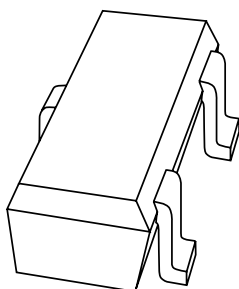


DATA SHEET



2PB709A

PNP general purpose transistor

Product specification
Supersedes data of November 1994
File under Discrete Semiconductors, SC04

1997 Jun 19

PNP general purpose transistor

2PB709A

FEATURES

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

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

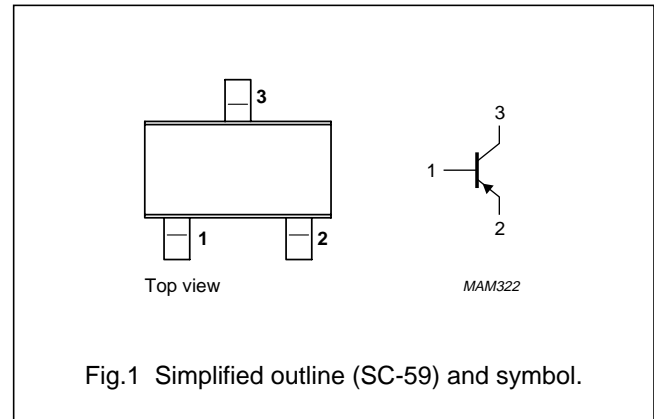
PNP transistor in an SC-59 plastic package.
NPN complement: 2PB601A.

MARKING

TYPE NUMBER	MARKING CODE
2PB709AQ	BQ
2PB709AR	BR
2PB709AS	BS

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector



QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CBO}	collector-base voltage	open emitter	–	–45	V
V_{CEO}	collector-emitter voltage	open base	–	–45	V
I_{CM}	peak collector current		–	–200	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ }^{\circ}\text{C}$	–	250	mW
h_{FE}	DC current gain	$I_C = -2\text{ mA}; V_{CE} = -10\text{ V}$	160	460	
f_T	transition frequency	$I_C = -1\text{ mA}; V_{CE} = -10\text{ V}; f = 100\text{ MHz}$			
	2PB709AQ		60	–	MHz
	2PB709AR		70	–	MHz
	2PB709AS		80	–	MHz

PNP general purpose transistor

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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	–	–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
I_{BM}	peak base current		–	–100	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ °C}$; note 1	–	250	mW
T_{stg}	storage temperature		–65	+150	°C
T_j	junction temperature		–	150	°C
T_{amb}	operating ambient temperature		–65	+150	°C

Note

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

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	500	K/W

Note

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

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector cut-off current	$I_E = 0$; $V_{CB} = -45\text{ V}$	–	–10	nA
		$I_E = 0$; $V_{CB} = -45\text{ V}$; $T_j = 150\text{ °C}$	–	–5	μA
I_{EBO}	emitter cut-off current	$I_C = 0$; $V_{EB} = -5\text{ V}$	–	–10	nA
h_{FE}	DC current gain 2PB709AQ 2PB709AR 2PB709AS	$I_C = -2\text{ mA}$; $V_{CE} = -10\text{ V}$	160	260	
			210	340	
			290	460	
V_{CEsat}	collector-emitter saturation voltage	$I_C = -100\text{ mA}$; $I_B = -10\text{ mA}$; note 1	–	–500	mV
C_c	collector capacitance	$I_E = i_e = 0$; $V_{CB} = -10\text{ V}$; $f = 1\text{ MHz}$	–	5	pF
f_T	transition frequency 2PB709AQ 2PB709AR 2PB709AS	$I_C = -1\text{ mA}$; $V_{CE} = -10\text{ V}$; $f = 100\text{ MHz}$	60	–	MHz
			70	–	MHz
			80	–	MHz

Note

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

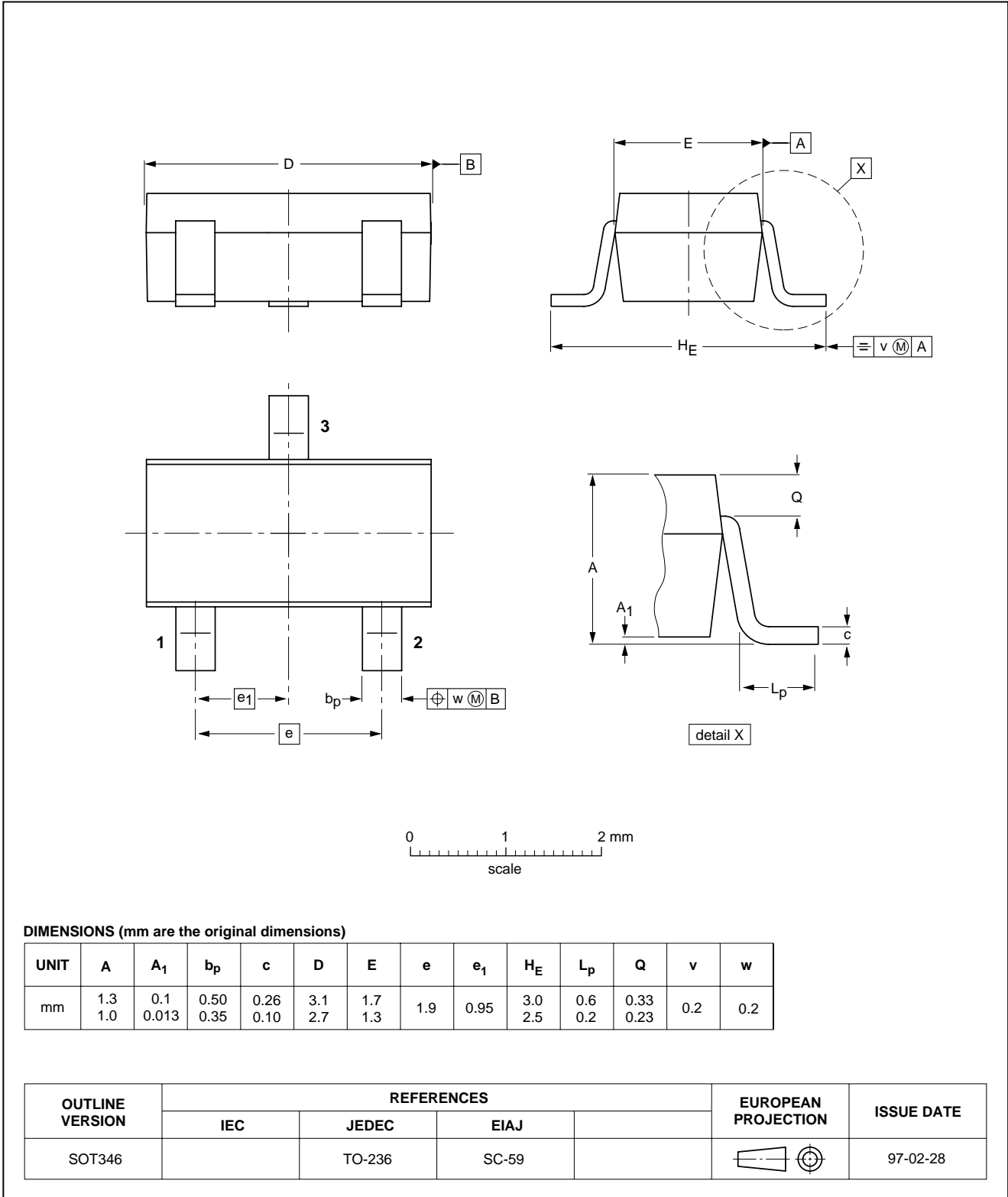
PNP general purpose transistor

2PB709A

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT346



PNP general purpose transistor

2PB709A

DEFINITIONS

Data sheet status	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
Limiting values	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). 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.	
Application information	
Where application information is given, it is advisory and does not form part of the specification.	

LIFE SUPPORT APPLICATIONS

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PNP general purpose transistor

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NOTES

PNP general purpose transistor

2PB709A

NOTES

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Printed in The Netherlands

117047/00/03/pp8

Date of release: 1997 Jun 19

Document order number: 9397 750 02254

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