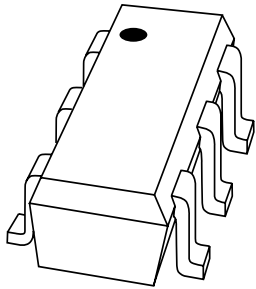


DATA SHEET



BC846S

**NPN general purpose double
transistor**

Product data sheet
Supersedes data of 1999 May 28

1999 Sep 01

NPN general purpose double transistor

BC846S

FEATURES

- Two transistors in one package
- Reduces number of components and board space
- No mutual interference between the transistors.

APPLICATIONS

- General purpose switching and small signal amplification.

DESCRIPTION

NPN double transistor in an SC-88 (SOT363) plastic six lead package.

PINNING

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

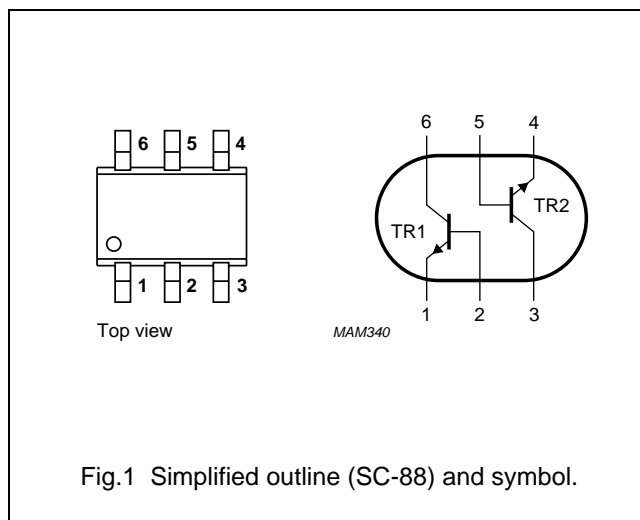


Fig.1 Simplified outline (SC-88) and symbol.

MARKING

TYPE NUMBER	MARKING CODE
BC846S	4Ft

LIMITING VALUES

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

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	–	6	V
I_C	collector current (DC)		–	100	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ °C}$	–	200	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	150	°C
T_{amb}	operating ambient temperature		–65	+150	°C
Per device					
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ °C}$; note 1	–	300	mW

Note

1. Refer to SC-88 (SOT363) standard mounting conditions.

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THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	416	K/W

Note

1. Refer to SC-88 (SOT363) standard mounting conditions.

CHARACTERISTICS

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

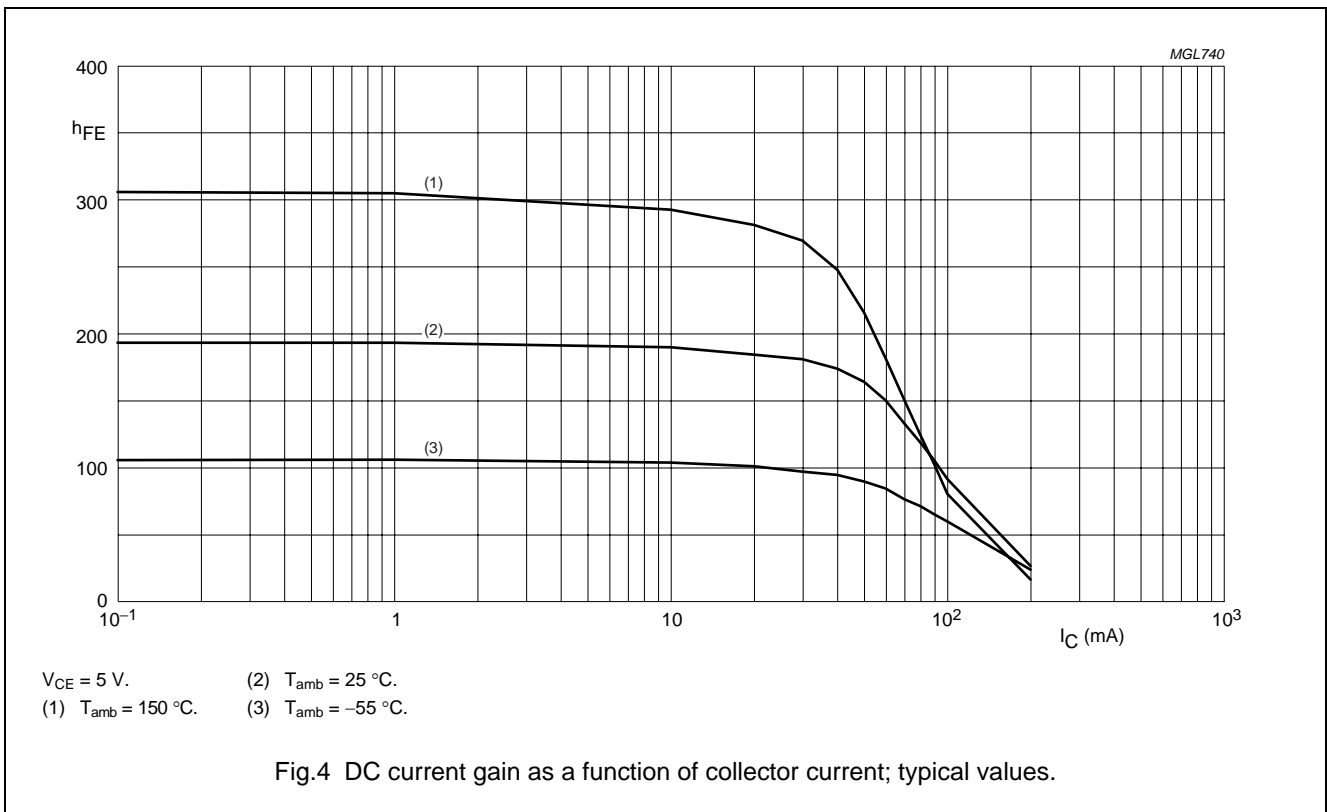
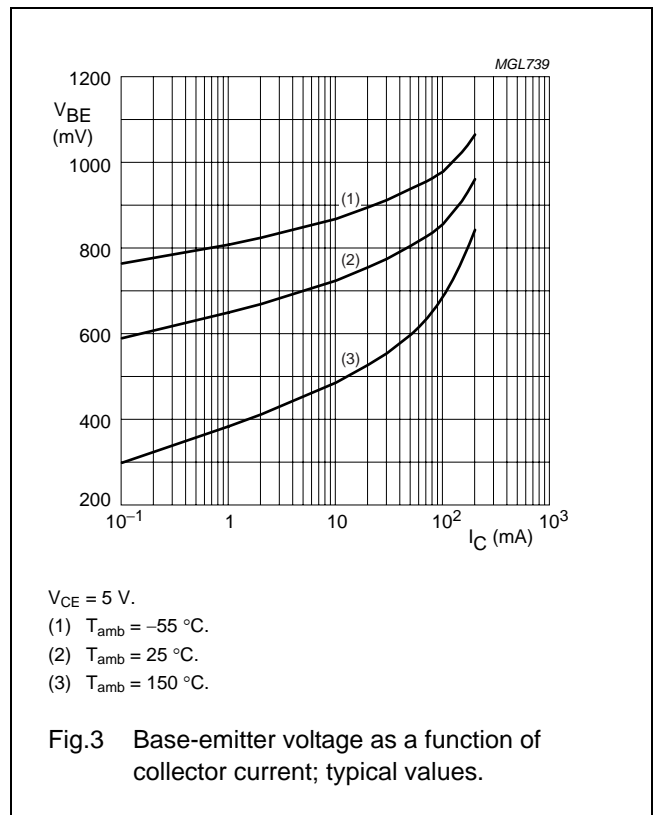
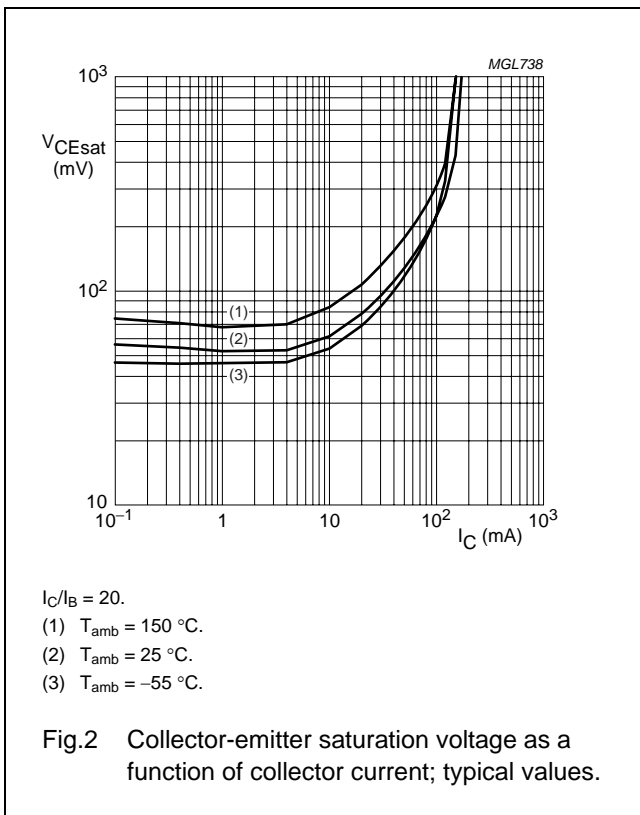
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Per transistor						
I_{CBO}	collector cut-off current	$I_E = 0; V_{CB} = 30\text{ V}$	–	–	15	nA
		$I_E = 0; V_{CB} = 30\text{ V}; T_j = 150\text{ °C}$	–	–	5	μA
I_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = 5\text{ V}$	–	–	100	nA
h_{FE}	DC current gain	$I_C = 2\text{ mA}; V_{CE} = 5\text{ V}$	110	–	–	
V_{CEsat}	collector-emitter saturation voltage	$I_C = 10\text{ mA}; I_B = 0.5\text{ mA}$	–	–	100	mV
		$I_C = 100\text{ mA}; I_B = 5\text{ mA}; \text{note 1}$	–	–	300	mV
V_{BEsat}	base-emitter saturation voltage	$I_C = 10\text{ mA}; I_B = 0.5\text{ mA}$	–	770	–	mV
C_c	collector capacitance	$I_E = i_e = 0; V_{CB} = 10\text{ V}; f = 1\text{ MHz}$	–	–	1.5	pF
f_T	transition frequency	$I_C = 10\text{ mA}; V_{CE} = 5\text{ V}; f = 100\text{ MHz}$	100	–	–	MHz

Note

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

NPN general purpose double transistor

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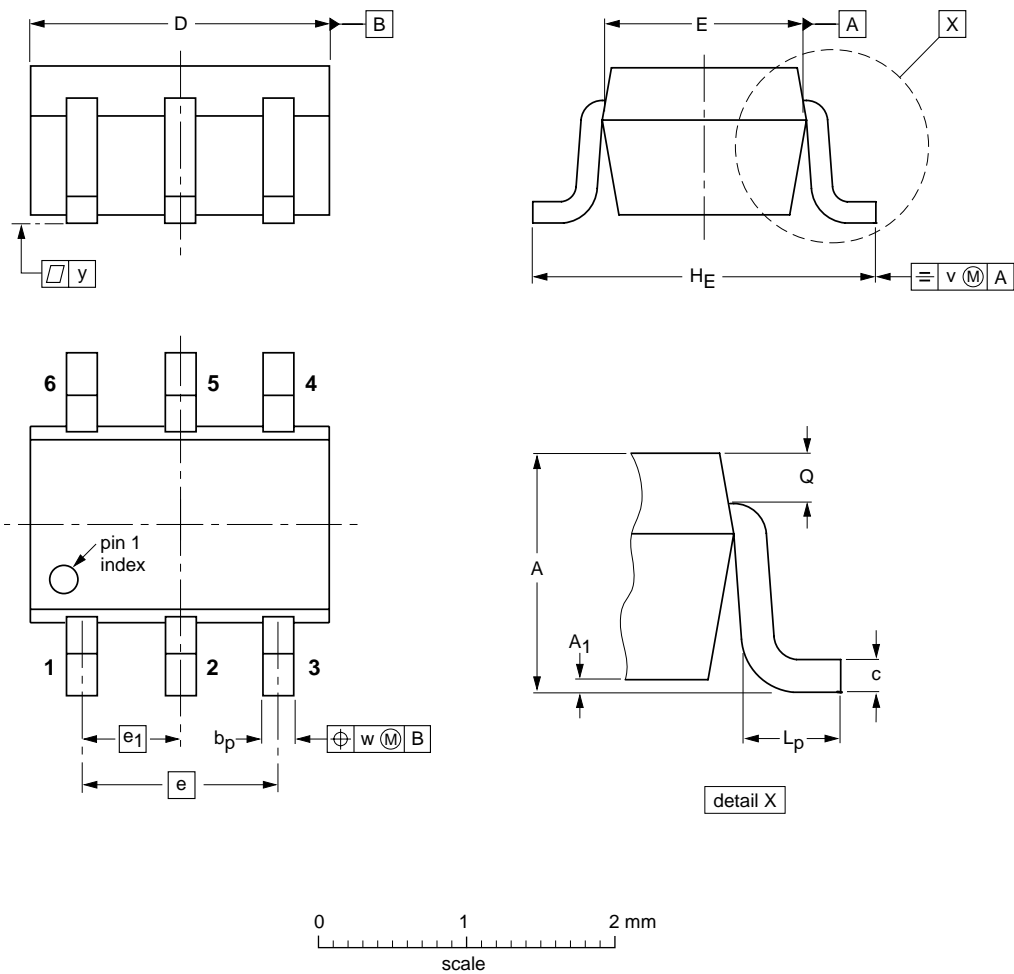
NPN general purpose double transistor

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PACKAGE OUTLINE

Plastic surface mounted package; 6 leads

SOT363



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w	y
mm	1.1 0.8	0.1	0.30 0.20	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.25 0.15	0.2	0.2	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT363			SC-88			97-02-28

NPN general purpose double transistor

BC846S

DATA SHEET STATUS

DOCUMENT STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

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SOT363

Tape reel SMD; reversed product orientation 12NC ending 125

Rev. 1 — 20 November 2012

Packing information

1. Packing method

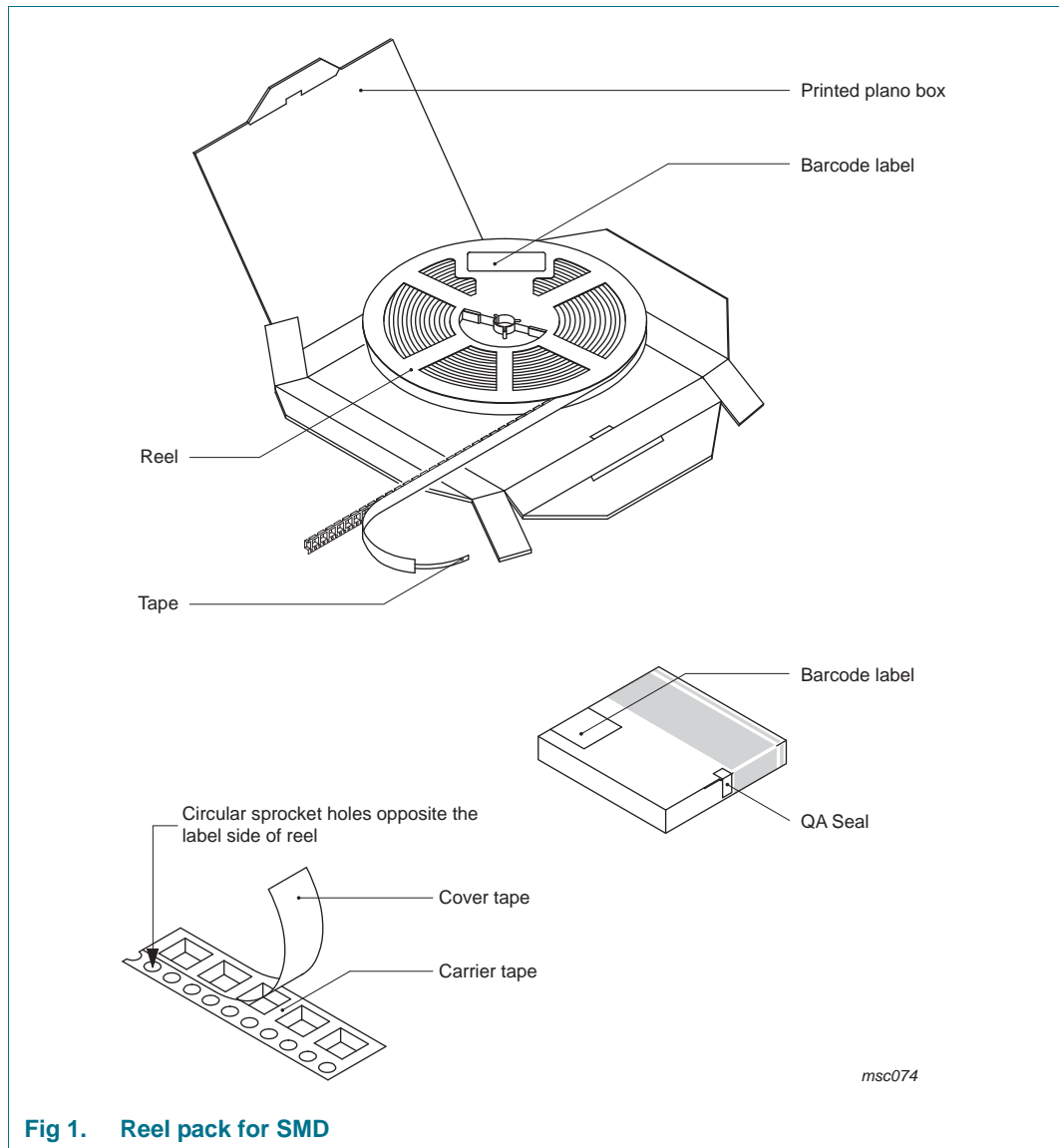


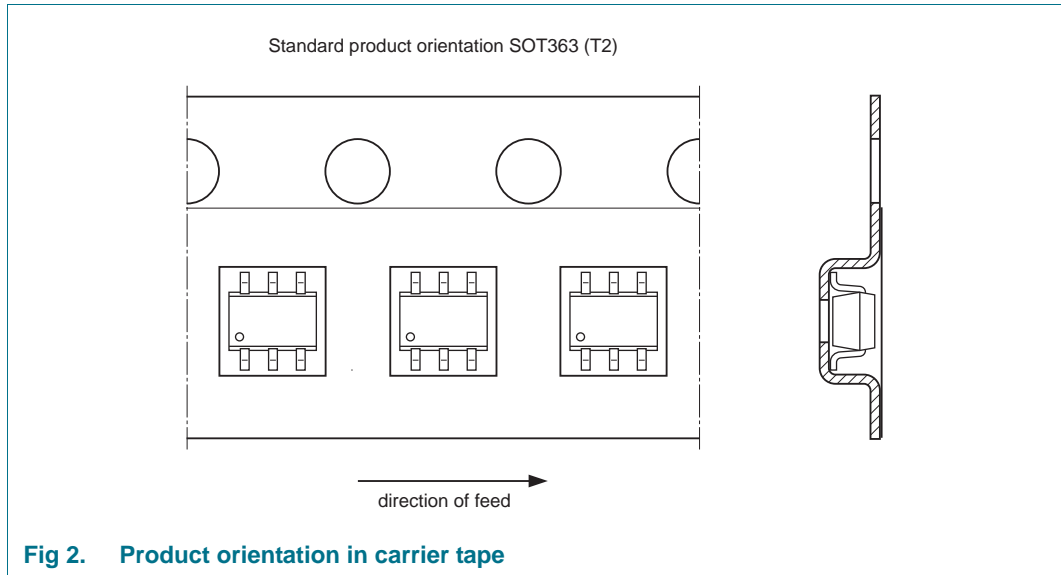
Table 1. Packing information

Package version	12NC ending	Reel dimensions d x w (mm) ^[1]	SPQ/PQ (pcs)	Reels per box	Outer box dimensions l x w x h (mm)
SOT363	125	180 x 8	3000	1	186 x 186 x 16

[1] d = reel diameter; w = tape width.



2. Product orientation



3. Carrier tape dimensions

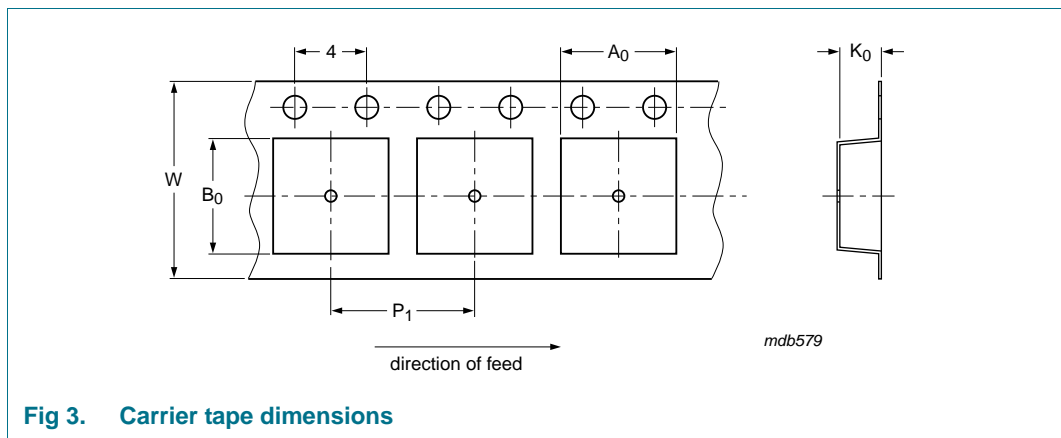


Table 2. Carrier tape dimensions

In accordance with IEC 60286-3.

A ₀ (mm)	B ₀ (mm)	K ₀ (mm)	T (mm)	P ₁ (mm)	W (mm)
2.25	2.25	1.2	-	4.0	8

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