

2PA1774

PNP general-purpose transistor

Rev. 04 — 24 November 2004

Product data sheet

1. Product profile

1.1 General description

PNP transistor in a SOT416 (SC-75) plastic package. The NPN complement is 2PC4617.

1.2 Features

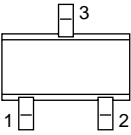
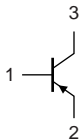
- Low current (max. 150 mA)
- Low voltage (max. 50 V).

1.3 Applications

- General-purpose switching and amplification in communication, Electronic Data Processing (EDP) and consumer applications.

2. Pinning information

Table 1: Pinning

Pin	Description	Simplified outline	Symbol
1	base		 <i>sym013</i>
2	emitter		
3	collector		

3. Ordering information

Table 2: Ordering information

Type number	Package		
	Name	Description	Version
2PA1774Q	SC-75	plastic surface mounted package; 3 leads	SOT416
2PA1774R			
2PA1774S			

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4. Marking

Table 3: Marking codes

Type number	Marking code
2PA1774Q	YQ
2PA1774R	YR
2PA1774S	YS

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		-	-100	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ °C}$	[1] -	150	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] -	-	833	K/W

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

7. Characteristics

Table 6: Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$; 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
		$I_E = 0\text{ A}$; $V_{CB} = -30\text{ V}$; $T_j = 150\text{ }^{\circ}\text{C}$	-	-	-5	μA
I_{EBO}	emitter-base cut-off current	$I_C = 0\text{ A}$; $V_{EB} = -4\text{ V}$	-	-	-100	nA
h_{FE}	DC current gain	$I_C = -1\text{ mA}$; $V_{CE} = -6\text{ V}$	[1]			
		2PA1774Q	120	-	270	
		2PA1774R	180	-	390	
		2PA1774S	270	-	560	
V_{CEsat}	collector-emitter saturation voltage	$I_C = -50\text{ mA}$; $I_B = -5\text{ mA}$	[1]	-	-200	mV
C_c	collector capacitance	$I_E = i_e = 0\text{ A}$; $V_{CB} = -12\text{ V}$; $f = 1\text{ MHz}$	-	-	2.2	pF
f_T	transition frequency	$I_E = -2\text{ mA}$; $V_{CE} = -12\text{ V}$; $f = 100\text{ MHz}$	[1]	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

SOT416

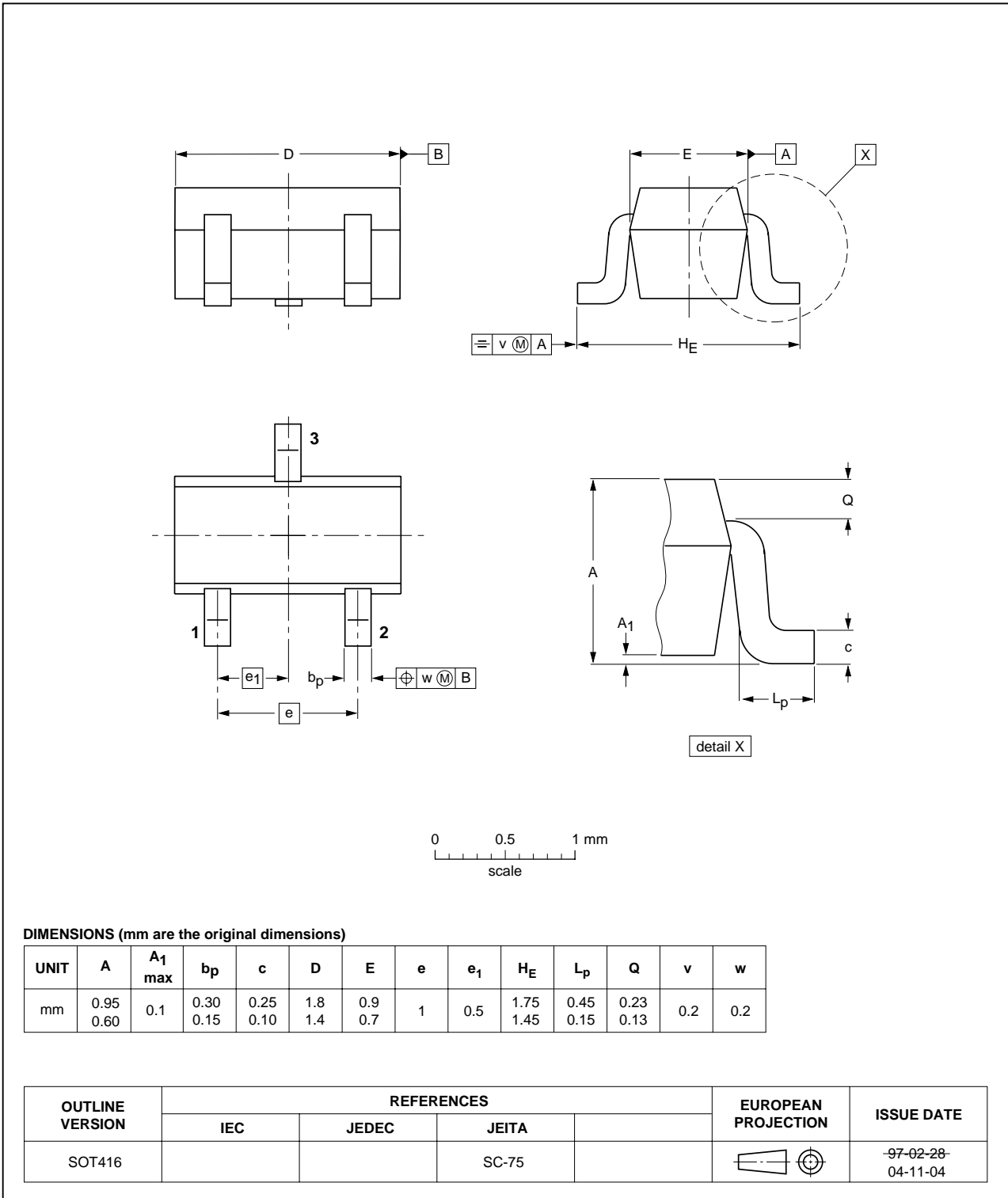


Fig 1. Package outline SOT416 (SC-75)

9. Revision history

Table 7: Revision history

Document ID	Release date	Data sheet status	Change notice	Doc. number	Supersedes
2PA1774_4	20041124	Product data sheet	-	9397 750 14083	2PA1774_3
Modifications:	<ul style="list-style-type: none"> The format of this data sheet has been redesigned to comply with the new presentation and information standard of Philips Semiconductors. Section 1.2: maximum low current and maximum low voltage upgraded Table 4: V_{CBO} value changed to -60 V Table 4: V_{CEO} value changed to -50 V Table 4: V_{EBO} value changed to -6 V Table 4: I_C value changed to -150 mA. 				
2PA1774_3	20001212	Product specification	-	9397 750 07835	2PA1774_2
2PA1774_2	19990601	Preliminary specification	-	9397 750 05957	2PA1774_1
2PA1774_1	19970709	Preliminary specification	-	9397 750 02196	-

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Level	Data sheet status ^[1]	Product status ^[2] ^[3]	Definition
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Limiting values definition — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). 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.

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