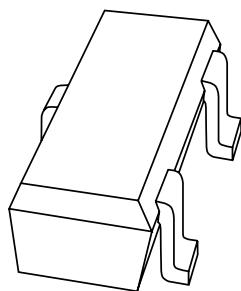


DATA SHEET



2PD602A

NPN general purpose transistor

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

1997 Jun 20

NPN general purpose transistor

2PD602A

FEATURES

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

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

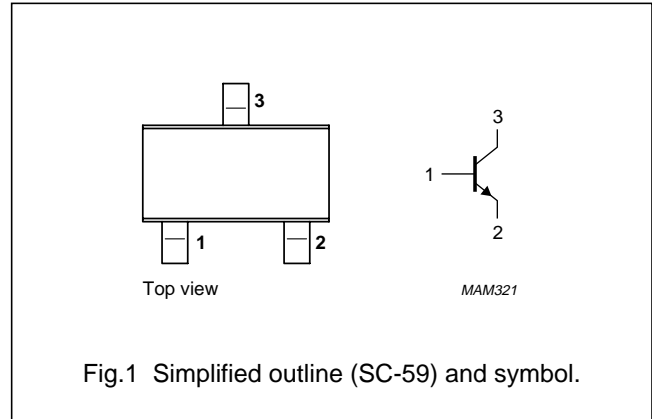
NPN transistor in an SC-59 plastic package.
PNP complement: 2PB710A.

MARKING

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

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector



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	$I_C = 50\text{ mA}; V_{CE} = 10\text{ V}; f = 100\text{ MHz};$ note 1			
	2PD602AQ		140	–	MHz
	2PD602AR		160	–	MHz
	2PD602AS		180	–	MHz

NPN general purpose transistor

2PD602A

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.

NPN general purpose transistor

2PD602A

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	μA
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	
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
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: $t_p \leq 300\text{ }\mu\text{s}; \delta \leq 0.02.$

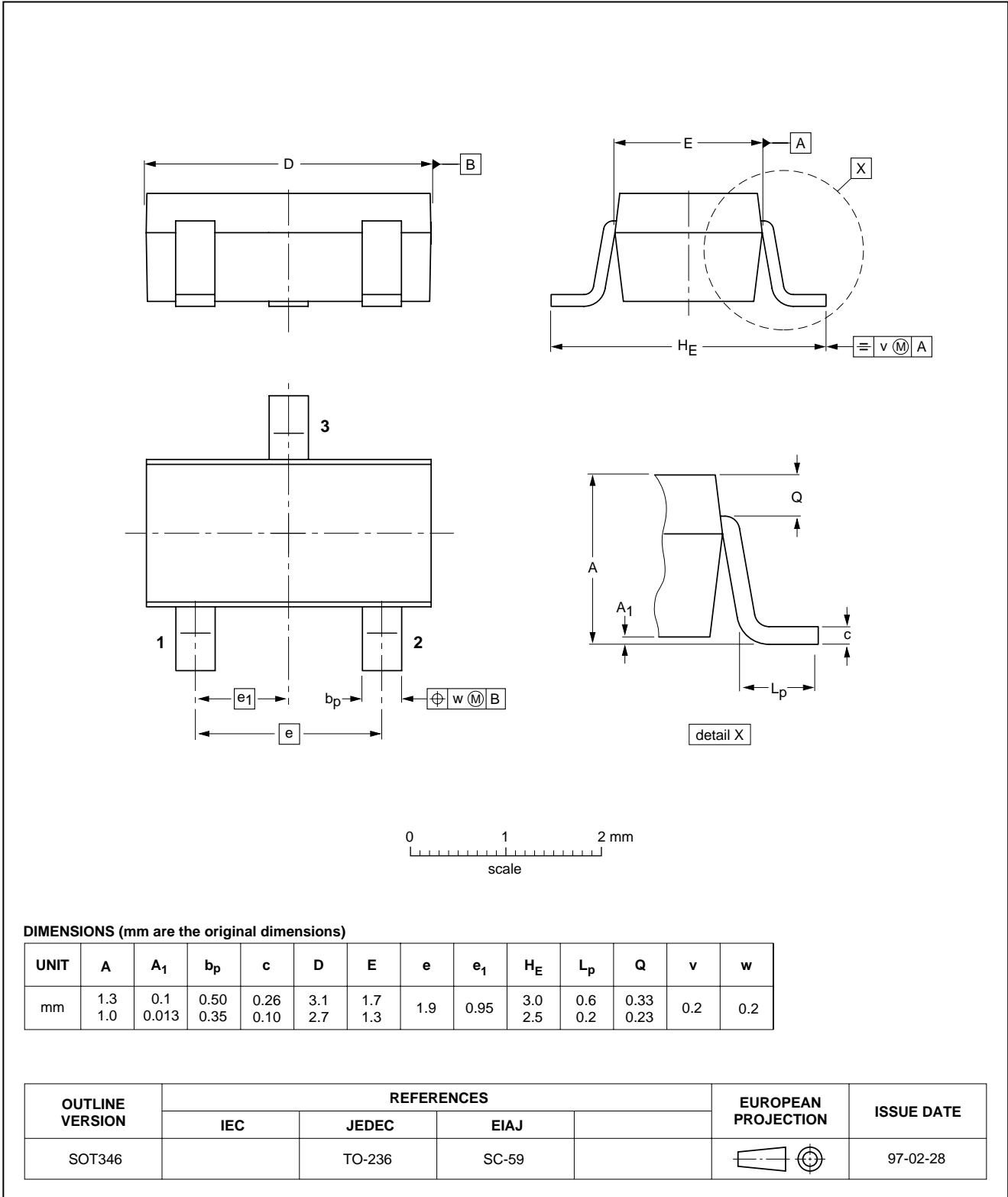
NPN general purpose transistor

2PD602A

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT346



NPN general purpose transistor

2PD602A

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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NPN general purpose transistor

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