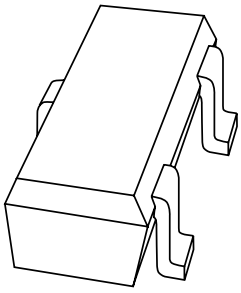
DATA SHEET



2PB709AW
PNP general purpose transistor

Product specification

2002 Jun 26

Philips
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PNP general purpose transistor 2PB709AW

FEATURES

- High collector current (max. 100 mA)
- Low collector-emitter saturation voltage (max. 500 mV).

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

PNP transistor in an SC-70 (SOT323) plastic package.
NPN complement: 2PD601AW

MARKING

TYPE NUMBER	MARKING CODE(1)
2PB709AQW	N5*
2PB709ARW	N7*
2PB709ASW	N9*

Note

1. * = p: made in Hong Kong.
   * = t: made in Malaysia.

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector

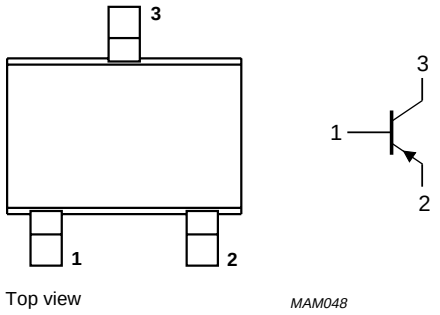


Fig.1 Simplified outline SC-70 (SOT323) and symbol.

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter	–	–45	V
V_{CEO}	collector-emitter voltage	open base	–	–45	V
V_{EBO}	emitter-base voltage	open collector	–	–6	V
I_C	collector current (DC)		–	–100	mA
I_{CM}	peak collector current		–	–200	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °C; note 1	–	200	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	150	°C
T_{amb}	operating ambient temperature		–65	+150	°C

Note

1. For mounting conditions, see *"Thermal considerations and footprint design for SOT323 in the General Part of Data Handbook SC18".*

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j\text{-}a}$	thermal resistance from junction to ambient	note 1	625	K/W

Note

1. For mounting conditions, see *"Thermal considerations and footprint design for SOT323 in the General Part of Data Handbook SC18".*

CHARACTERISTICS

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

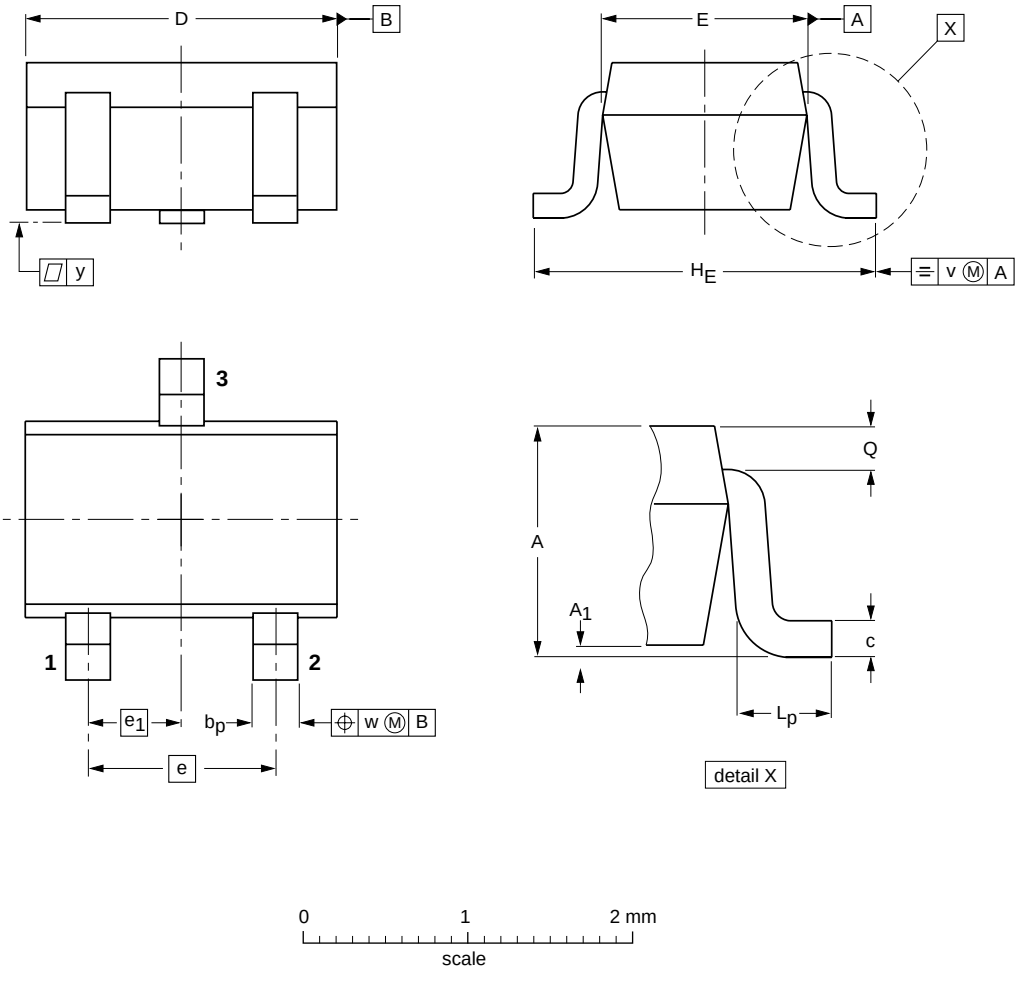
SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector-base cut-off current	I_E = 0; V_{CB} = –45 V	–	–10	nA
		I_E = 0; V_{CB} = –45 V; T_j = 150 °C	–	–5	μA
I_{EBO}	emitter-base cut-off current	I_C = 0; V_{EB} = –5 V	–	–10	nA
h_{FE}	DC current gain	I_C = –2 mA; V_{CE} = –10 V			
	2PB709AQW		160	260	
	2PB709ARW		210	340	
	2PB709ASW		290	460	
V_{CEsat}	collector-emitter saturation voltage	I_C = –100 mA; I_B = –10 mA; note 1	–	–500	mV
C_c	collector capacitance	$I_E = i_e$ = 0; V_{CB} = –10 V; f = 1 MHz	–	5	pF
f_T	transition frequency	I_C = –1 mA; V_{CE} = –10 V; f = 100 MHz			
	2PB709AQW		60	–	MHz
	2PB709ARW		70	–	MHz
	2PB709ASW		80	–	MHz

Note

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

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads **SOT323**



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
mm	1.1 0.8	0.1	0.4 0.3	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.23 0.13	0.2	0.2

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT323			SC-70			97-02-28

DATA SHEET STATUS

DATA SHEET STATUS[1]	PRODUCT STATUS[2]	DEFINITIONS
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Contact information

For additional information please visit **http://www.semiconductors.philips.com**. Fax: **+31 40 27 24825**
For sales offices addresses send e-mail to: **sales.addresses@www.semiconductors.philips.com**.

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