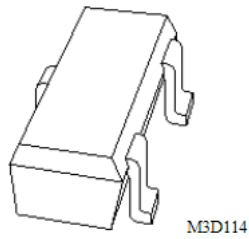


DISCRETE SEMICONDUCTORS



2PD601A
NPN general purpose transistor

Product specification
Supersedes data of 1997 Jun 20

1999 Apr 23

NPN general purpose transistor**2PD601A****FEATURES**

- Low current (max. 100 mA)
- Low voltage (max. 50 V).

APPLICATIONS

- General purpose switching and amplification.

DESCRIPTION

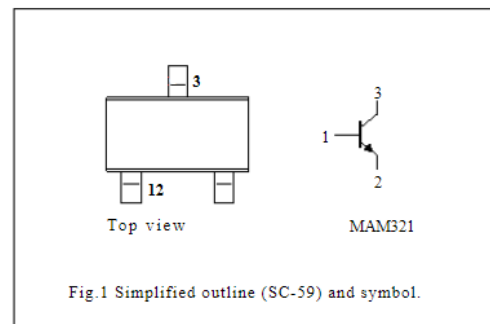
NPN transistor in an SC-59 plastic package.
PNP complement: 2PB709A.

MARKING

TYPE NUMBER	MARKING CODE
2PD601AQ	ZQ
2PD601AR	ZR
2PD601AS	ZS

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	-	6V	
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} ≤ 25 °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.

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THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R _{thj-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 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT	
ICBO	collector cut-off current	IE = 0; VCB = 60V	–	10	nA	
		IE = 0; VCB = 60V; T _j = 150 °C	–	5	μA	
IEBO	emitter cut-off current	IC = 0; VEB = 5V	–	10	nA	
h _{FE}	DC current gain	IC = 100 mA; VCE = 2 V; note 1	90	–		
	DC current gain	IC = 2 mA; VCE = 10 V; note 1				
	2PD601AQ		160	260		
	2PD601AR		210	340		
	2PD601AS		290	460		
VCEsat	collector-emitter saturation voltage	IC = 100 mA; IB = 10 mA; note 1	–	500	mV	
Cc	collector capacitance	IE = 0; VCB = 10 V; f = 1 MHz	–	3.5	pF	
f _T	transition frequency	IC = 2 mA; VCE = 10V; f = 100 MHz				
			2PD601AQ	100	–	MHz
			2PD601AR	120	–	MHz
			2PD601AS	140	–	MHz

Note

1. Pulse test: t_p ≤ 300 μs; δ ≤ 0.02.

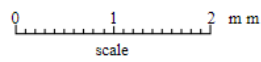
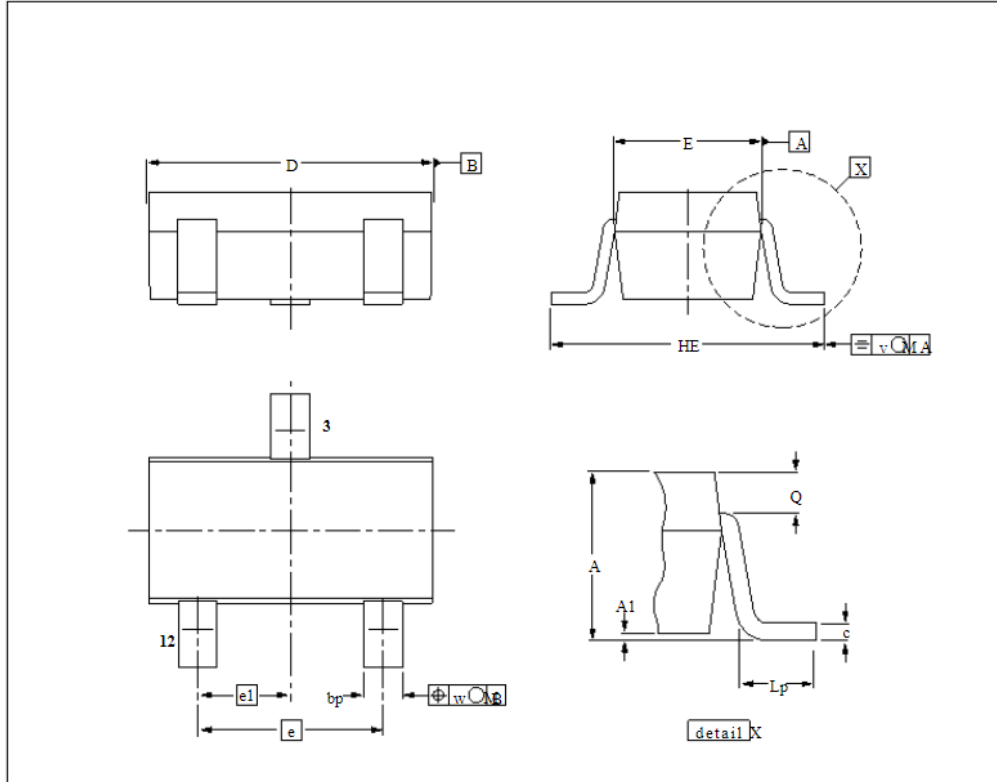
NPN general purpose transistor

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PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT346



DIMENSIONS (mm are the original dimensions)

UNIT	A	A1	bp	cD	D	E	e	e1	HE	Lp	Qw	v	
mm	1.3	0.1	0.50	0.26	3.1	1.7	1.9	0.95	3.0	0.6	0.33	0.2	0.2
	1.0	0.013	0.35	0.10	2.7	1.3			2.5	0.2	0.23		

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

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

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.

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NOTES

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NOTES