

# 2PA1576

PNP general-purpose transistor

Rev. 06 — 17 November 2009

Product data sheet

## 1. Product profile

### 1.1 General description

PNP transistor in a SOT323 (SC-70) plastic package. The NPN complement is 2PC4081.

### 1.2 Features

- Low current (max. 150 mA)
- Low voltage (max. 50 V)
- Low collector capacitance (typ. 2.5 pF)

### 1.3 Applications

- General-purpose switching and amplification

## 2. Pinning information

Table 1. Pinning

Pin	Description	Simplified outline	Symbol
1	base		
2	emitter		
3	collector		

## 3. Ordering information

Table 2. Ordering information

Type number	Package		
	Name	Description	Version
2PA1576Q	SC-70	plastic surface mounted package; 3 leads	SOT323
2PA1576R			
2PA1576S			

## 4. Marking

**Table 3. Marking codes**

Type number	Marking code <sup>[1]</sup>
2PA1576Q	F*Q
2PA1576R	F*R
2PA1576S	F*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	-	-6	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	$T_{amb} \leq 25\text{ °C}$	<sup>[1]</sup> -	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		<sup>[1]</sup> -	-	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**

$T_{amb} = 25\text{ °C}$  unless otherwise specified.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$I_{CBO}$	collector-base cut-off current	$I_E = 0\text{ A}; V_{CB} = -30\text{ V}$	-	-	-100	nA
		$I_E = 0\text{ A}; V_{CB} = -30\text{ V}; T_j = 150\text{ °C}$	-	-	-5	$\mu\text{A}$
$I_{EBO}$	emitter-base cut-off current	$I_C = 0\text{ A}; V_{EB} = -4\text{ V}$	-	-	-100	nA
$h_{FE}$	DC current gain	$I_C = -1\text{ mA}; V_{CE} = -6\text{ V}$				
		2PA1576Q	120	-	270	
		2PA1576R	180	-	390	
		2PA1576S	270	-	560	
$V_{CEsat}$	collector-emitter saturation voltage	$I_C = -50\text{ mA}; I_B = -5\text{ mA}$	[1] -	-	-500	mV
$C_c$	collector capacitance	$I_E = i_e = 0\text{ A}; V_{CB} = -12\text{ V}; f = 1\text{ MHz}$	-	2.5	3.5	pF
$f_T$	transition frequency	$I_C = -2\text{ mA}; V_{CE} = -12\text{ V}; f = 100\text{ MHz}$	100	-	-	MHz

[1] Pulse test:  $t_p \leq 300\text{ }\mu\text{s}$ ;  $\delta \leq 0.02$ .

8. Package outline

Plastic surface-mounted package; 3 leads

SOT323

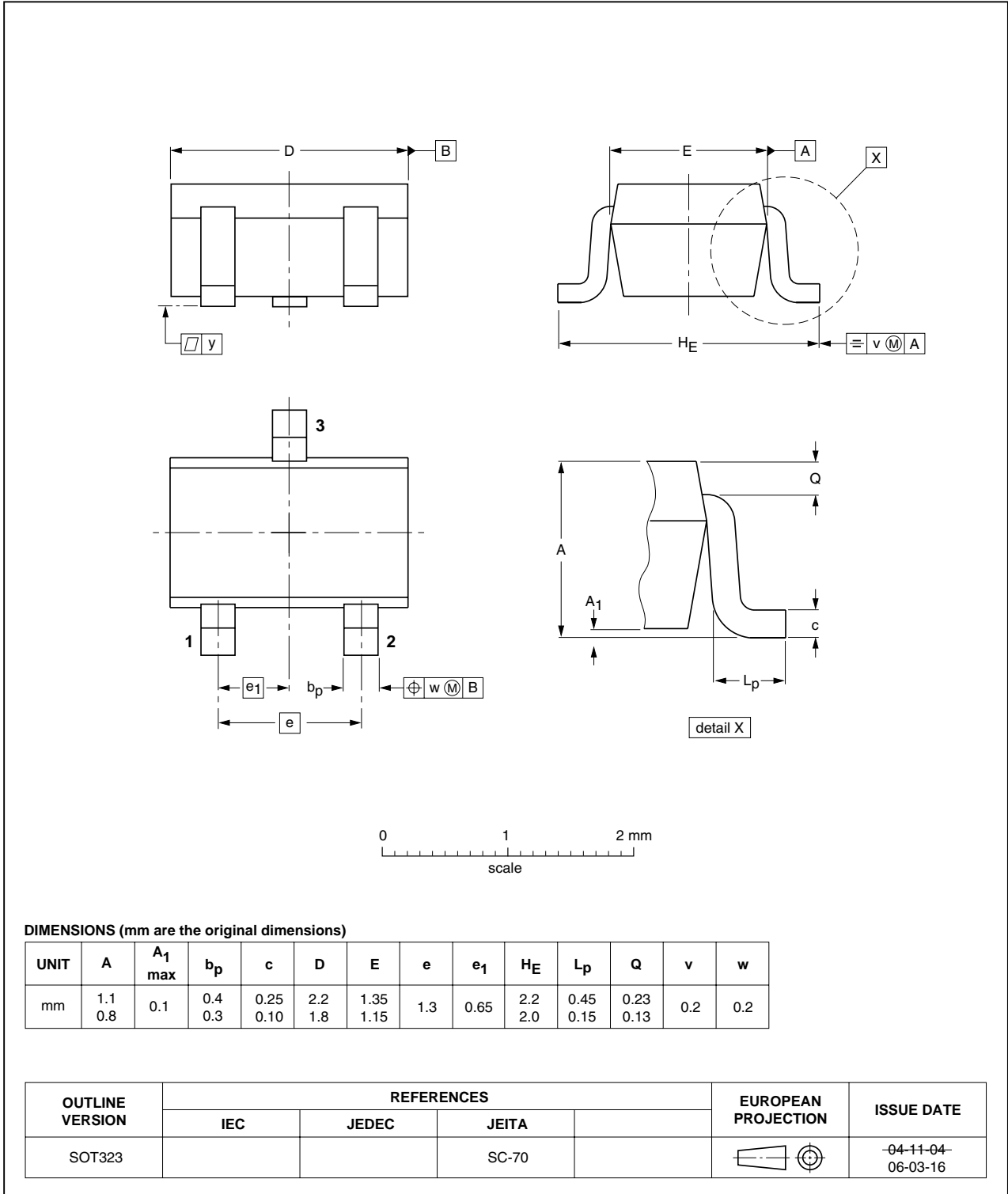


Fig 1. Package outline SOT323 (SC-70)

## 9. Revision history

Table 7. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
2PA1576_6	20091117	Product data sheet	-	2PA1576_5
Modifications:				
				<ul style="list-style-type: none"><li>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.</li><li><a href="#">Figure 1 "Package outline SOT323 (SC-70)"</a>: updated</li></ul>
2PA1576_5	20041124	Product data sheet	-	2PA1576_4
2PA1576_4	19990531	Product specification	-	2PA1576_3
2PA1576_3	19970328	Objective specification	-	2PA1576_2
2PA1576_2	19931213	n.a.	-	n.a.

## 10. Legal information

### 10.1 Data sheet status

Document status <sup>[1][2]</sup>	Product status <sup>[3]</sup>	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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