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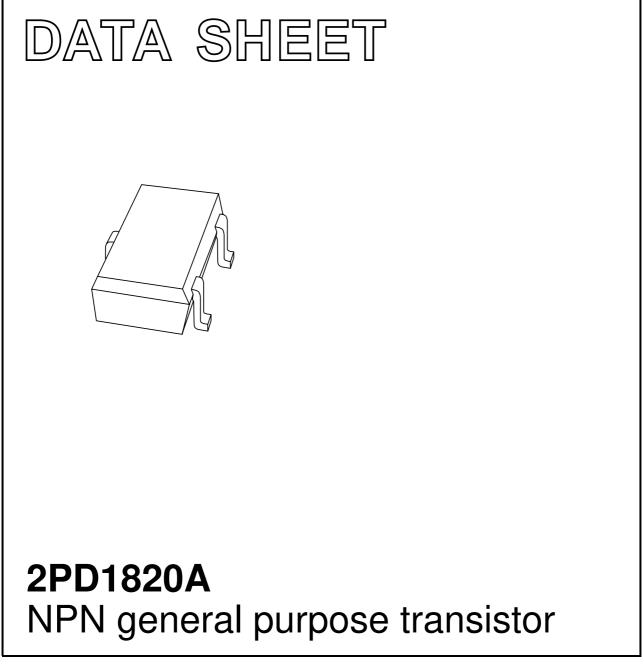
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Kind regards,

Team Nexperia

DISCRETE SEMICONDUCTORS



Product data sheet Supersedes data of 1997 May 22 1999 Apr 12



NPN general purpose transistor

FEATURES

- High current (max. 500 mA)
- Low voltage (max. 50 V)
- Low collector-emitter saturation voltage (max. 600 mV).

APPLICATIONS

• General purpose switching and amplification, especially for portable equipment.

DESCRIPTION

NPN transistor in an SC-70; SOT323 plastic package. PNP complement: 2PB1219A.

MARKING

TYPE NUMBER	MARKING CODE ⁽¹⁾		
2PD1820AQ	A*Q		
2PD1820AR	A*R		
2PD1820AS	A*S		

Note

- 1. * = : Made in Hong Kong.
 - * = t : Made in Malaysia.

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	А
I _{BM}	peak base current		_	200	mA
P _{tot}	total power dissipation	$T_{amb} \le 25 \text{ °C}; \text{ note } 1$	_	200	mW
T _{stg}	storage temperature		-65	+150	°C
Tj	junction temperature		_	150	°C
T _{amb}	operating ambient temperature		-65	+150	°C

PINNING

PIN

Note

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

1 base 2 emitter 3 collector

DESCRIPTION

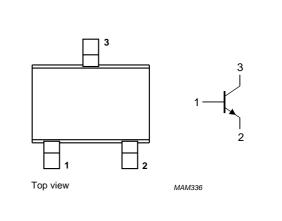


Fig.1 Simplified outline (SC-70; SOT323) and symbol.

Product data sheet

NPN general purpose transistor

2PD1820A

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT	
R _{th j-a}	thermal resistance from junction to ambient	note 1	625	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
I _{CBO}	collector cut-off current	$I_E = 0; V_{CB} = 20 V$	_	10	nA
		$I_E = 0; V_{CB} = 20 V; T_j = 150 \ ^{\circ}C$	-	5	μA
I _{EBO}	emitter cut-off current $I_{C} = 0; V_{EB} = 4 V$		-	10	nA
h _{FE}	DC current gain	I _C = 150 mA; V _{CE} = 10 V; note 1			
	2PD1820AQ		85	170	
	2PD1820AR		120	240	
	2PD1820AS		170	340	
h _{FE}	DC current gain	I _C = 500 mA; V _{CE} = 10 V; note 1	40	-	
V _{CEsat}	collector-emitter saturation voltage	I _C = 300 mA; I _B = 30 mA; note 1	_	600	mV
C _c	collector capacitance	I _E = i _e = 0; V _{CB} = 10 V; f = 1 MHz	_	15	pF
f _T	transition frequency	$I_{C} = 50 \text{ mA}; V_{CE} = 10 \text{ V}; f = 100 \text{ MHz};$ note 1	150	-	MHz

Note

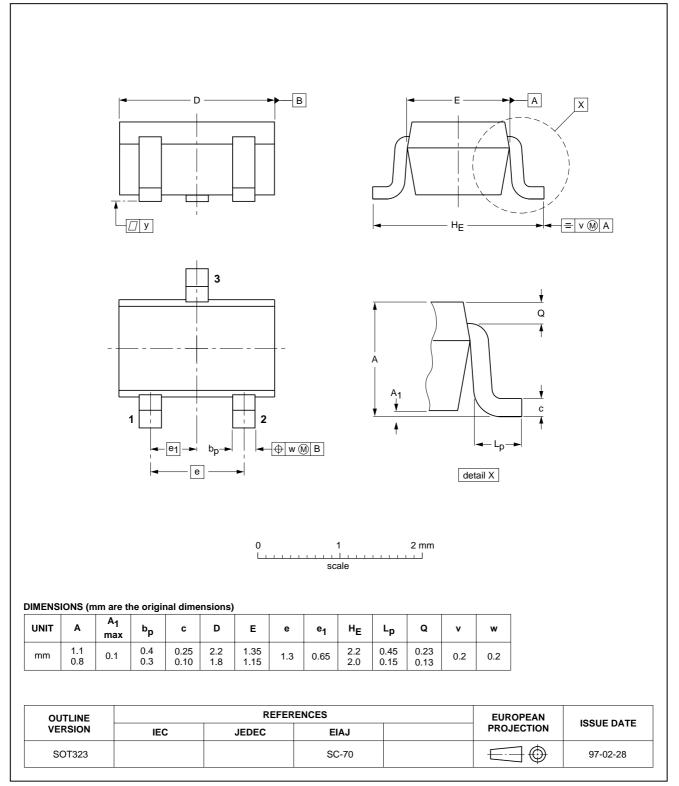
1. Pulse test: $t_p \leq 300~\mu s;~\delta \leq 0.02.$

2PD1820A

NPN general purpose transistor

PACKAGE OUTLINE





SOT323

NPN general purpose transistor

2PD1820A

DATA SHEET STATUS

DOCUMENT STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

Notes

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NXP Semiconductors

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