

2PA1774

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		

sym013

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			

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

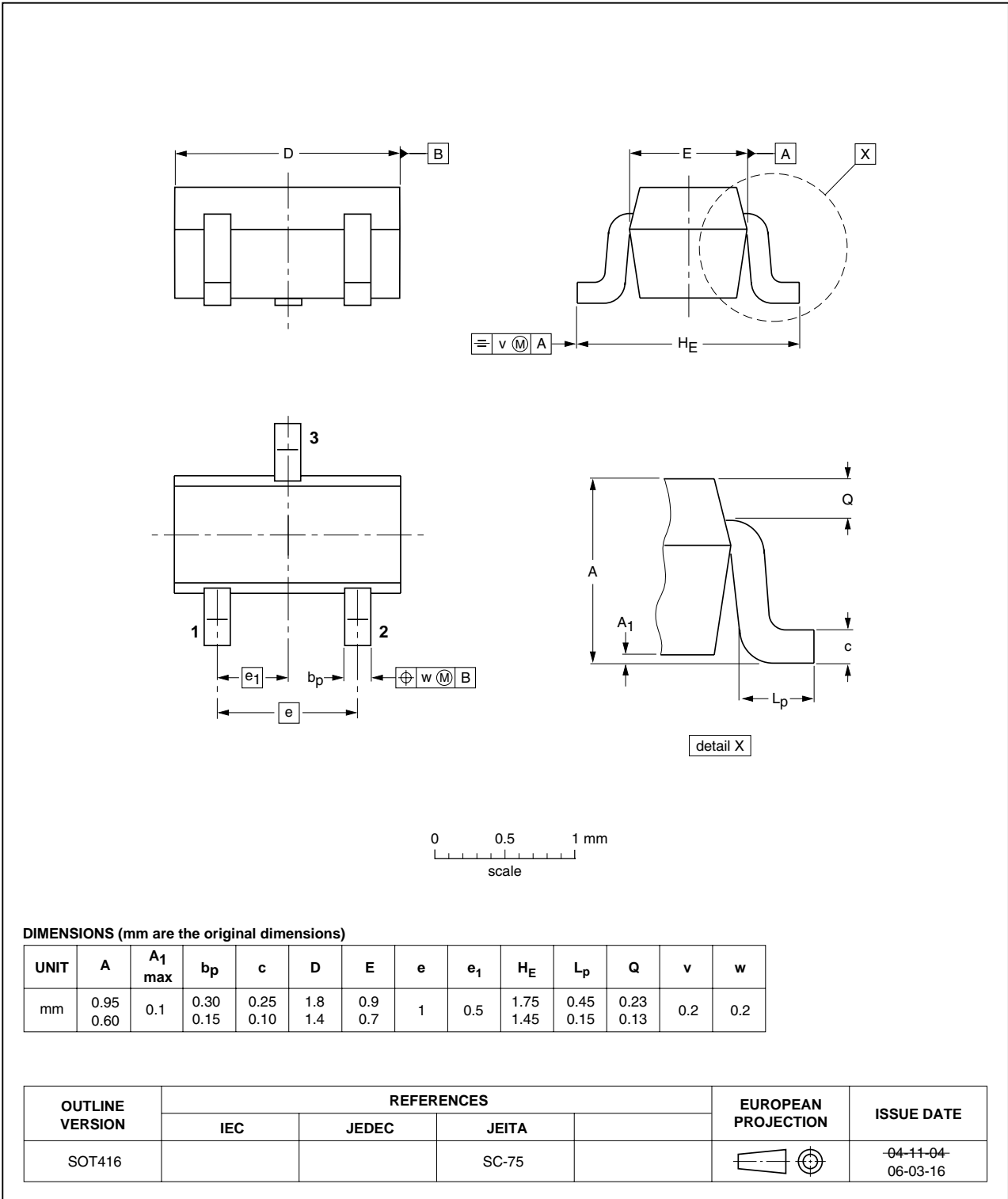


Fig 1. Package outline SOT416 (SC-75)

9. Revision history

Table 7. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
2PA1774_5	20091117	Product data sheet	-	2PA1774_4
Modifications:		<ul style="list-style-type: none">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 SOT416 (SC-75)"; 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	-	-

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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Datasheet



(Product Specification)
v.5.0, 2009-12-07
Pages, 84kB

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PNP general-purpose transistor

General description	Block diagrams/pinning	Quality/reliability/chemical content
Features and benefits	Pricing/ordering/availability	Design support
Applications	Samples	Print/email
Quick reference	Products/packages	Disclaimers
Parameters/similar products		

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General description

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

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Features and benefits

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

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Applications

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

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Parametrics/similar products

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Type number	Package	Complement	I _C [max](mA)	Polarity	P _{tot} [max](mW)	V _{CEO} [max](V)	f _T [min](MHz)	h _{FE} [max]	h _{FE} [min]
2PA1774Q	SOT416 (SOT416)	2PC4617Q	100	PNP	150	40	100	270	120
2PA1774R	SOT416 (SOT416)	2PC4617R	100	PNP	150	40	100	390	180
2PA1774S	SOT416 (SOT416)	2PC4617S	100	PNP	150	40	100	560	270

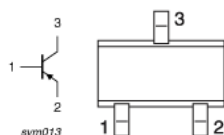
Similar products

2PA1774 links to the similar products page containing an overview of products that are similar in function or related to the type number(s) as listed on this page. The similar products page includes products from the same catalog tree(s), relevant selection guides and products from the same functional category.

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Block diagrams

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Pricing/ordering/availability

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Type number	Ordering code(12NC)	Orderable part number	Region	Distributor	In stock	Order quantity	Inventory date	Buy online	Samples
2PA1774Q	9340 509 50115	2PA1774Q,115	ASIA	WPI	15,000	3000	05/15/2011	Buy online	Order samples
			NA	MOUSER ELECTRONICS	12,400		5/14/2011	Buy online	
			NA	MOUSER ELECTRONICS	12,400		5/14/2011	Buy online	
2PA1774R/DG	9340 614 23115	2PA1774R/DG,115	JAPAN	CHIP ONE STOP	no		5/12/2011	Buy online	not available
2PA1774R/DG	9340 614 23135	2PA1774R/DG,135	JAPAN	CHIP ONE STOP	no		5/12/2011	Buy online	not available
2PA1774R	9340 509 60115	2PA1774R,115	NA	DIGI-KEY CORPORATION	56,900		5/14/2011	Buy online	Order samples
			NA	DIGI-KEY CORPORATION	54,000		5/14/2011	Buy online	
			ASIA	WPI	15,000	3000	05/15/2011	Buy online	
			EU	FARNELL	115		5/14/2011	Buy online	
			AS	element14 APAC	115		5/14/2011	Buy online	
			NA	MOUSER ELECTRONICS	4		5/14/2011	Buy online	
			NA	MOUSER ELECTRONICS	4		5/14/2011	Buy online	
			JAPAN	CHIP ONE STOP	yes		5/12/2011	Buy online	
			EU	FARNELL	115		5/14/2011	Buy online	
AS	element14 APAC	115		5/14/2011	Buy online				
2PA1774R	9340 509 60135	2PA1774R,135	EU	FARNELL	115		5/14/2011	Buy online	not available
			AS	element14 APAC	115		5/14/2011	Buy online	

			JAPAN	CHIP ONE STOP	no		5/12/2011	Buy online	
2PA1774S	9340 509 70115	2PA1774S,115	NA	MOUSER ELECTRONICS	6,250		5/14/2011	Buy online	Order samples
			NA	MOUSER ELECTRONICS	6,250		5/14/2011	Buy online	

The variants in the table below are discontinued. See the table [Discontinued information](#) for more information.

Type number	Ordering code(12NC)	Orderable part number	Region	Distributor	In stock	Order quantity	Inventory date	Buy online	Samples
2PA1774R/A2	9340 631 69115	2PA1774R/A2,115							not available

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Products/packages

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Type number	Orderable part number	Ordering code (12NC)	Product status	Package	Packing	Marking	ECCN
2PA1774Q	2PA1774Q,115	9340 509 50115	Volume production	SOT416 (SOT416)	Tape reel smd	Standard Marking	
2PA1774R/DG	2PA1774R/DG,115	9340 614 23115	Volume production	SOT416 (SOT416)	Tape reel smd	Standard Marking	
2PA1774R/DG	2PA1774R/DG,135	9340 614 23135	Volume production	SOT416 (SOT416)	Tape reel smd	Standard Marking	
2PA1774R	2PA1774R,115	9340 509 60115	Volume production	SOT416 (SOT416)	Tape reel smd	Standard Marking	
2PA1774R	2PA1774R,135	9340 509 60135	Volume production	SOT416 (SOT416)	Tape reel smd	Standard Marking	
2PA1774S	2PA1774S,115	9340 509 70115	Volume production	SOT416 (SOT416)	Tape reel smd	Standard Marking	

The variants in the table below are discontinued. See the table [Discontinued information](#) for more information.

Type number	Orderable part number	Ordering code (12NC)	Product status	Package	Packing	Marking	ECCN
2PA1774R/A2	2PA1774R/A2,115	9340 631 69115	Withdrawn Replacement product	SOT416 (SOT416)	Tape reel smd	Standard Marking	

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Quality/reliability/chemical content

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Type number	Orderable part number	Chemical content	RoHS	Leadfree conversion date	RHF	IFR (FIT)	MTBF (hours)	MSL	MSL LF
2PA1774Q	2PA1774Q,115	2PA1774Q		week 17, 2003				1	NA
2PA1774R/DG	2PA1774R/DG,115	2PA1774R/DG		Always Pb-free				1	
2PA1774R/DG	2PA1774R/DG,135	2PA1774R/DG		Always Pb-free				1	
2PA1774R	2PA1774R,115	2PA1774R		week 17, 2003				1	NA
2PA1774R	2PA1774R,135	2PA1774R		week 17, 2003				1	NA
2PA1774S	2PA1774S,115	2PA1774S		week 17, 2003				1	NA

The variants in the table below are discontinued. See the table [Discontinued information](#) for more information.

Type number	Orderable part number	Chemical content	RoHS	Leadfree conversion date	RHF	IFR (FIT)	MTBF (hours)	MSL	MSL LF
2PA1774R/A2	2PA1774R/A2,115			Always Pb-free					

Quality and reliability disclaimer

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Discontinued information

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Type number	Ordering code (12NC)	Last-time buy date	Last-time delivery date	Replacement product	DN Notice	Status	Comments
2PA1774R/A2	934063169115	31-dec-09	30-jun-10	2PA1774R	DN 64	Multi source product Standard availability	Standard End of Life.

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Design support

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Leaflet

Downsize the footprint, boost the performance; NXP ultra-small diodes and transistors for portable applications (v.1.0, 2009-05-01)

Other type

Letter Symbols - Transistors; General (v.1.0, 1999-05-07)

Support Models

Spice model of 2PA1774Q
Spice model of 2PA1774R
Spice model of 2PA1774S

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