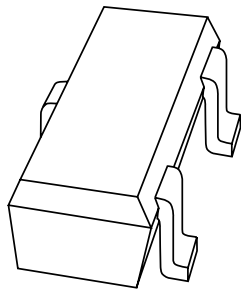


# DATA SHEET



## **2PB710A** PNP general purpose transistor

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

1997 Jul 15

## PNP general purpose transistor

2PB710A

## FEATURES

- High current (max. 500 mA)
- Low voltage (max. 50 V).

## APPLICATIONS

- General purpose switching and amplification.

## DESCRIPTION

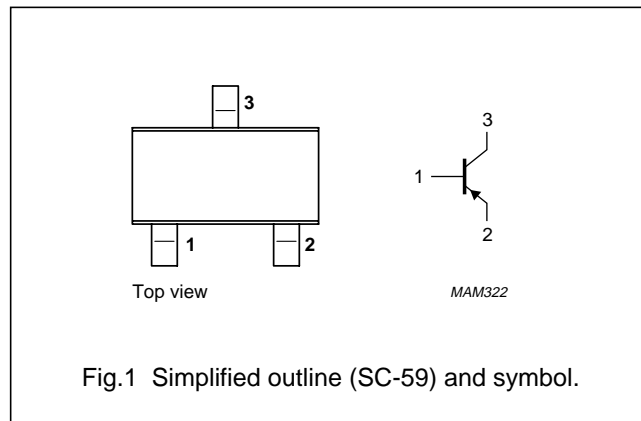
PNP transistor in an SC-59 plastic package.  
NPN complement: 2PD602A.

## MARKING

TYPE NUMBER	MARKING CODE
2PD710AQ	DQ
2PD710AR	DR
2PD710AS	DS

## 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	–	–60	V
$V_{CEO}$	collector-emitter voltage	open base	–	–50	V
$I_{CM}$	peak collector current		–	–1	A
$P_{tot}$	total power dissipation	$T_{amb} \leq 25\text{ }^{\circ}\text{C}$	–	250	mW
$h_{FE}$	DC current gain	$I_C = -150\text{ mA}; V_{CE} = -10\text{ V}$	85	340	
$f_T$	transition frequency	$I_C = -50\text{ mA}; V_{CE} = -10\text{ V}; f = 100\text{ MHz}$			
	2PB710AQ		100	–	MHz
	2PB710AR		120	–	MHz
	2PB710AS		140	–	MHz

## PNP general purpose transistor

2PB710A

**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	–	–60	V
$V_{CEO}$	collector-emitter voltage	open base	–	–50	V
$V_{EBO}$	emitter-base voltage	open collector	–	–5	V
$I_C$	collector current (DC)		–	–500	mA
$I_{CM}$	peak collector current		–	–1	A
$I_{BM}$	peak base current		–	–200	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.

## PNP general purpose transistor

## 2PB710A

**CHARACTERISTICS**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$I_{CBO}$	collector cut-off current	$I_E = 0; V_{CB} = -60\text{ V}$	–	–10	nA
		$I_E = 0; V_{CB} = -60\text{ V}; T_j = 150\text{ °C}$	–	–5	$\mu\text{A}$
$I_{EBO}$	emitter cut-off current	$I_C = 0; V_{EB} = -5\text{ V}$	–	–10	nA
$h_{FE}$	DC current gain 2PB710AQ 2PB710AR 2PB710AS	$I_C = -150\text{ mA}; V_{CE} = -10\text{ V};$ note 1	85	170	
			120	240	
			170	340	
$h_{FE}$	DC current gain	$I_C = -500\text{ mA}; V_{CE} = -10\text{ V};$ note 1	40	–	
$V_{CEsat}$	collector-emitter saturation voltage	$I_C = -300\text{ mA}; I_B = -30\text{ mA};$ note 1	–	–600	mV
$V_{BEsat}$	base-emitter saturation voltage	$I_C = -300\text{ mA}; I_B = -30\text{ mA};$ note 1	–	–1.5	V
$C_C$	collector capacitance	$I_E = i_e = 0; V_{CB} = -10\text{ V}; f = 1\text{ MHz}$	–	15	pF
$f_T$	transition frequency 2PB710AQ 2PB710AR 2PB710AS	$I_C = -50\text{ mA}; V_{CE} = -10\text{ V};$ $f = 100\text{ MHz};$ note 1	100	–	MHz
			120	–	MHz
			140	–	MHz

**Note**

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

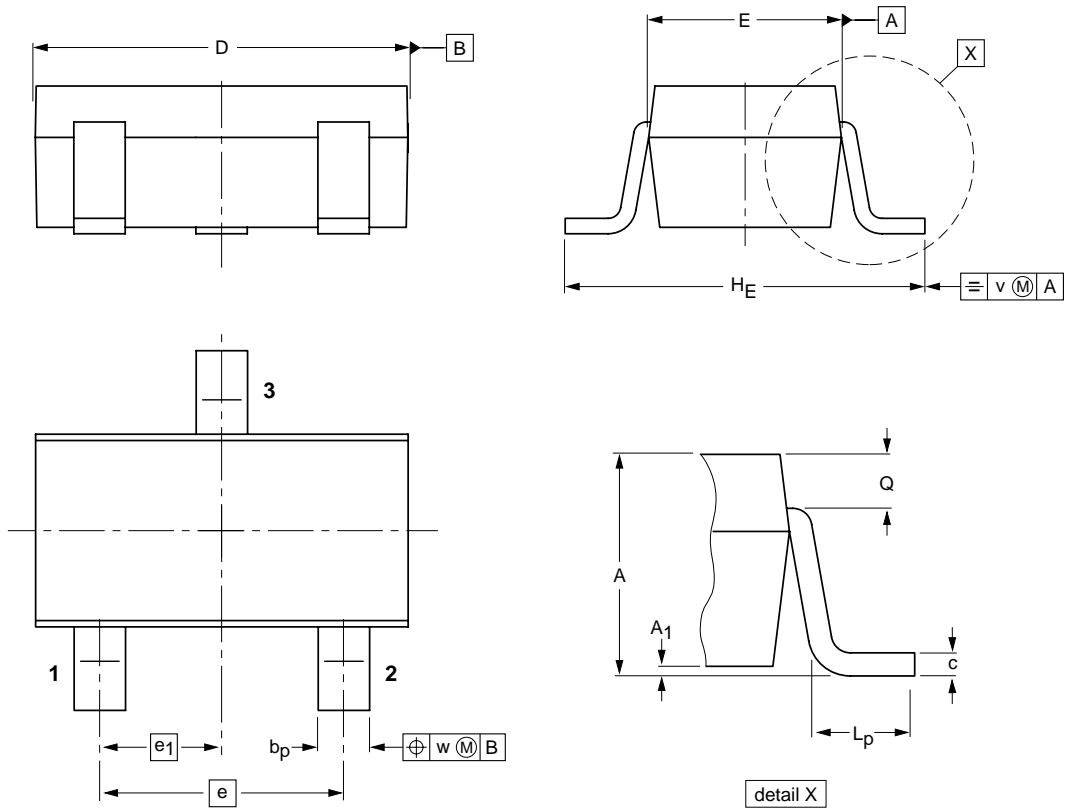
PNP general purpose transistor

2PB710A

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT346



DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub>	b <sub>p</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	Q	v	w
mm	1.3 1.0	0.1 0.013	0.50 0.35	0.26 0.10	3.1 2.7	1.7 1.3	1.9	0.95	3.0 2.5	0.6 0.2	0.33 0.23	0.2	0.2

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT346		TO-236	SC-59			97-02-28

## PNP general purpose transistor

2PB710A

**DEFINITIONS**

<b>Data sheet status</b>	
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.
<b>Limiting values</b>	
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.	
<b>Application information</b>	
Where application information is given, it is advisory and does not form part of the specification.	

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PNP general purpose transistor

2PB710A

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