



2PC4081

NPN general-purpose transistor

Rev. 06 — 17 November 2009

Product data sheet

1. Product profile

1.1 General description

NPN transistor in a SOT323 (SC-70) plastic package. The PNP complement is 2PA1576.

1.2 Features

- Low current (max. 150 mA)
- Low voltage (max. 50 V)

1.3 Applications

- General-purpose switching
- Small signal amplification

2. Pinning information

Table 1. Pinning

Pin	Description	Simplified outline	Symbol
1	base		 sym021
2	emitter		
3	collector		

3. Ordering information

Table 2. Ordering information

Type number	Package		
	Name	Description	Version
2PC4081Q	SC-70	plastic surface mounted package; 3 leads	SOT323
2PC4081R			
2PC4081S			

4. Marking

Table 3. Marking codes

Type number	Marking code ^[1]
2PC4081Q	Z*Q
2PC4081R	Z*R
2PC4081S	Z*S

[1] * = -: made in Hong Kong
 * = t: made in Malaysia

5. Limiting values

Table 4. Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134).

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	-	7	V
I_C	collector current (DC)		-	150	mA
I_{CM}	peak collector current		-	200	mA
I_{BM}	peak base current		-	200	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ °C}$	^[1] -	200	mW
T_{stg}	storage temperature		-65	+150	°C
T_j	junction temperature		-	150	°C
T_{amb}	ambient temperature		-65	+150	°C

[1] Transistor mounted on an FR4 printed-circuit board, single-sided copper, tin-plated and standard footprint.

6. Thermal characteristics

Table 5. Thermal characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$R_{th(j-a)}$	thermal resistance from junction to ambient		^[1] -	-	625	K/W

[1] Transistor mounted on an FR4 printed-circuit board, single-sided copper, tin-plated and standard footprint.

7. Characteristics

Table 6. Characteristics
T_{amb} = 25 °C unless otherwise specified.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
I _{CBO}	collector-base cut-off current	I _E = 0 A; V _{CB} = 30 V	-	-	100	nA
		I _E = 0 A; V _{CB} = 30 V; T _j = 150 °C	-	-	5	μA
I _{EBO}	emitter-base cut-off current	I _C = 0 A; V _{EB} = 4 V	-	-	100	nA
h _{FE}	DC current gain	I _C = 1 mA; V _{CE} = 6 V				
		2PC4081Q	120	-	270	
		2PC4081R	180	-	390	
		2PC4081S	270	-	560	
V _{CEsat}	collector-emitter saturation voltage	I _C = 50 mA; I _B = 5 mA	[1]	-	400	mV
C _c	collector capacitance	I _E = i _e = 0 A; V _{CB} = 12 V; f = 1 MHz	-	2	3.5	pF
f _T	transition frequency	I _C = 2 mA; V _{CE} = 12 V; f = 100 MHz	100	-	-	MHz

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

8. Package outline

Plastic surface-mounted package; 3 leads

SOT323

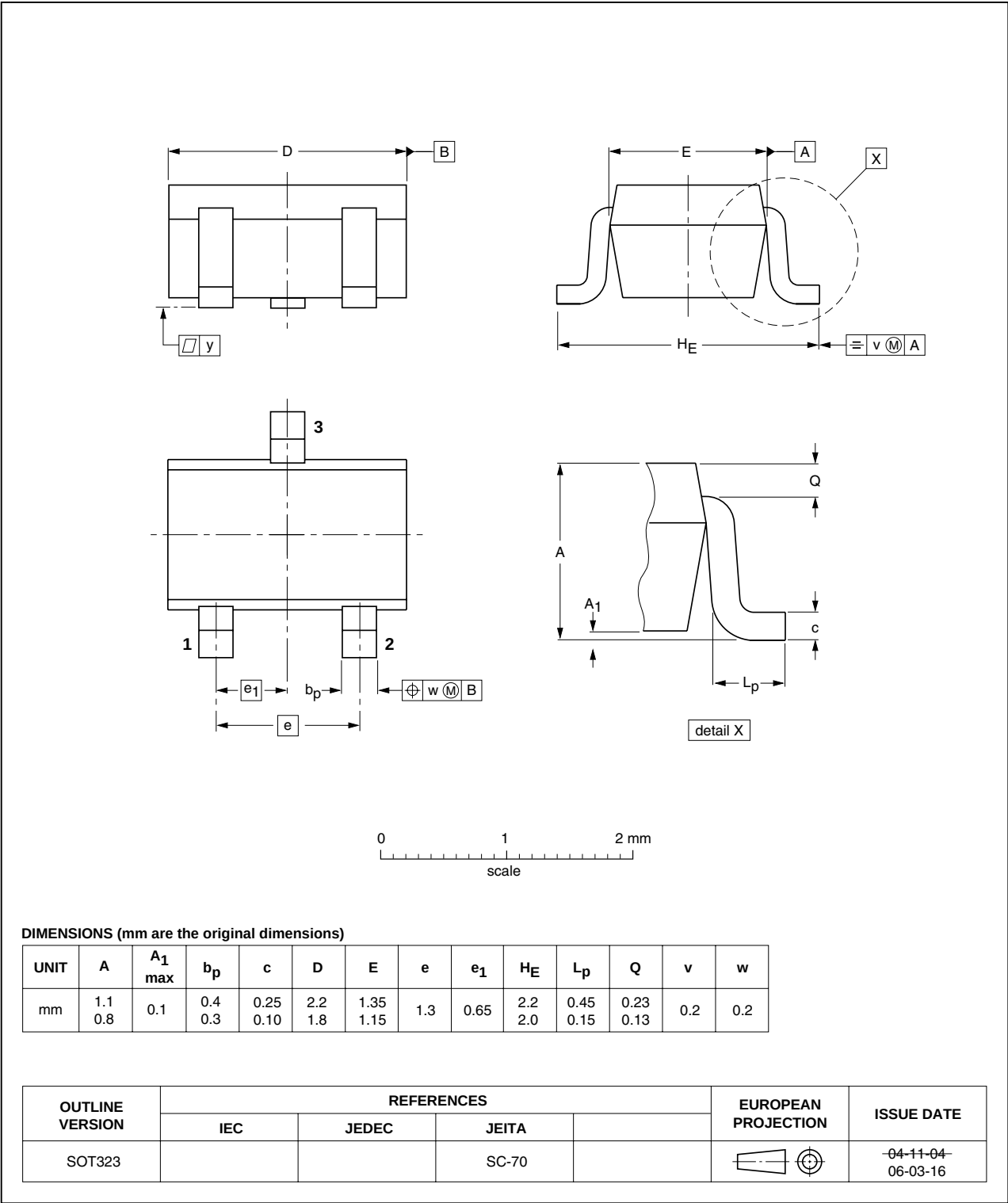


Fig 1. Package outline SOT323 (SC-70)

9. Revision history

Table 7. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
2PC4081_6	20091117	Product data sheet	-	2PC4081_5
Modifications:	- This data sheet was changed to reflect the new company name NXP Semiconductors, including new legal definitions and disclaimers. No changes were made to the technical content. Figure 1 "Package outline SOT323 (SC-70)": updated			
2PC4081_5	20041125	Product data sheet	-	2PC4081_4
2PC4081_4	19990408	Product specification	-	2PC4081_3
2PC4081_3	19970704	Product specification	-	2PC4081_2
2PC4081_2	19931213	n.a.	-	n.a.

10. Legal information

10.1 Data sheet status

Document status ^{[1][2]}	Product status ^[3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

[1] Please consult the most recently issued document before initiating or completing a design.

[2] The term 'short data sheet' is explained in section "Definitions".

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