h_{FE2}	DC current gain matching	V_{CE} = -5 V; I_C = -2 mA; T_{amb} = 25 °C	[3]	0.9	1	-	
$V_{BE1}-V_{BE2}$	base-emitter voltage matching		[4]	-	-	2	mV

[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.
[3] The smaller of the two values is taken as the numerator.
[4] The smaller of the two values is subtracted from the larger value.

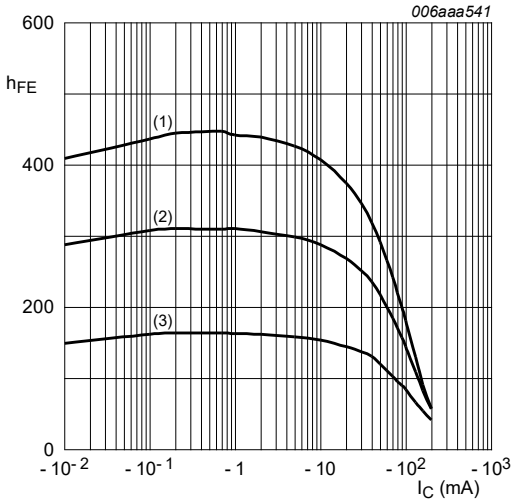
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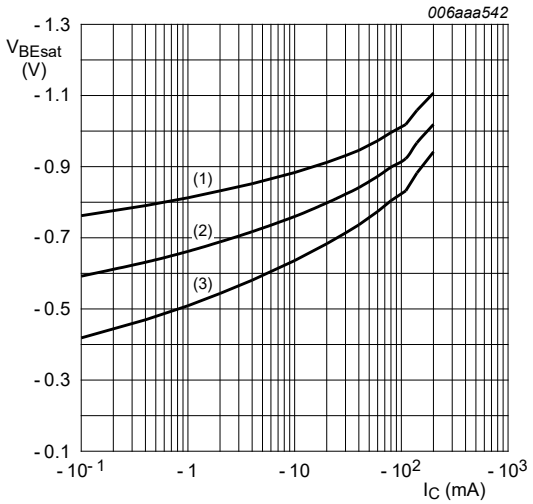
T_{amb} = 25 °C

Fig. 1. Collector current as a function of collector-emitter voltage; typical values



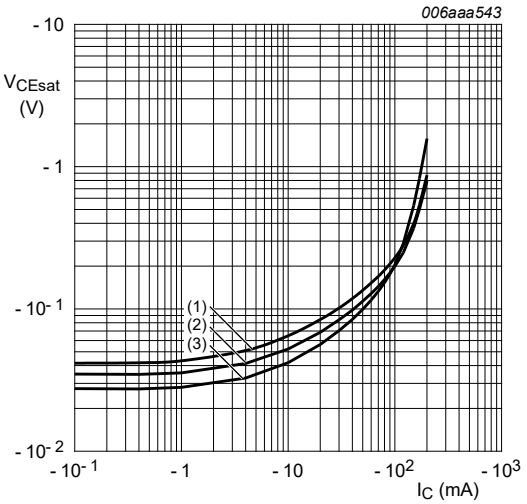
V_{CE} = -5 V
(1) T_{amb} = 100 °C
(2) T_{amb} = 25 °C
(3) T_{amb} = −55 °C

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



I_C/I_B = 20
(1) T_{amb} = −55 °C
(2) T_{amb} = 25 °C
(3) T_{amb} = 100 °C

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

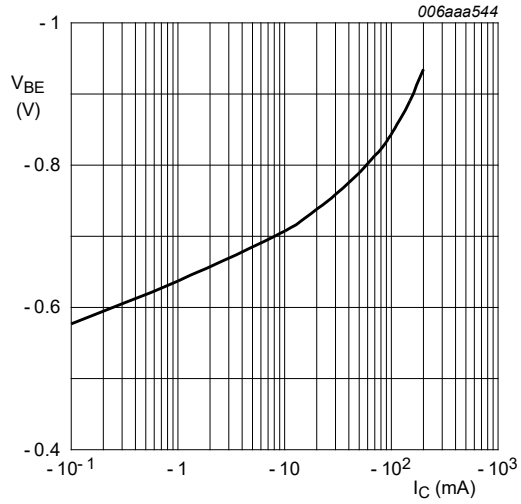


I_C/I_B = 20
(1) T_{amb} = 100 °C
(2) T_{amb} = 25 °C
(3) T_{amb} = −55 °C

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

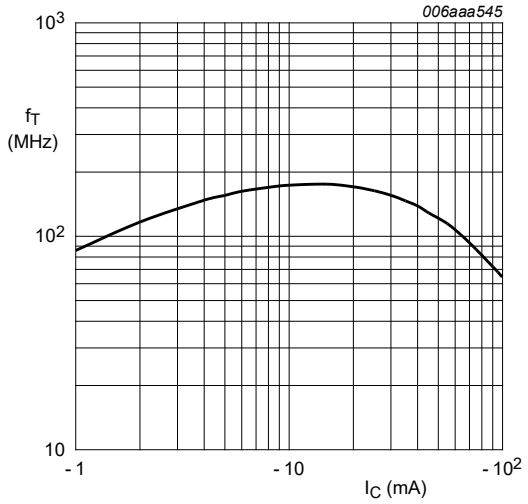
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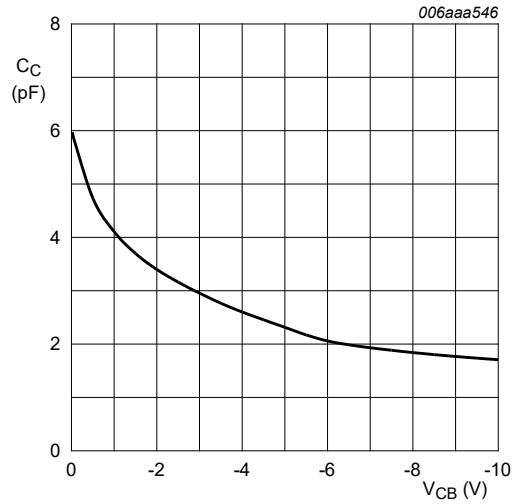
V_{CE} = -5 V; T_{amb} = 25 °C

Fig. 5. Base-emitter voltage as a function of collector current; typical values



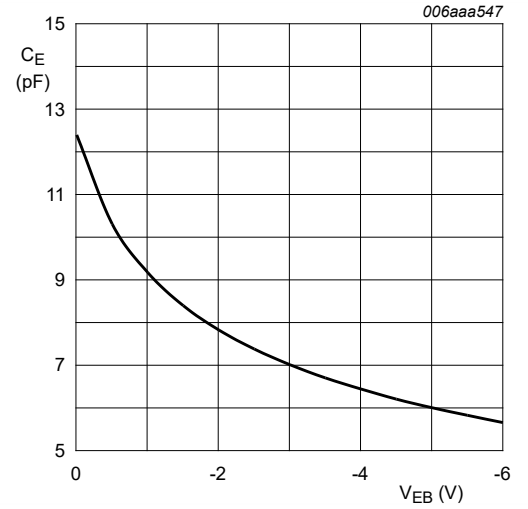
V_{CE} = -5 V; T_{amb} = 25 °C

Fig. 6. Transition frequency as a function of collector current; typical values



f = 1 MHz; T_{amb} = 25 °C

Fig. 7. Collector capacitance as a function of collector-base voltage; typical values



f = 1 MHz; T_{amb} = 25 °C

Fig. 8. Emitter capacitance as a function of emitter-base voltage; typical values

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11. Package outline

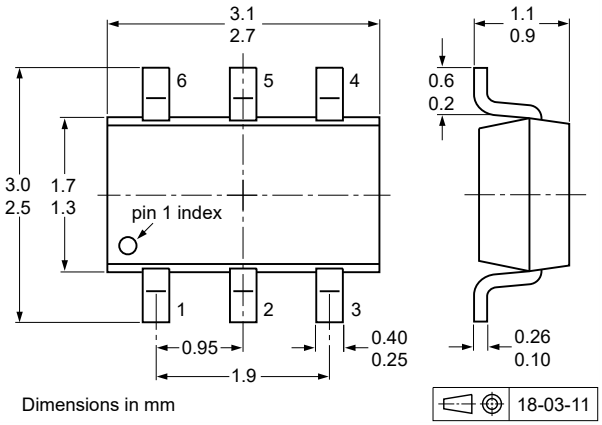


Fig. 9. Package outline TSOP6 (SOT457)

12. Soldering

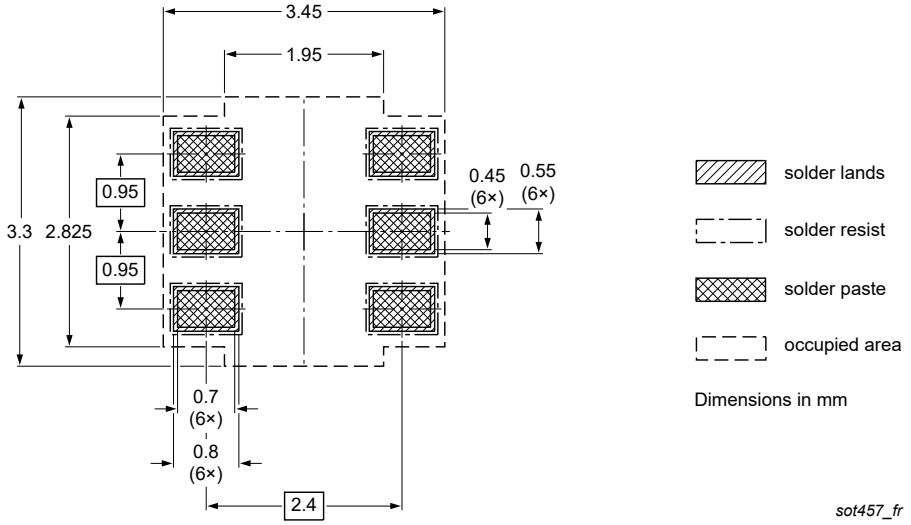


Fig. 10. Reflow soldering footprint for TSOP6 (SOT457)

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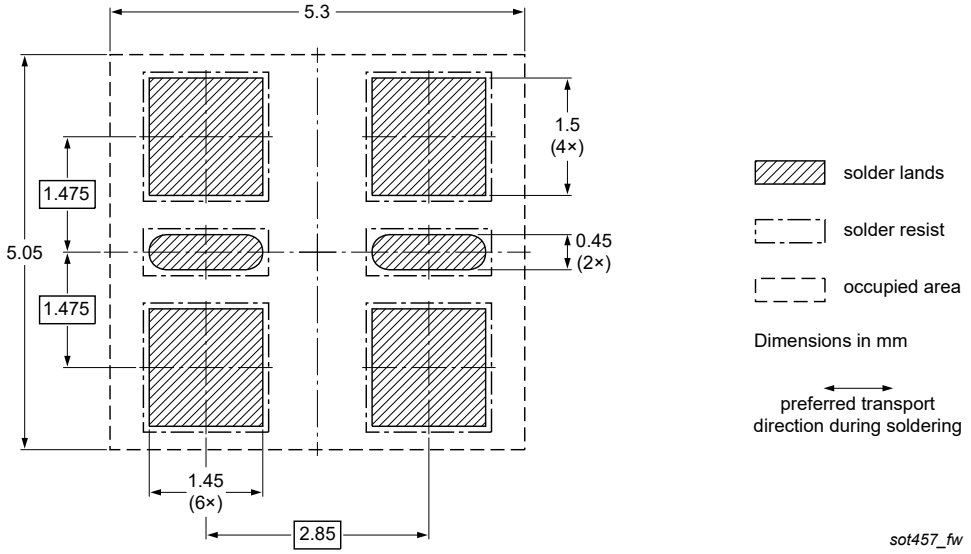


Fig. 11. Wave soldering footprint for TSOP6 (SOT457)

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13. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
BCM856DS v.3	20260812	Product data sheet	-	BCM856DS v.2
Modifications:	• Product(s) changed to non-automotive qualification. Please refer to nexperia.com for automotive (-Q) product alternative(s).			
BCM856DS v.2	20241018	Product data sheet	-	BCM856BS_BCM856DS_1
BCM856BS_BCM856DS_1	20080807	Product data sheet	-	-

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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.
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