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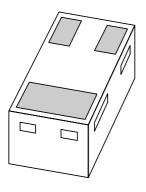
If you have any questions related to the data sheet, please contact our nearest sales office via e-mail or telephone (details via **salesaddresses@nexperia.com**). Thank you for your cooperation and understanding,

Kind regards,

Team Nexperia

## DISCRETE SEMICONDUCTORS

## DATA SHEET



# **2PA1774M series**PNP general purpose transistor

Product data sheet 2004 Feb 19



## PNP general purpose transistor

#### 2PA1774M series

#### **FEATURES**

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

#### **APPLICATIONS**

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

#### **DESCRIPTION**

PNP general purpose transistor in a SOT883 leadless ultra small plastic package.

NPN complement: 2PC4617M series.

#### **MARKING**

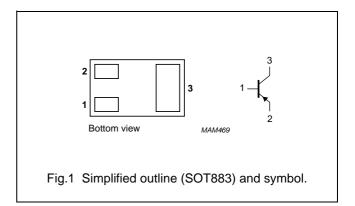
TYPE NUMBER	MARKING CODE
2PA1774QM	PB
2PA1774RM	PA
2PA1774SM	PC

#### **QUICK REFERENCE DATA**

SYMBOL	PARAMETER	MAX.	UNIT
$V_{CEO}$	collector-emitter voltage	-40	V
I <sub>C</sub>	collector current (DC)	-100	mA
I <sub>CM</sub>	peak collector current	-200	mA

#### **PINNING**

PIN	DESCRIPTION
1	base
2	emitter
3	collector



#### **ORDERING INFORMATION**

TYPE	PACKAGE		
NUMBER	NAME	DESCRIPTION	VERSION
2PA1774QM	_	leadless ultra small plastic package; 3 solder lands; body 1.0 x 0.6 x 0.5 mm	SOT883
2PA1774RM	_		
2PA1774SM	_		

## PNP general purpose transistor

#### 2PA1774M series

#### LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V <sub>CBO</sub>	collector-base voltage	open emitter	_	-50	V
$V_{CEO}$	collector-emitter voltage	open base	_	-40	V
$V_{EBO}$	emitter-base voltage	open collector	_	-5	V
I <sub>C</sub>	collector current (DC)		_	-100	mA
$I_{CM}$	peak collector current		_	-200	mA
I <sub>BM</sub>	peak base current		_	-100	mA
P <sub>tot</sub>	total power dissipation	T <sub>amb</sub> ≤ 25 °C			
		note 1	_	250	mW
		note 2	_	430	mW
T <sub>stg</sub>	storage temperature		-65	+150	°C
Tj	junction temperature		_	150	°C
T <sub>amb</sub>	operating ambient temperature		-65	+150	°C

#### **Notes**

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

#### THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R <sub>th(j-a)</sub>	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 μm copper strip line.
- 2. Device mounted on a FR4 printed-circuit board, single-sided copper, mounting pad for collector 1 cm<sup>2</sup>.

## PNP general purpose transistor

## 2PA1774M series

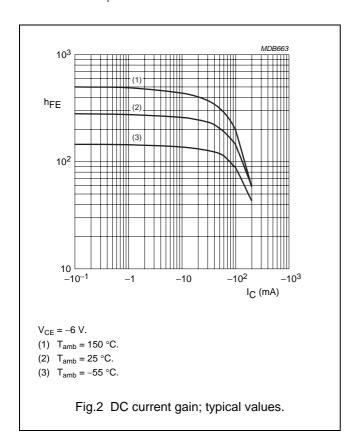
#### **CHARACTERISTICS**

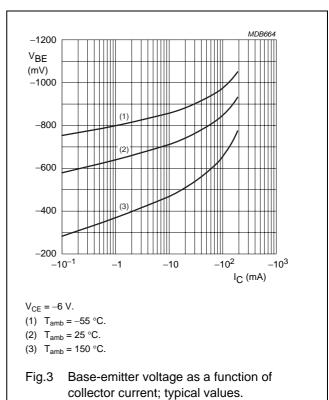
 $T_{amb}$  = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I <sub>CBO</sub>	collector-base cut-off current	$V_{CB} = -30 \text{ V}; I_{E} = 0$	_	-100	nA
		$V_{CB} = -30 \text{ V}; I_E = 0; T_j = 150 ^{\circ}\text{C}$	_	-5	μΑ
I <sub>EBO</sub>	emitter-base cut-off current	$V_{EB} = -4 \text{ V}; I_C = 0$	_	-100	nA
h <sub>FE</sub>	DC current gain	$V_{CE} = -6 \text{ V}; I_{C} = -1 \text{ mA}$			
	2PA1774QM		120	270	
	2PA1774RM		180	390	
	2PA1774SM		270	560	
V <sub>CEsat</sub>	collector-emitter saturation voltage	$I_C = -50 \text{ mA}$ ; $I_B = -5 \text{ mA}$ ; note 1	_	-200	mV
C <sub>c</sub>	collector capacitance	$I_E = i_e = 0$ ; $V_{CB} = -12 \text{ V}$ ; $f = 1 \text{ MHz}$	_	2.2	pF
f <sub>T</sub>	transition frequency	$V_{CE} = -12 \text{ V; } I_{C} = -2 \text{ mA;}$ f = 100 MHz	100	_	MHz

#### Note

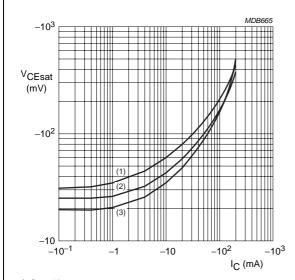
1. Pulse test:  $t_p \le 300~\mu s;~\delta \le 0.02.$ 





## PNP general purpose transistor

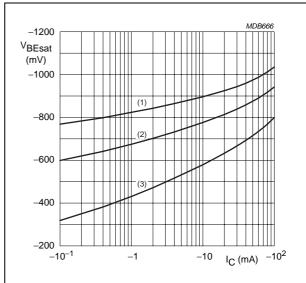
### 2PA1774M series



 $I_{\rm C}/I_{\rm B} = 10$ .

- (1)  $T_{amb} = 150 \, ^{\circ}C$ .
- (2)  $T_{amb} = 25 \, ^{\circ}C$ .
- (3)  $T_{amb} = -55$  °C.

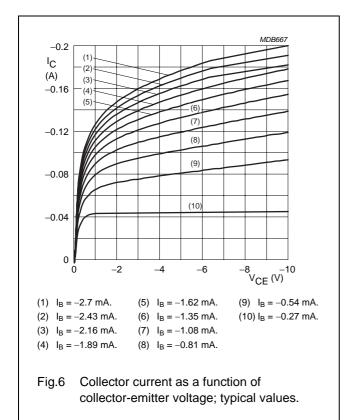
Fig.4 Collector-emitter saturation voltage as a function of collector current; typical values.

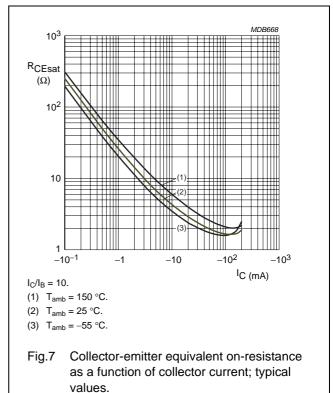


 $I_{\rm C}/I_{\rm B} = 10.$ 

- (1)  $T_{amb} = -55 \, ^{\circ}C$ .
- (2)  $T_{amb} = 25 \, ^{\circ}C$ .
- (3)  $T_{amb} = 150 \, ^{\circ}C$ .

Fig.5 Base-emitter saturation voltage as a function of collector current; typical values.





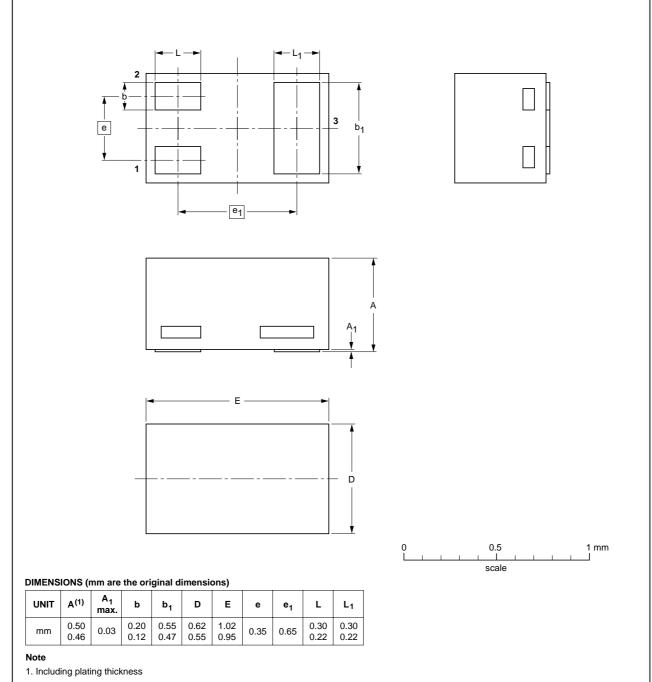
## PNP general purpose transistor

## 2PA1774M series

#### **PACKAGE OUTLINE**

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

**SOT883** 



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

## PNP general purpose transistor

#### 2PA1774M series

#### **DATA SHEET STATUS**

DOCUMENT STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

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#### **Contact information**

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#### Офис по работе с юридическими лицами:

105318, г. Москва, ул. Щербаковская д. 3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru moschip.ru\_6 moschip.ru\_4 moschip.ru\_9