

PNP general-purpose transistor

Rev. 05 — 17 November 2009

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
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	$T_{amb} \le 25 ^{\circ}C$	<u>[1]</u> -	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	Тур	Max	Unit
$R_{\text{th(j-a)}}$	thermal resistance from junction to ambient		<u>[1]</u> -	-	833	K/W

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

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Characteristics

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Table 6. Characteristics

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

Symbol	Parameter	Conditions	Min	Тур	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	μΑ
I _{EBO}	emitter-base cut-off current	$I_C = 0 A; V_{EB} = -4 V$	-	-	-100	nA
h _{FE}	DC current gain	$I_C = -1 \text{ mA}; V_{CE} = -6 \text{ V}$	[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 MHz	11 100	-	-	MHz

^[1] Pulse test: $t_p \le 300~\mu s;~\delta \le 0.02.$

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Package outline 8.

Plastic surface-mounted package; 3 leads **SOT416** В - A Х = v M A Q С → w M B detail X 0.5 1 mm scale **DIMENSIONS (mm are the original dimensions)** UNIT D Ε H_E Q С ٧ bp е e₁ L_p w max 0.30 0.25 1.8 0.9 1.75 0.45 0.23 0.95 0.5 0.2 0.2 0.60 0.15 0.10 0.7 0.13 REFERENCES OUTLINE **EUROPEAN ISSUE DATE PROJECTION VERSION** IEC **JEDEC** JEITA 04-11-04 $\bigoplus \bigoplus$ SOT416 SC-75

Package outline SOT416 (SC-75) Fig 1.

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Revision history

Table 7. **Revision history**

Product data sheet

Document ID	Release date	Data sheet status	Change notice	Supersedes
2PA1774_5	20091117	Product data sheet	-	2PA1774_4
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 technic content. 			
	Figure 1 "Packa"	age outline SOT416 (SC-75	<u>5)"</u> : updated	
2PA1774_4	20041124	Product data sheet	-	2PA1774_3
2PA1774_3	20001212	Product specification	-	2PA1774_2
2PA1774_2	19990601	Preliminary specification	-	2PA1774_1
2PA1774_1	19970709	Preliminary specification	-	-

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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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2PA1774 **NXP Semiconductors**

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