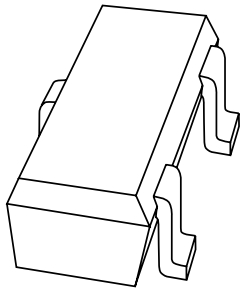


# DATA SHEET



**2PD602A**

**NPN general purpose transistor**

Product specification  
Supersedes data of 1997 Jun 20

1999 Apr 23

# NPN general purpose transistor

# 2PD602A

### FEATURES

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

### APPLICATIONS

- General purpose switching and amplification.

### DESCRIPTION

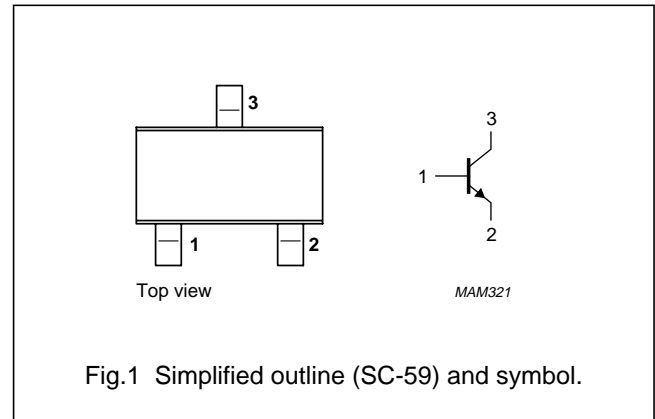
NPN transistor in an SC-59 plastic package.  
PNP complement: 2PB710A.

### MARKING

TYPE NUMBER	MARKING CODE
2PD602AQ	XQ
2PD602AR	XR
2PD602AS	XS

### PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector



### 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	$T_{amb} \leq 25\text{ }^\circ\text{C}$ ; note 1	–	250	mW
$T_{stg}$	storage temperature		–65	+150	$^\circ\text{C}$
$T_j$	junction temperature		–	150	$^\circ\text{C}$
$T_{amb}$	operating ambient temperature		–65	+150	$^\circ\text{C}$

### Note

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

## NPN general purpose transistor

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## 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	$I_E = 0; V_{CB} = 60\text{ V}$	–	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	$I_C = 0; V_{EB} = 4\text{ V}$	–	10	nA
$h_{FE}$	DC current gain 2PD602AQ 2PD602AR 2PD602AS	$I_C = 150\text{ mA}; V_{CE} = 10\text{ V};$ note 1	85	170	
			120	240	
			170	340	
	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
$C_c$	collector capacitance	$I_E = i_e = 0; V_{CB} = 10\text{ V}; f = 1\text{ MHz}$	–	15	pF
$f_T$	transition frequency 2PD602AQ 2PD602AR 2PD602AS	$I_C = 50\text{ mA}; V_{CE} = 10\text{ V};$ $f = 100\text{ MHz};$ note 1	140	–	MHz
			160	–	MHz
			180	–	MHz

## Note

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

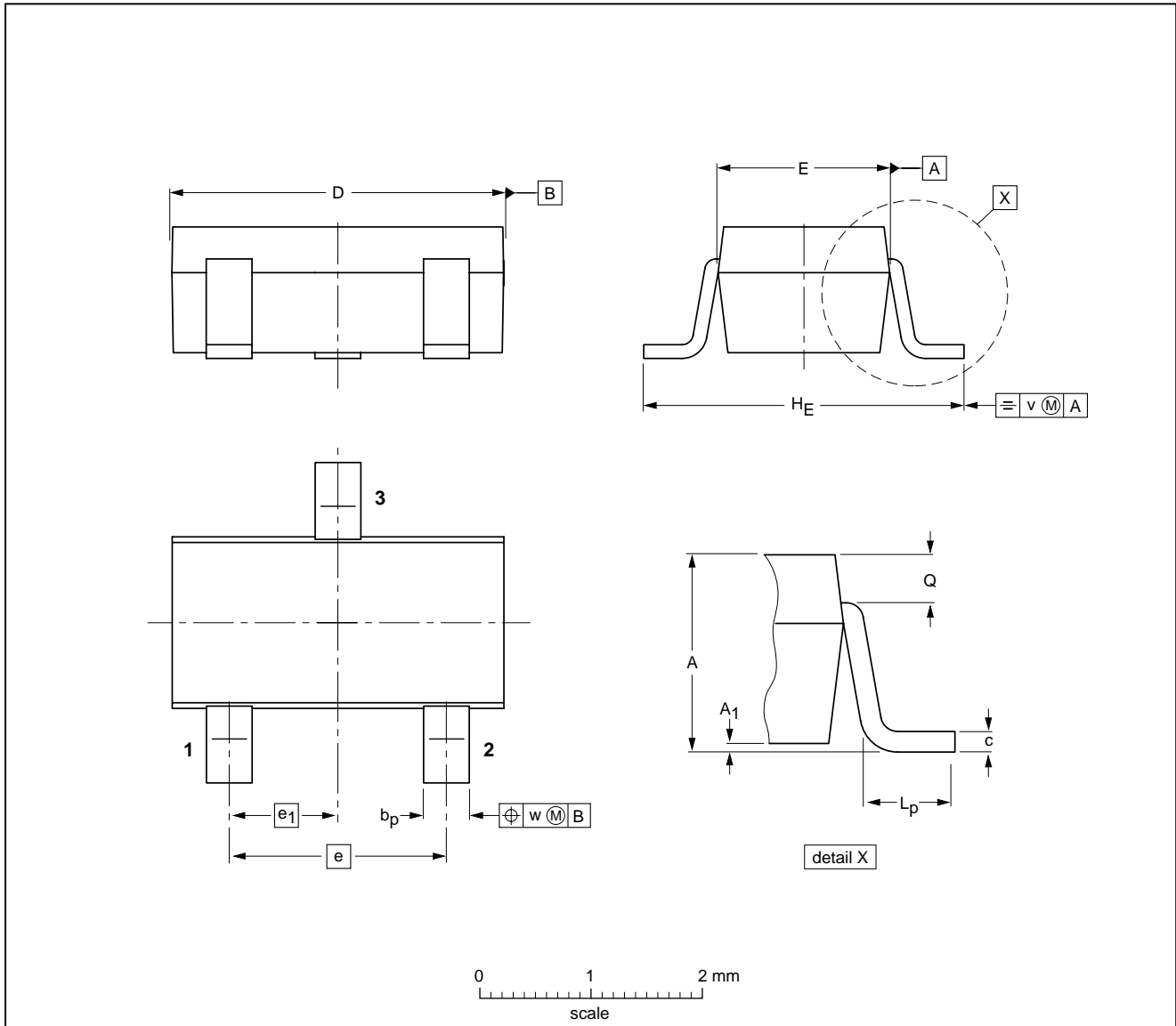
NPN general purpose transistor

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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			98-07-17

## NPN general purpose transistor

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**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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NPN general purpose transistor

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**NOTES**

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**NOTES**

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