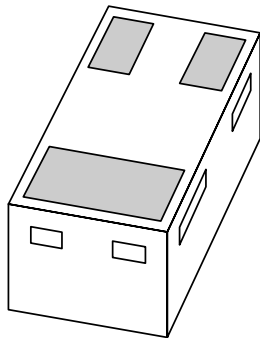


# DATA SHEET



## **2PC4617M series** **NPN general purpose transistors**

Product specification

2003 Jul 15

## NPN general purpose transistors

## 2PC4617M series

## FEATURES

- Leadless ultra small plastic package (1 mm × 0.6 mm × 0.5 mm)
- Board space 1.3 × 0.9 mm
- Power dissipation comparable to SOT23.

## APPLICATIONS

- General purpose small signal DC applications
- Low and medium frequency AC applications
- Mobile communications, digital (still) cameras, PDAs, PCMCIA cards.

## DESCRIPTION

NPN general purpose transistor in a SOT883 leadless ultra small plastic package.  
PNP complement: 2PA1776M series.

## MARKING

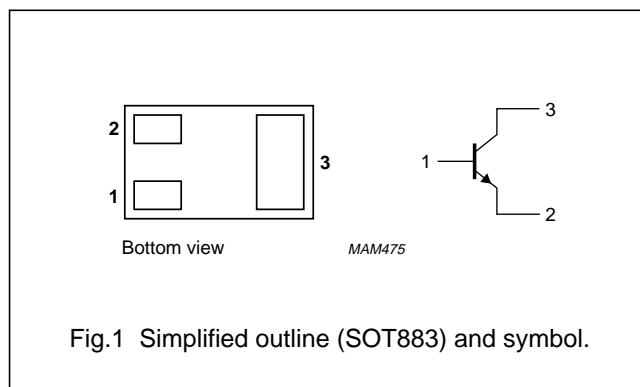
TYPE NUMBER	MARKING CODE
2PC4617QM	D7
2PC4617RM	D8
2PC4617SM	D9

## QUICK REFERENCE DATA

SYMBOL	PARAMETER	MAX.	UNIT
$V_{CEO}$	collector-emitter voltage	50	V
$I_C$	collector current (DC)	100	mA
$I_{CM}$	peak collector current	200	mA

## PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector



## LIMITING VALUES

In accordance with the Absolute Maximum System (IEC 60134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{CBO}$	collector-base voltage	open emitter	–	50	V
$V_{CEO}$	collector-emitter voltage	open base	–	50	V
$V_{EBO}$	emitter-base voltage	open collector	–	5	V
$I_C$	collector current (DC)		–	100	mA
$I_{CM}$	peak collector current		–	200	mA
$I_{BM}$	peak base current		–	200	mA
$P_{tot}$	total power dissipation	$T_{amb} \leq 25\text{ }^\circ\text{C}$ note 1 note 2	–	250 430	mW mW
$T_{stg}$	storage temperature		–65	+150	$^\circ\text{C}$
$T_j$	junction temperature		–	150	$^\circ\text{C}$
$T_{amb}$	operating ambient temperature		–65	+150	$^\circ\text{C}$

## Notes

1. Refer to SOT883 standard mounting conditions (footprint), FR4 with 60  $\mu\text{m}$  copper strip line.
2. Device mounted on a FR4 printed-circuit board, single-sided copper, mounting pad for collector 1  $\text{cm}^2$ .

## NPN general purpose transistors

## 2PC4617M series

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	in free air		
		note 1	500	K/W
		note 2	290	K/W

## Notes

1. Refer to SOT883 standard mounting conditions (footprint), FR4 with 60  $\mu\text{m}$  copper strip line.
2. Device mounted on a FR4 printed-circuit board, single-sided copper, mounting pad for collector 1  $\text{cm}^2$ .

## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$I_{CBO}$	collector-base cut-off current	$V_{CB} = 30\text{ V}; I_E = 0$	–	100	nA
		$V_{CB} = 30\text{ V}; I_E = 0; T_j = 150\text{ }^\circ\text{C}$	–	5	$\mu\text{A}$
$I_{EBO}$	emitter-base cut-off current	$V_{EB} = 4\text{ V}; I_C = 0$	–	100	nA
$h_{FE}$	DC current gain 2PC4617QM 2PC4617RM 2PC4617SM	$V_{CE} = 6\text{ V}; I_C = 1\text{ mA}$			
			120	270	
			180	390	
			270	560	
$V_{CEsat}$	collector-emitter saturation voltage	$I_C = 50\text{ mA}; I_B = 5\text{ mA};$ note 1	–	200	mV
$C_c$	collector capacitance	$I_E = i_e = 0; V_{CB} = 12\text{ V}; f = 1\text{ MHz}$	–	1.5	pF
$f_T$	transition frequency	$V_{CE} = 12\text{ V}; I_C = 2\text{ mA};$ $f = 100\text{ MHz}$	100	–	MHz

## Note

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

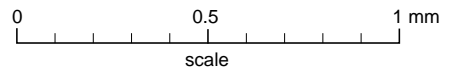
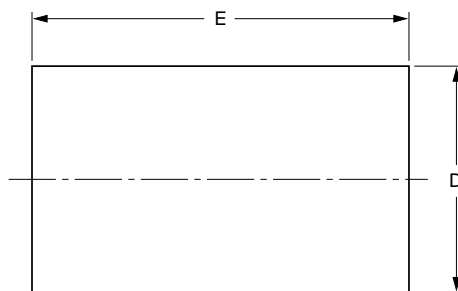
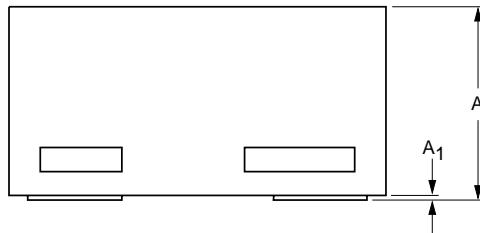
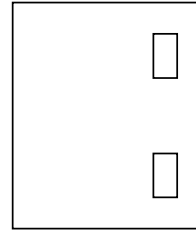
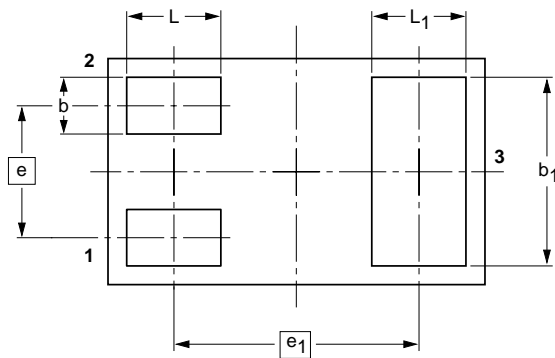
NPN general purpose transistors

2PC4617M series

PACKAGE OUTLINE

Leadless ultra small plastic package; 3 solder lands; body 1.0 x 0.6 x 0.5 mm

SOT883



DIMENSIONS (mm are the original dimensions)

UNIT	A <sup>(1)</sup>	A <sub>1</sub> max.	b	b <sub>1</sub>	D	E	e	e <sub>1</sub>	L	L <sub>1</sub>
mm	0.50 0.46	0.03	0.20 0.12	0.55 0.47	0.62 0.55	1.02 0.95	0.35	0.65	0.30 0.22	0.30 0.22

Note

1. Including plating thickness

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	JEITA			
SOT883			SC-101			03-02-05 03-04-03

## NPN general purpose transistors

## 2PC4617M series

## DATA SHEET STATUS

LEVEL	DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)(3)</sup>	DEFINITION
I	Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
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