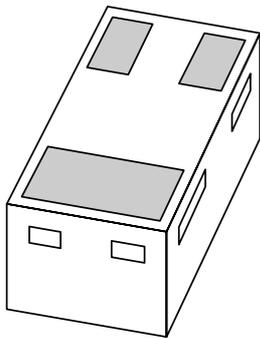


# DATA SHEET



## **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

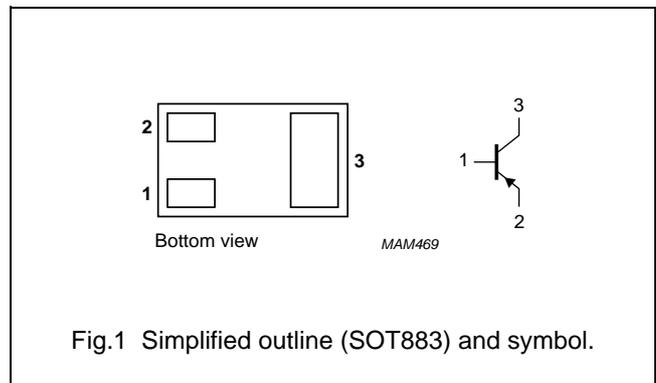


Fig.1 Simplified outline (SOT883) and symbol.

### 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 <sub>CBO</sub>	collector-base voltage	open emitter	–	–50	V
V <sub>CEO</sub>	collector-emitter voltage	open base	–	–40	V
V <sub>EBO</sub>	emitter-base voltage	open collector	–	–5	V
I <sub>C</sub>	collector current (DC)		–	–100	mA
I <sub>CM</sub>	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 note 2	– –	250 430	mW mW
T <sub>stg</sub>	storage temperature		–65	+150	°C
T <sub>j</sub>	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 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 <sub>th(j-a)</sub>	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

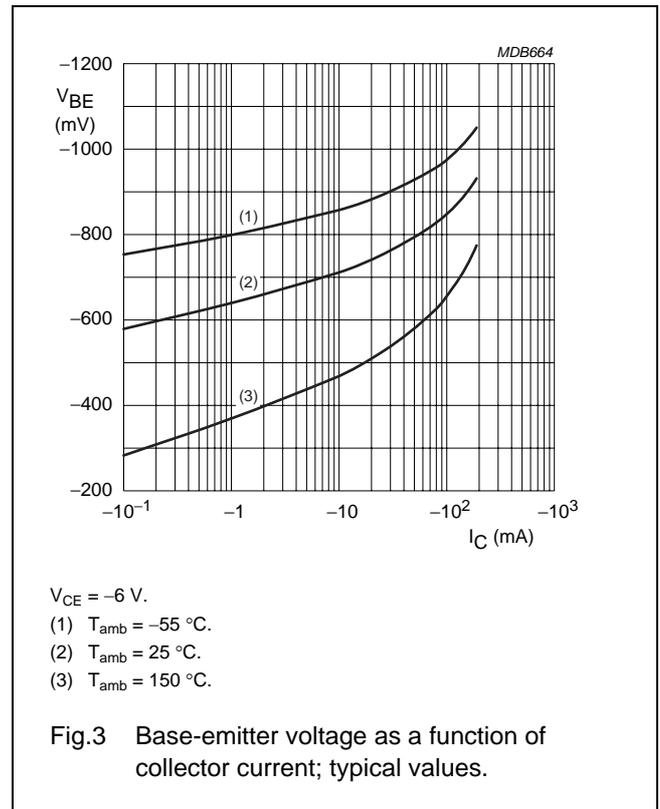
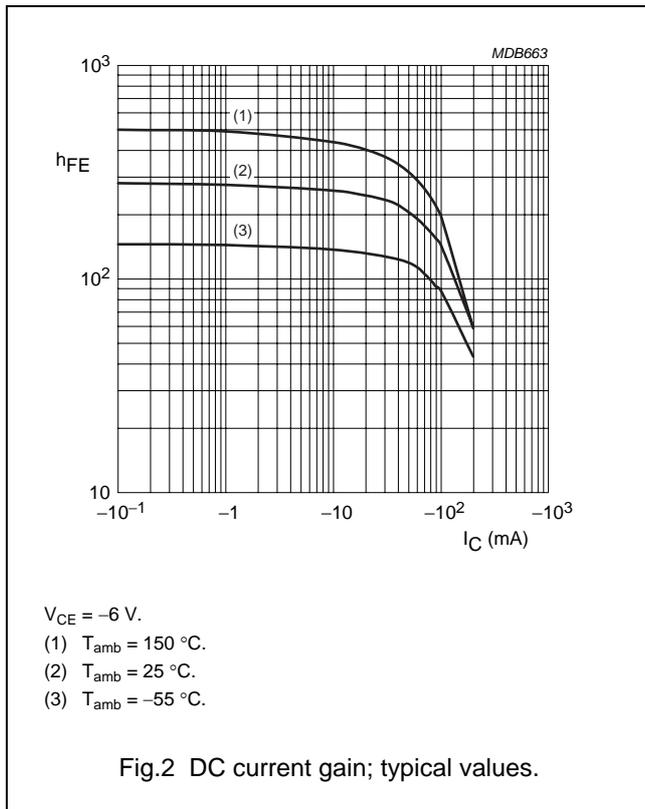
**CHARACTERISTICS**

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 2PA1774QM 2PA1774RM 2PA1774SM	V <sub>CE</sub> = -6 V; I <sub>C</sub> = -1 mA			
				120	270
				180	390
				270	560
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

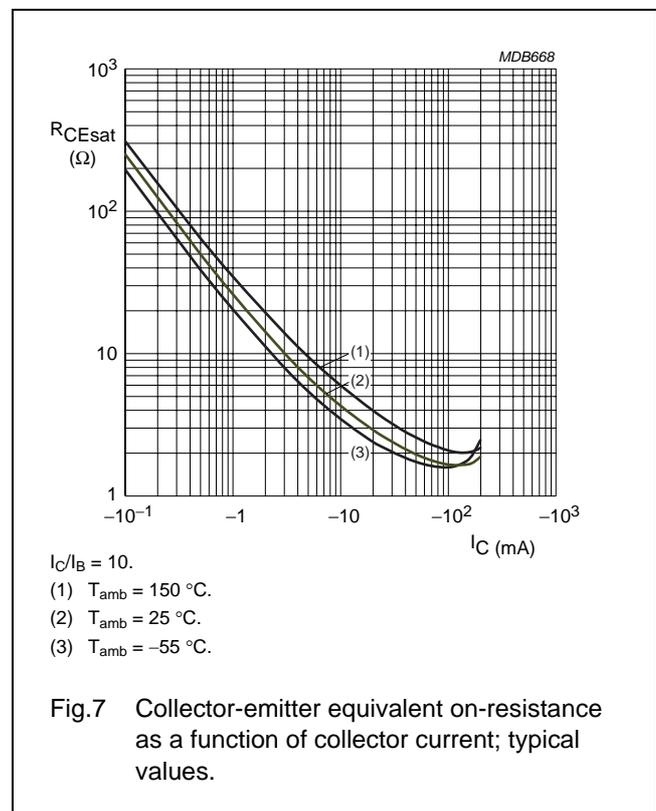
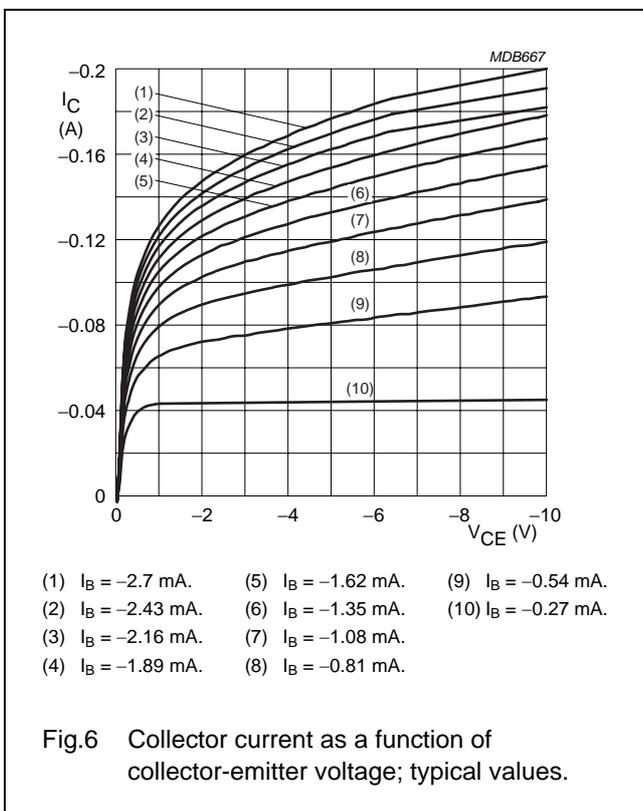
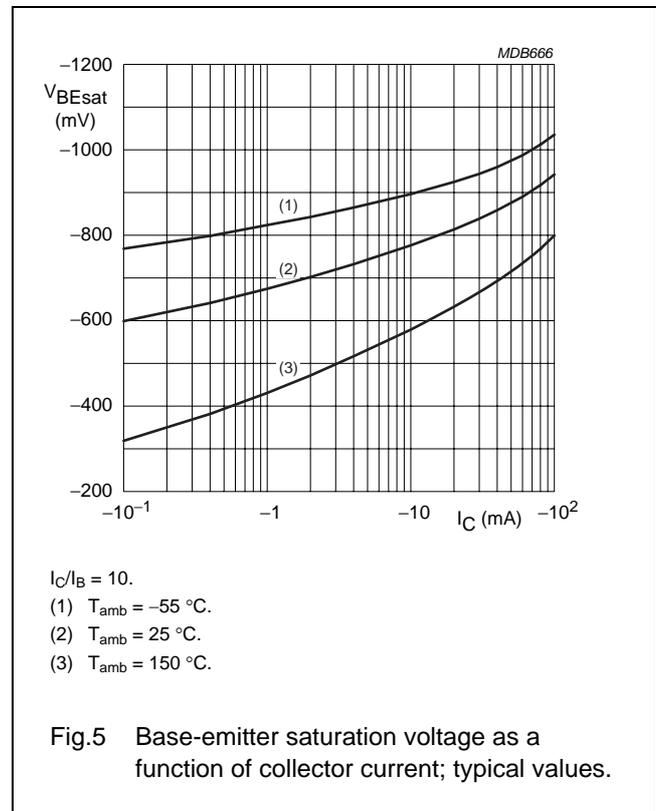
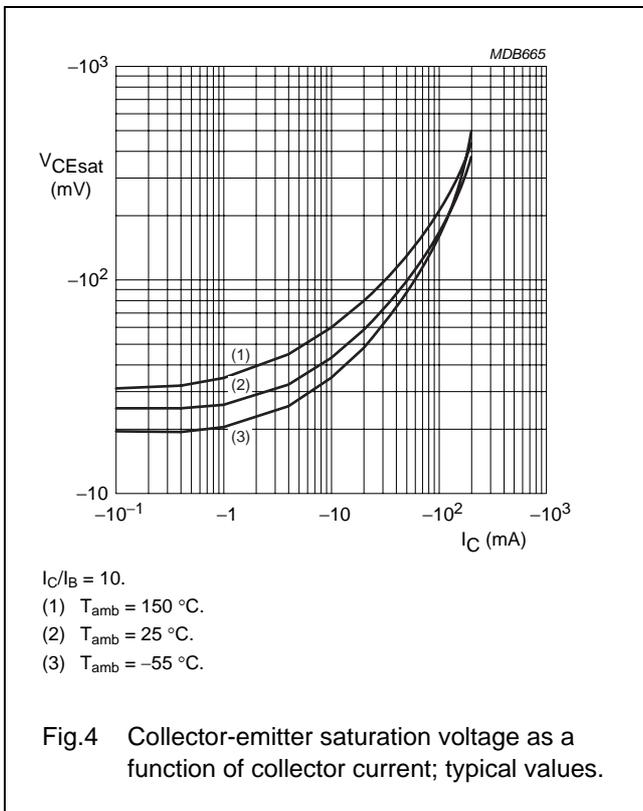
**Note**

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



PNP general purpose transistor

2PA1774M series



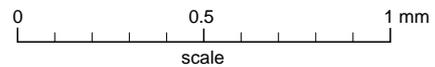
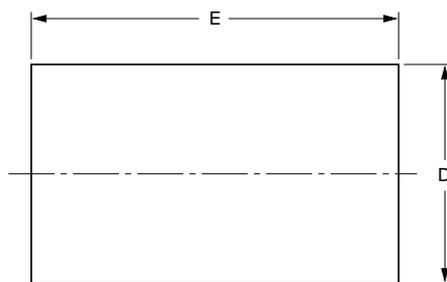
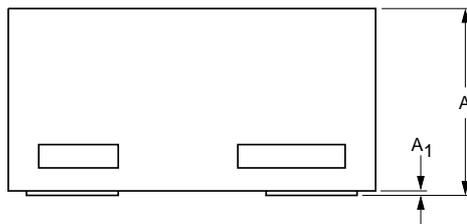
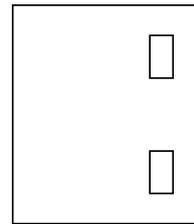
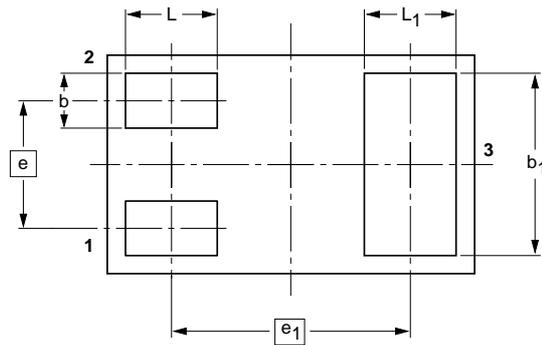
PNP general purpose transistor

2PA1774M series

PACKAGE OUTLINE

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

SOT883



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

## 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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