

# 2PC4617

NPN general-purpose transistor

Rev. 05 — 17 November 2009

Product data sheet

## 1. Product profile

### 1.1 General description

NPN transistor in a SOT416 (SC-75) plastic package. The PNP complement is 2PA1774.

### 1.2 Features

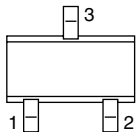
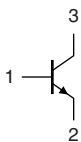
- Low current (max. 150 mA)
- Low voltage (max. 50 V)

### 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>sym021</i>
2	emitter		
3	collector		

## 3. Ordering information

Table 2. Ordering information

Type number	Package		
	Name	Description	Version
2PC4617Q	SC-75	plastic surface mounted package; 3 leads	SOT416
2PC4617R			
2PC4617S			

## 4. Marking

**Table 3. Marking codes**

Type number	Marking code
2PC4617Q	ZQ
2PC4617R	ZR
2PC4617S	ZS

## 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	$T_{amb} \leq 25\text{ °C}$	[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**

$T_{amb} = 25\text{ °C}$ ; 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	$I_C = 1\text{ mA}$ ; $V_{CE} = 6\text{ V}$	[1]			
		2PC4617Q	120	-	270	
		2PC4617R	180	-	390	
		2PC4617S	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	$I_E = i_e = 0\text{ A}$ ; $V_{CB} = 12\text{ V}$ ; $f = 1\text{ MHz}$	-	-	1.5	pF
$f_T$	transition frequency	$I_C = 2\text{ mA}$ ; $V_{CE} = 12\text{ V}$ ; $f = 100\text{ MHz}$	[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

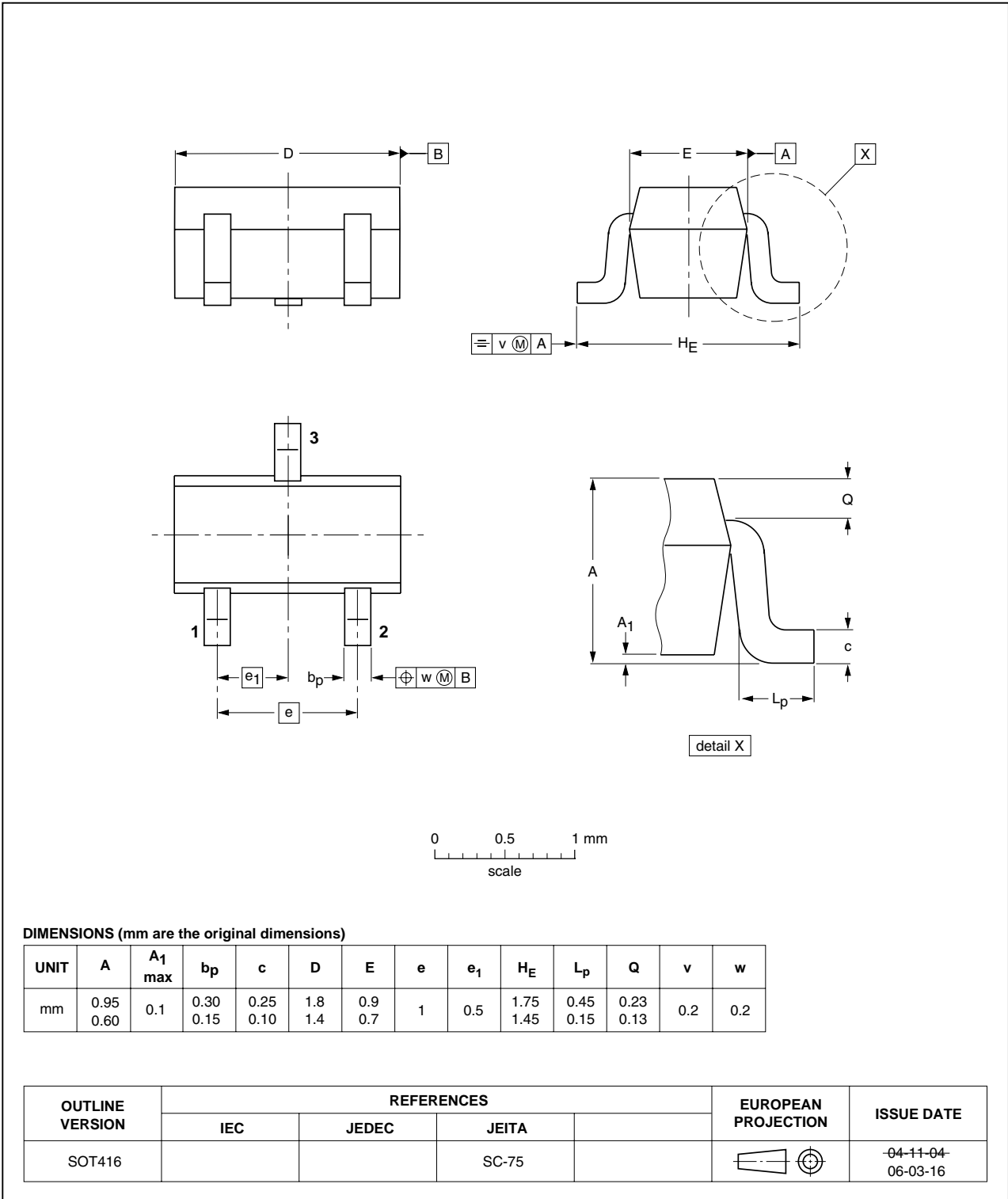


Fig 1. Package outline SOT416 (SC-75)

## 9. Revision history

Table 7. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
2PC4617_5	20091117	Product data sheet	-	2PC4617_4
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 SOT416 (SC-75)"; updated</a></li></ul>		
2PC4617_4	20041125	Product data sheet	-	2PC4617_3
2PC4617_3	19990521	Product specification	-	2PC4617_2
2PC4617_2	19980721	Product specification	-	2PC4617_1
2PC4617_1	19970709	Product specification	-	-

## 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.

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[2] The term 'short data sheet' is explained in section "Definitions".

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