

BC859BW,135 Datasheet



DiGi Electronics Part Number	BC859BW,135-DG
Manufacturer	Nexperia USA Inc.
Aanufacturer Product Number	BC859BW,135
Description	TRANS PNP 30V 0.
Detailed Description	Bipolar (BJT) Trans 00 mW Surface Mo

Ma

ANS PNP 30V 0.1A SOT323 polar (BJT) Transistor PNP 30 V 100 mA 100MHz 2 mW Surface Mount SOT-323

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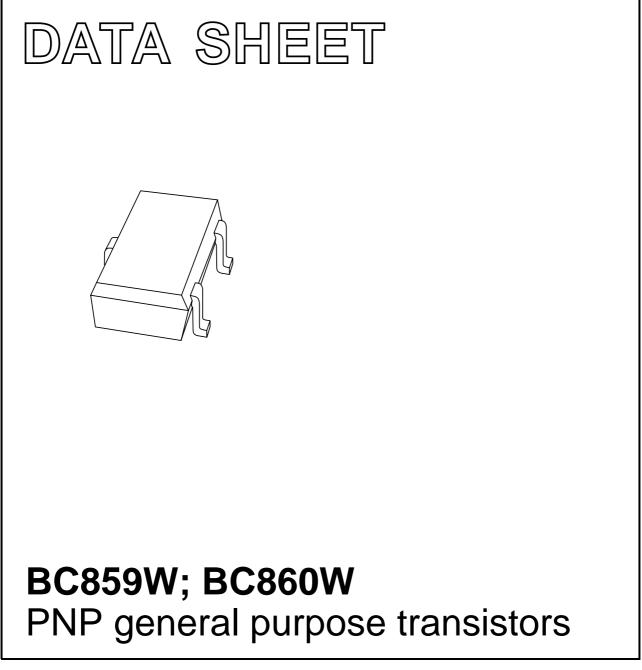
Purchase and inquiry

Manufacturer:
Nexperia USA Inc.
Product Status:
Active
Current - Collector (Ic) (Max):
100 mA
Vce Saturation (Max) @ lb, lc:
650mV @ 5mA, 100mA
DC Current Gain (hFE) (Min) @ lc, Vce:
220 @ 2mA, 5V
Frequency - Transition:
100MHz
Grade:
Automotive
Mounting Type:
Surface Mount
Supplier Device Package:
SOT-323

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8541.21.0075	

DISCRETE SEMICONDUCTORS



Product data sheet Supersedes data of 1997 Sep 03 1999 Apr 12



NXP Semiconductors

PNP general purpose transistors

FEATURES

- Low current (max. 100 mA)
- Low voltage (max. 45 V).

APPLICATIONS

• Low noise stages in tape recorders, hi-fi amplifiers and other audio-frequency equipment.

DESCRIPTION

PNP transistor in a SOT323 plastic package. NPN complements: BC849W and BC850W.

MARKING

TYPE NUMBER	MARKING CODE	TYPE NUMBER	MARKING CODE
BC859W	4D*	BC860W	4H*
BC859BW	4B*	BC860BW	4F*
BC859CW	4C*	BC860CW	4G*

Note

- 1. * = : Made in Hong Kong.
 - * = t : Made in Malaysia.

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{CBO}	collector-base voltage	open emitter			
	BC859W		-	-30	V
	BC860W		-	-50	V
V _{CEO}	collector-emitter voltage	open base			
	BC859W		-	-30	V
	BC860W		-	-45	V
V _{EBO}	emitter-base voltage	open collector	-	-5	V
I _C	collector current (DC)		-	-100	mA
I _{CM}	peak collector current		-	-200	mA
I _{BM}	peak base current		-	-200	mA
P _{tot}	total power dissipation	$T_{amb} \le 25 \ ^{\circ}C;$ note 1	-	200	mW
T _{stg}	storage temperature		-65	+150	°C
Tj	junction temperature		-	150	°C
T _{amb}	operating ambient temperature		-65	+150	°C

Note

1. Transistor mounted on an FR4 printed-circuit board.

BC859W; BC860W

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector

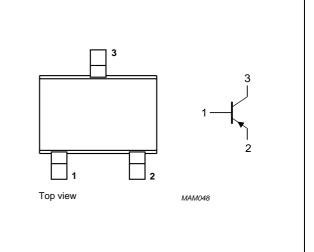


Fig.1 Simplified outline (SOT323) and symbol.

BC859W; BC860W

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R _{th j-a}	thermal resistance from junction to ambient	note 1	625	K/W

Note

1. Transistor mounted on an FR4 printed-circuit board.

CHARACTERISTICS

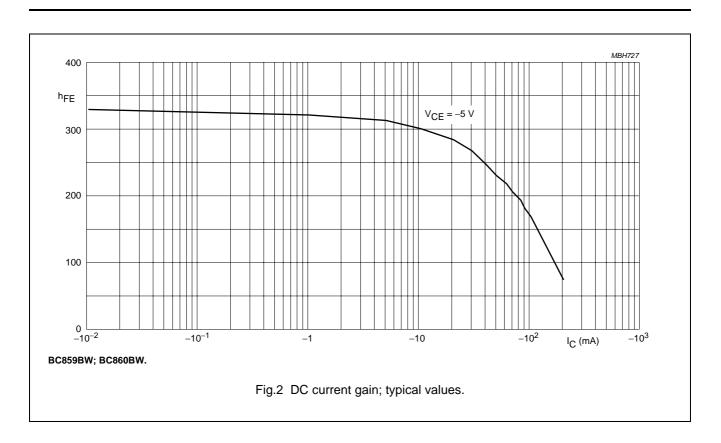
 T_{amb} = 25 °C unless otherwise specified.

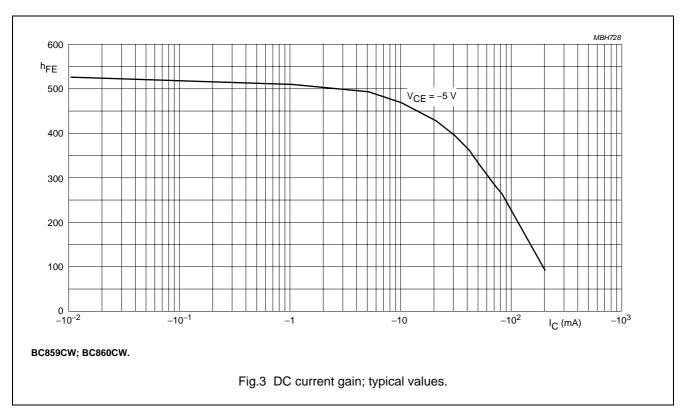
SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I _{CBO}	collector cut-off current	$I_E = 0; V_{CB} = -30 V$	-	-	-15	nA
		I _E = 0; V _{CB} = -30 V; T _j = 150 °C	_	_	-4	μA
I _{EBO}	emitter cut-off current	$I_{C} = 0; V_{EB} = -5 V$	_	_	-100	nA
h _{FE}	DC current gain BC859W; BC860W BC859BW; BC860BW	$I_{C} = -2 \text{ mA}; V_{CE} = -5 \text{ V};$ see Figs 2 and 3	220 220	_	800 475	
	BC859CW; BC860CW		420	_	800	
V _{CEsat}	collector-emitter saturation	$I_{\rm C} = -10 \text{ mA}; I_{\rm B} = -0.5 \text{ mA}$	-	-	-300	mV
	voltage	$I_{C} = -100 \text{ mA}; I_{B} = -5 \text{ mA}; \text{ note } 1$	-	_	-650	mV
V _{BE}	base-emitter voltage	$I_{C} = -2 \text{ mA}; V_{CE} = -5 \text{ V}$	600	-	750	mV
		$I_{C} = -10 \text{ mA}; V_{CE} = -5 \text{ V}$	-	-	820	mV
Cc	collector capacitance	$I_E = i_e = 0; V_{CB} = -10 V; f = 1 MHz$	-	-	5	pF
C _e	emitter capacitance	$I_{C} = i_{c} = 0; V_{EB} = -500 \text{ mV}; f = 1 \text{ MHz}$	-	10	-	pF
f _T	transition frequency	$I_{C} = -10 \text{ mA}; V_{CE} = -5 \text{ V}; f = 100 \text{ MHz}$	100	_	_	MHz
F	noise figure; BC859W; BC860W;	$\label{eq:linear} \begin{array}{l} I_C = -200 \ \mu\text{A}; \ V_{CE} = -5 \ V; \ R_S = 2 \ k\Omega; \\ f = 10 \ Hz \ to \ 15.7 \ kHz \end{array}$	_	-	4	dB
	BC859BW; BC860BW; BC859CW; BC860CW	$\label{eq:linear} \begin{array}{l} I_{C} = -200 \ \mu \text{A}; \ V_{CE} = -5 \ \text{V}; \ \text{R}_{S} = 2 \ \text{k}\Omega; \\ f = 1 \ \text{kHz}; \ \text{B} = 200 \ \text{Hz} \end{array}$	_	-	4	dB

Note

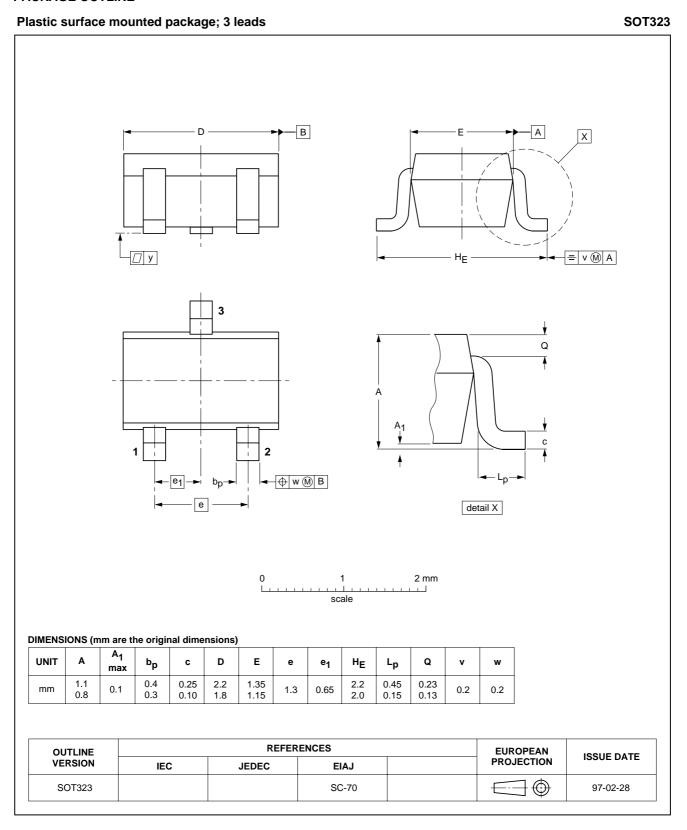
1. Pulse test: $t_p \leq 300~\mu s;~\delta \leq 0.02.$

BC859W; BC860W





PACKAGE OUTLINE



BC859W; BC860W

BC859W; BC860W

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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Printed in The Netherlands

115002/00/04/pp7

Date of release: 1999 Apr 12

Document order number: 9397 750 05583





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