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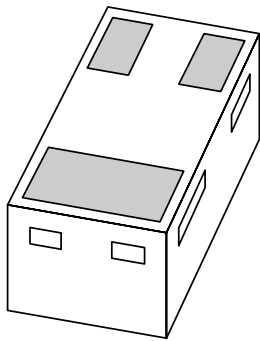
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If you have any questions related to the data sheet, please contact our nearest sales office via e-mail or telephone (details via **[salesaddresses@nexperia.com](mailto:salesaddresses@nexperia.com)**). Thank you for your cooperation and understanding,

Kind regards,

Team Nexperia

# 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 × 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

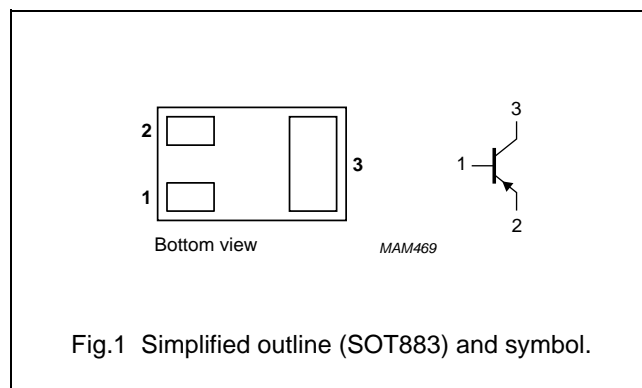
TYPE NUMBER	MARKING CODE
2PA1774QM	PB
2PA1774RM	PA
2PA1774SM	PC

## QUICK REFERENCE DATA

SYMBOL	PARAMETER	MAX.	UNIT
$V_{CEO}$	collector-emitter voltage	−40	V
$I_C$	collector current (DC)	−100	mA
$I_{CM}$	peak collector current	−200	mA

## PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector



## ORDERING INFORMATION

TYPE NUMBER	PACKAGE		
	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
$V_{CBO}$	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
$I_C$	collector current (DC)		–	–100	mA
$I_{CM}$	peak collector current		–	–200	mA
$I_{BM}$	peak base current		–	–100	mA
$P_{tot}$	total power dissipation	$T_{amb} \leq 25\text{ °C}$ note 1 note 2	– –	250 430	mW mW
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	150	°C
$T_{amb}$	operating ambient temperature		–65	+150	°C

**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>.

**THERMAL CHARACTERISTICS**

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

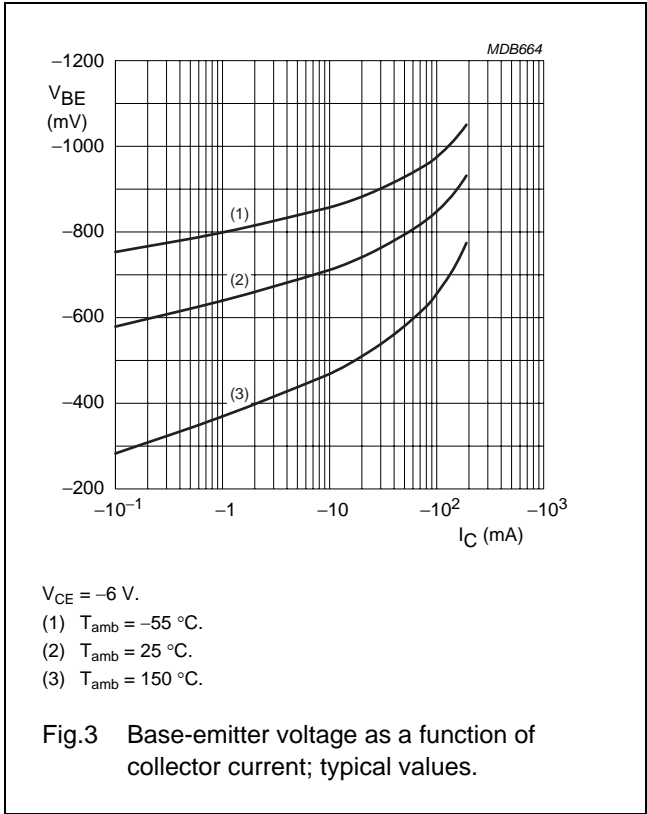
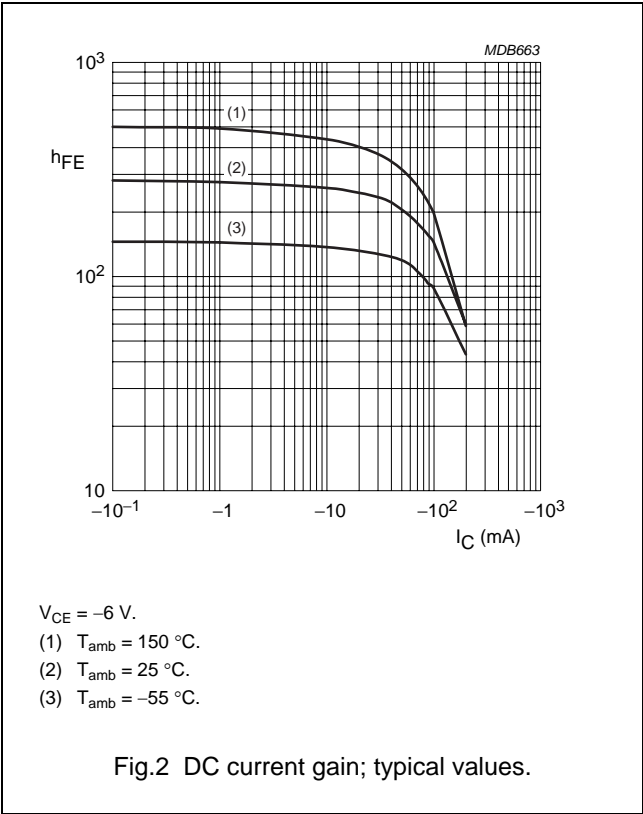
CHARACTERISTICS

T<sub>amb</sub> = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I <sub>CBO</sub>	collector-base cut-off current	V <sub>CB</sub> = -30 V; I <sub>E</sub> = 0	–	–100	nA
		V <sub>CB</sub> = -30 V; I <sub>E</sub> = 0; T <sub>j</sub> = 150 °C	–	–5	μA
I <sub>EBO</sub>	emitter-base cut-off current	V <sub>EB</sub> = -4 V; I <sub>C</sub> = 0	–	–100	nA
h <sub>FE</sub>	DC current gain	V <sub>CE</sub> = -6 V; I <sub>C</sub> = -1 mA			
V <sub>CEsat</sub>	collector-emitter saturation voltage	I <sub>C</sub> = -50 mA; I <sub>B</sub> = -5 mA; note 1	–	–200	mV
C <sub>c</sub>	collector capacitance	I <sub>E</sub> = i <sub>e</sub> = 0; V <sub>CB</sub> = -12 V; f = 1 MHz	–	2.2	pF
f <sub>T</sub>	transition frequency	V <sub>CE</sub> = -12 V; I <sub>C</sub> = -2 mA; f = 100 MHz	100	–	MHz

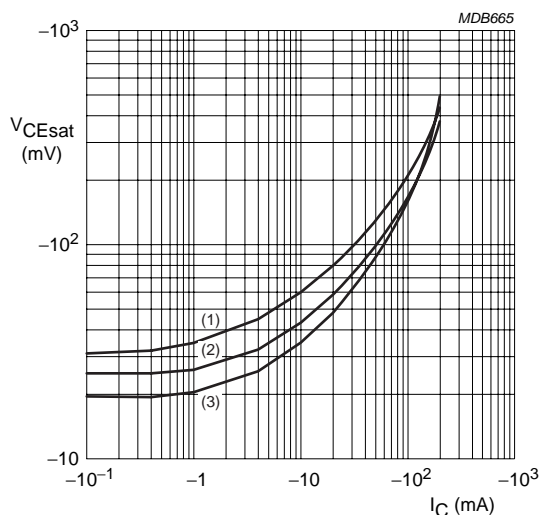
Note

1. Pulse test: t<sub>p</sub> ≤ 300 μs; δ ≤ 0.02.



## PNP general purpose transistor

## 2PA1774M series



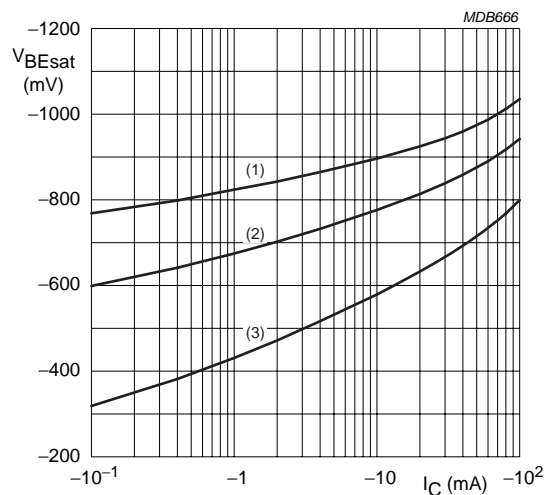
$I_C/I_B = 10$ .

(1)  $T_{amb} = 150\text{ }^{\circ}\text{C}$ .

(2)  $T_{amb} = 25\text{ }^{\circ}\text{C}$ .

(3)  $T_{amb} = -55\text{ }^{\circ}\text{C}$ .

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



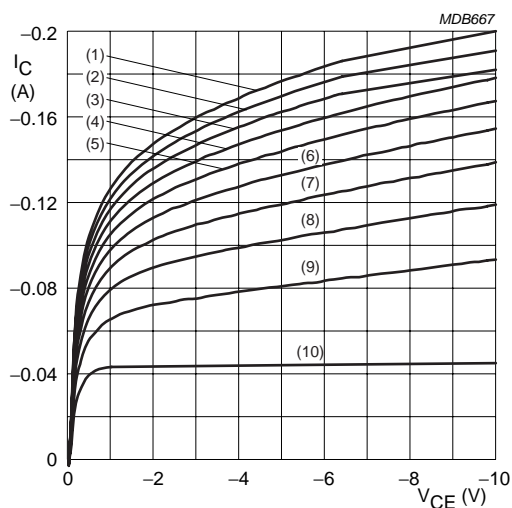
$I_C/I_B = 10$ .

(1)  $T_{amb} = -55\text{ }^{\circ}\text{C}$ .

(2)  $T_{amb} = 25\text{ }^{\circ}\text{C}$ .

(3)  $T_{amb} = 150\text{ }^{\circ}\text{C}$ .

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



(1)  $I_B = -2.7\text{ mA}$ .

(5)  $I_B = -1.62\text{ mA}$ .

(9)  $I_B = -0.54\text{ mA}$ .

(2)  $I_B = -2.43\text{ mA}$ .

(6)  $I_B = -1.35\text{ mA}$ .

(10)  $I_B = -0.27\text{ mA}$ .

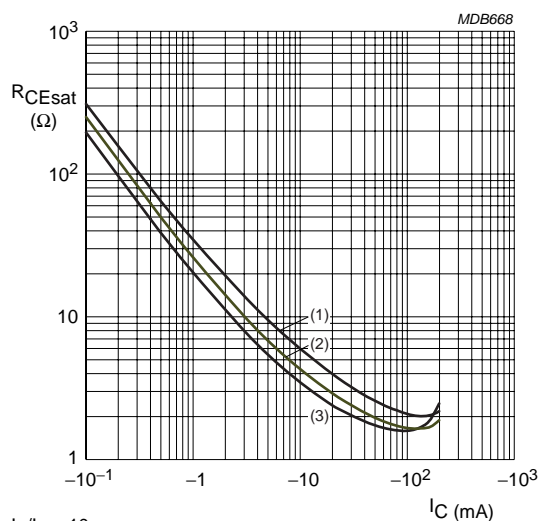
(3)  $I_B = -2.16\text{ mA}$ .

(7)  $I_B = -1.08\text{ mA}$ .

(4)  $I_B = -1.89\text{ mA}$ .

(8)  $I_B = -0.81\text{ mA}$ .

Fig.6 Collector current as a function of collector-emitter voltage; typical values.



$I_C/I_B = 10$ .

(1)  $T_{amb} = 150\text{ }^{\circ}\text{C}$ .

(2)  $T_{amb} = 25\text{ }^{\circ}\text{C}$ .

(3)  $T_{amb} = -55\text{ }^{\circ}\text{C}$ .

Fig.7 Collector-emitter equivalent on-resistance as a function of collector current; typical values.

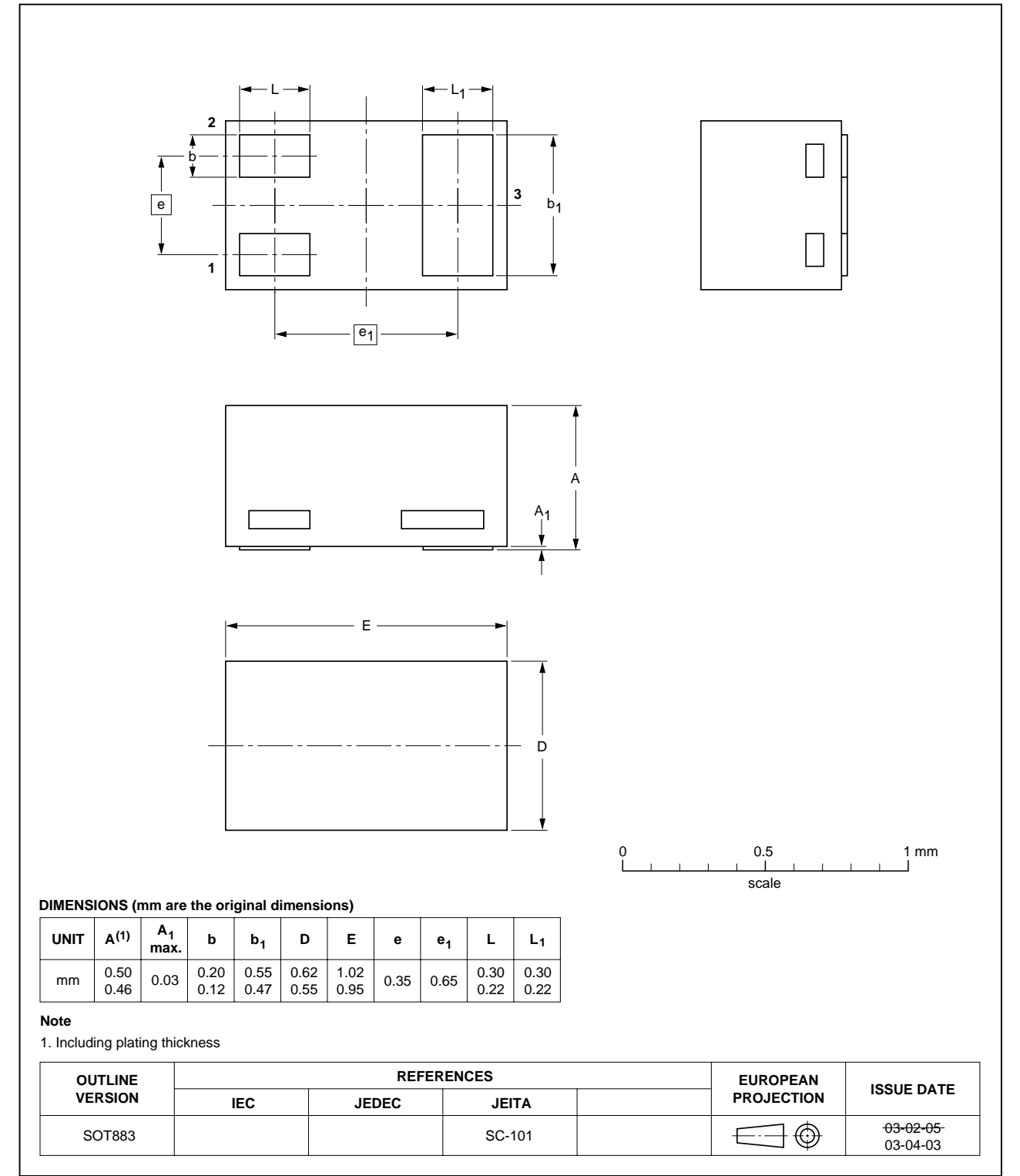
PNP general purpose transistor

2PA1774M series

PACKAGE OUTLINE

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

SOT883



## 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.

## Notes

1. Please consult the most recently issued document before initiating or completing a design.
2. The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL <http://www.nxp.com>.

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# ***NXP Semiconductors***

## **Customer notification**

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## **Contact information**

For additional information please visit: **<http://www.nxp.com>**

For sales offices addresses send e-mail to: **[salesaddresses@nxp.com](mailto:salesaddresses@nxp.com)**

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