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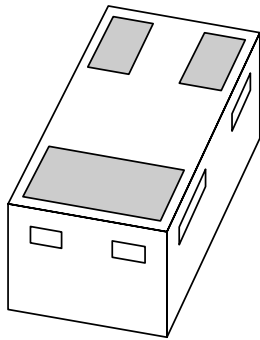
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Kind regards,

Team Nexperia

DATA SHEET



2PC4617M series NPN general purpose transistors

Product data sheet

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

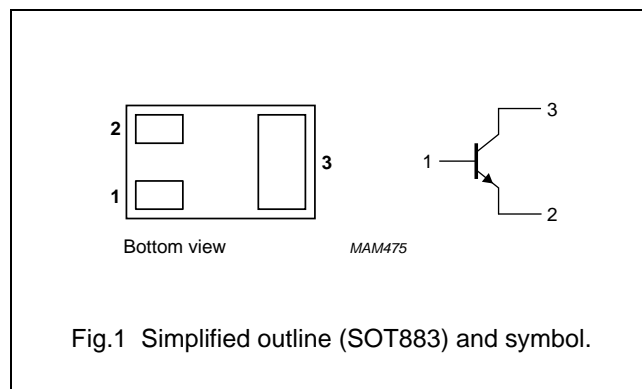
| TYPE NUMBER | MARKING CODE |
|-------------|--------------|
| 2PC4617QM | D7 |
| 2PC4617RM | D8 |
| 2PC4617SM | D9 |

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 | $T_{amb} \leq 25\text{ °C}$ 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 cm².

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 note 2 | 500 290 | K/W K/W |

Notes

1. Refer to SOT883 standard mounting conditions (footprint), FR4 with 60 μ m copper strip line.
2. Device mounted on a FR4 printed-circuit board, single-sided copper, mounting pad for collector 1 cm².

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 | μ 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 | $I_C = 50\text{ mA}; I_B = 5\text{ mA}; \text{note 1}$ | – | 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: $t_p \leq 300\text{ }\mu\text{s}; \delta \leq 0.02$.

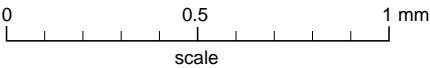
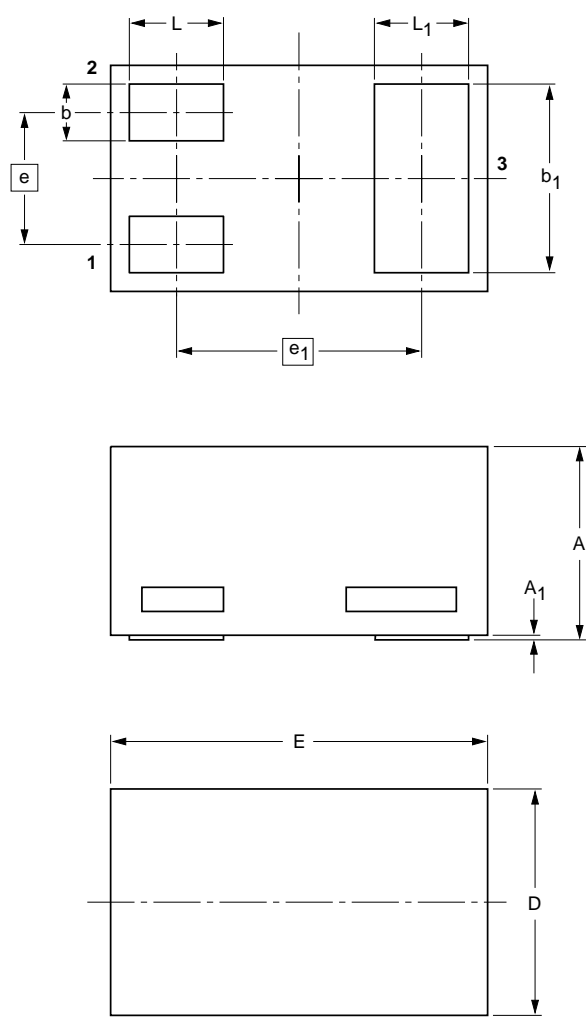
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PACKAGE OUTLINE

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 ⁽¹⁾ | A ₁ max. | b | b ₁ | D | E | e | e ₁ | L | L ₁ |
|------|------------------|------------------------|--------------|----------------|--------------|--------------|------|----------------|--------------|----------------|
| 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

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DATA SHEET STATUS

| DOCUMENT STATUS ⁽¹⁾ | PRODUCT STATUS ⁽²⁾ | 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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NXP Semiconductors

Customer notification

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

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