

2PC4081 NPN general-purpose transistor Rev. 06 — 17 November 2009

Product data sheet

Product profile 1.

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	_	
2	emitter		3
3	collector	1 2	1-1-2
			sym021

Ordering information 3.

Table 2. Order	ring informati	ion				
Type number	Package	Package				
	Name	Description	Version			
2PC4081Q	SC-70	plastic surface mounted package; 3 leads	SOT323			
2PC4081R						
2PC4081S						



4. Marking

Marking code ^[1]
Z*Q
Z*R
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	$T_{amb} \le 25 \ ^{\circ}C$	<u>[1]</u> -	200	mW
T _{stg}	storage temperature		-65	+150	°C
Tj	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	Тур	Max	Unit
R _{th(j-a)}	thermal resistance from junction to ambient		<u>[1]</u> -	-	625	K/W

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

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7. Characteristics

Symbol	Parameter	Conditions	Min	Тур	Мах	Unit
I _{CBO}	collector-base	$I_E = 0 \text{ A}; V_{CB} = 30 \text{ V}$	-	-	100	nA
	cut-off current	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	$I_{C} = 1 \text{ mA}; V_{CE} = 6 \text{ V}$				
	2PC4081Q		120	-	270	
	2PC4081R		180	-	390	
	2PC4081S		270	-	560	
V _{CEsat}	collector-emitter saturation voltage	I _C = 50 mA; I _B = 5 mA	<u>[1]</u> -	-	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: $t_p \le 300 \ \mu s$; $\delta \le 0.02$.

8. Package outline

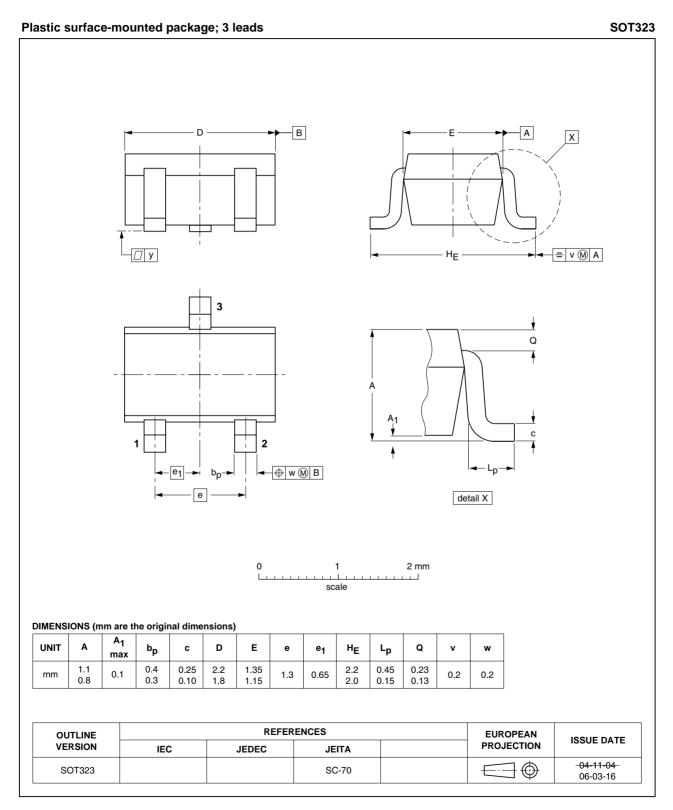


Fig 1. Package outline SOT323 (SC-70)

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:	including nev content.	eet was changed to reflect to version of the set of the	aimers. No changes w	
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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Date of release: 17 November 2009 Document identifier: 2PC4081_6

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