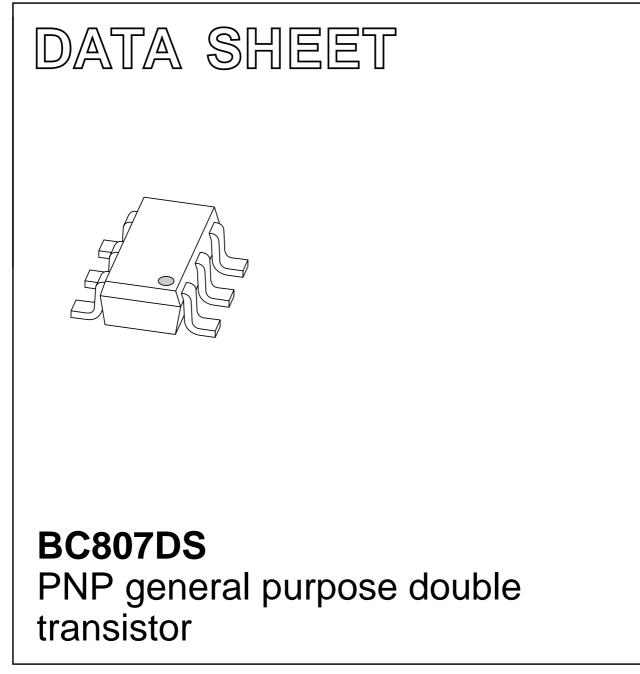
DISCRETE SEMICONDUCTORS



Product specification Supersedes data of 2002 Aug 09 2002 Nov 22



BC807DS

FEATURES

- High current (500 mA)
- 600 mW total power dissipation
- Replaces two SOT23 packaged transistors on same PCB area.

APPLICATIONS

- · General purpose switching and amplification
- Push-pull amplifiers
- Multi-phase stepper motor drivers.

DESCRIPTION

PNP transistor pair in a SOT457 (SC-74) plastic package.

MARKING

TYPE NUMBER	MARKING CODE		
BC807DS	N2		

QUICK REFERENCE DATA

SYMBOL	BOL PARAMETER		UNIT
V _{CEO}	collector-emitter voltage	-45	V
I _C	collector current (DC)		mA
I _{CM} peak collector current		-1	А

PINNING

PIN	DESCRIPTION	
1, 4	emitter	TR1; TR2
2, 5	base	TR1; TR2
6, 3	collector	TR1; TR2

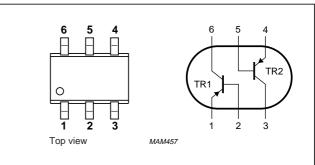


Fig.1 Simplified outline (SOT457) and symbol.

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT	
Per transi	Per transistor unless otherwise specified					
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 (DC)		_	-500	mA	
I _{CM}	peak collector current		-	-1	А	
I _{BM}	peak base current		-	-200	mA	
P _{tot}	total power dissipation	$T_{amb} \le 25 \ ^{\circ}C; note 1$	_	370	mW	
T _{stg}	storage temperature		-65	+150	°C	
Tj	junction temperature		-	150	°C	
T _{amb}	operating ambient temperature		-65	+150	°C	
Per device	9					
P _{tot}	total power dissipation	$T_{amb} \le 25 \ ^{\circ}C$; note 1	_	600	mW	

Note

1. Device mounted on a printed-circuit board; single sided copper; tinplated; mounting pad for collector 1 cm².

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R _{th j-a}	thermal resistance from junction to ambient	note 1	208	K/W

Note

1. Device mounted on a printed-circuit board; single sided copper; tinplated; mounting pad for collector 1 cm².

CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT	
Per transis	Per transistor						
I _{CBO}	collector-base cut-off current	$V_{CB} = -20 \text{ V}; \text{ I}_{E} = 0$	-	-	-100	nA	
		$V_{CB} = -20 \text{ V}; I_E = 0; T_j = 150 \text{ °C}$	-	-	-5	μA	
I _{EBO}	emitter-base cut-off current	$V_{EB} = -5 \text{ V}; \text{ I}_{C} = 0$	-	-	-100	nA	
h _{FE}	DC current gain	$V_{CE} = -1 \text{ V}; I_{C} = -100 \text{ mA}; \text{ note } 1$	160	-	400		
		V _{CE} = -1 V; I _C = -500 mA; note 1	40	-	-		
V _{CEsat}	collector-emitter saturation voltage	$I_{C} = -500 \text{ mA}; I_{B} = -50 \text{ mA}; \text{ note 1}$	-	-	-700	mV	
V _{BE}	base-emitter voltage	$V_{CE} = -1$ V; $I_C = -500$ mA; notes 1 and 2	-	-	-1.2	V	
C _c	collector capacitance	$V_{CB} = -10 \text{ V}; I_E = I_e = 0; f = 1 \text{ MHz}$	-	9	-	pF	
f _T	transition frequency	$V_{CE} = -5 \text{ V}; I_C = -10 \text{ mA};$ f = 100 MHz	80	-	-	MHz	

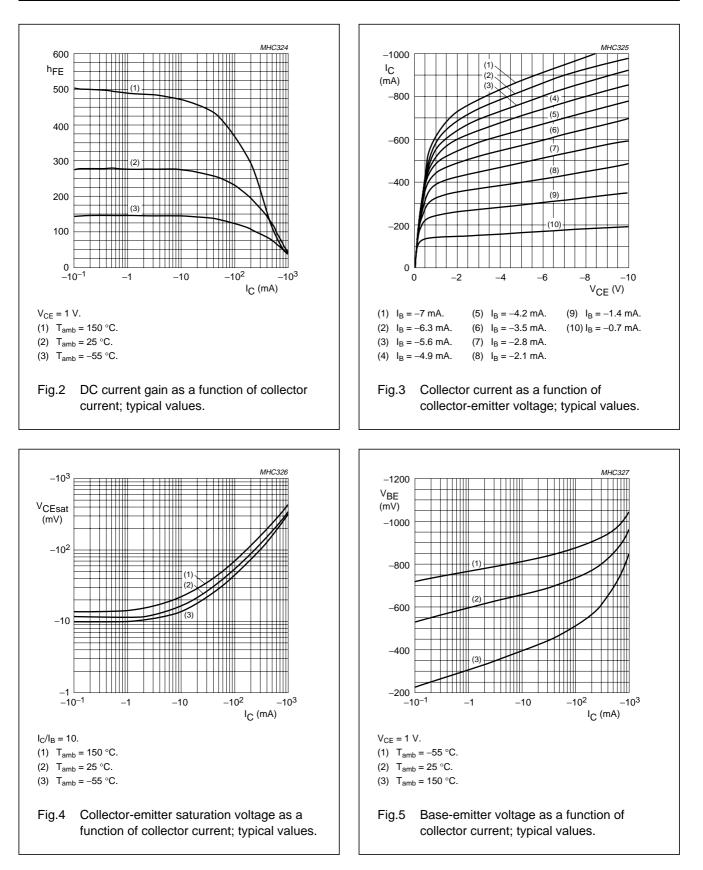
Notes

1. Pulse test: $t_p \leq 300 \ \mu s; \ \delta \leq 0.02.$

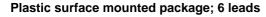
2. V_{BE} decreases by approximately -2 mV/K with increasing temperature.

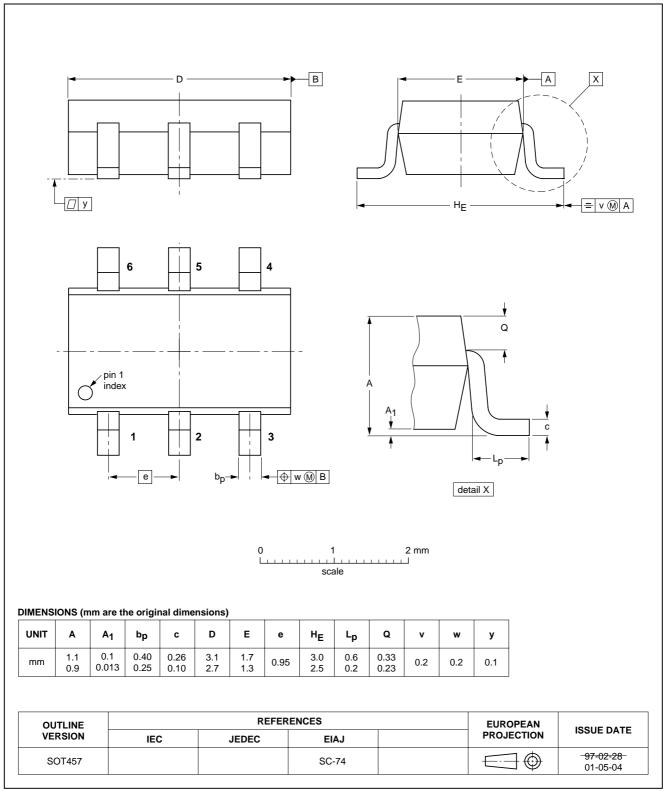
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PACKAGE OUTLINE





SOT457

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DATA SHEET STATUS

LEVEL	DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾⁽³⁾	DEFINITION
1	Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
11	Preliminary data	Qualification	This data sheet contains data from the preliminary specification. Supplementary data will be published at a later date. Philips Semiconductors reserves the right to change the specification without notice, in order to improve the design and supply the best possible product.
	Product data	Production	This data sheet contains data from the product specification. Philips Semiconductors reserves the right to make changes at any time in order to improve the design, manufacturing and supply. Relevant changes will be communicated via a Customer Product/Process Change Notification (CPCN).

Notes

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- 2. The product status of the device(s) described in this data sheet may have changed since this data sheet was published. The latest information is available on the Internet at URL http://www.semiconductors.philips.com.
- 3. For data sheets describing multiple type numbers, the highest-level product status determines the data sheet status.

DEFINITIONS

Short-form specification — The data in a short-form specification is extracted from a full data sheet with the same type number and title. For detailed information see the relevant data sheet or data handbook.

Limiting values definition — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.

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