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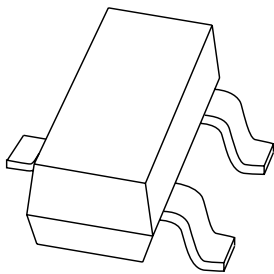
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Kind regards,

Team Nexperia

DATA SHEET



PMMT591A PNP BISS transistor

Product data sheet
Supersedes data of 2001 Jun 11

2004 Jan 13

PNP BISS transistor

PMMT591A

FEATURES

- High current (max. 1 A)
- Low collector-emitter saturation voltage ensures reduced power consumption.

APPLICATIONS

- Battery powered units where high current and low power consumption are important.

DESCRIPTION

PNP BISS (Breakthrough In Small Signal) transistor in a SOT23 plastic package. NPN complement: PMMT491A.

MARKING

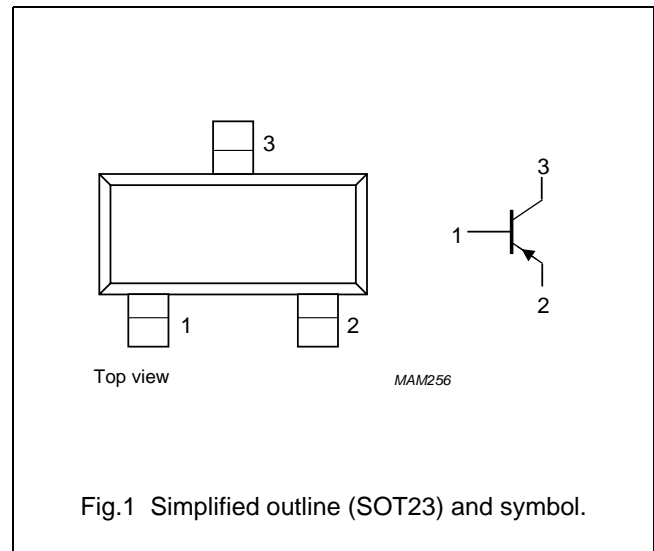
| TYPE NUMBER | MARKING CODE ⁽¹⁾ |
|-------------|-----------------------------|
| PMMT591A | 9B* |

Note

- * = p : Made in Hong Kong.
 * = t : Made in Malaysia.
 * = W : Made in China.

PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | base |
| 2 | emitter |
| 3 | collector |



ORDERING INFORMATION

| TYPE NUMBER | PACKAGE | | |
|-------------|---------|--|---------|
| | NAME | DESCRIPTION | VERSION |
| PMMT591A | – | plastic surface mounted package; 3 leads | SOT23 |

LIMITING VALUES

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

| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|-----------|-------------------------------|--------------------------------------|------|------|------|
| V_{CBO} | collector-base voltage | open emitter | – | –40 | V |
| V_{CEO} | collector-emitter voltage | open base | – | –40 | V |
| V_{EBO} | emitter-base voltage | open collector | – | –5 | V |
| I_C | collector current (DC) | | – | –1 | A |
| I_{CM} | peak collector current | | – | –2 | A |
| I_{BM} | peak base current | | – | –1 | A |
| P_{tot} | total power dissipation | $T_{amb} \leq 25\text{ °C}$; note 1 | – | 250 | mW |
| T_{stg} | storage temperature | | –65 | +150 | °C |
| T_j | junction temperature | | – | 150 | °C |
| T_{amb} | operating ambient temperature | | –65 | +150 | °C |

Note

1. Transistor mounted on an FR4 printed-circuit board.

PNP BISS transistor

PMMT591A

THERMAL CHARACTERISTICS

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

Note

1. Transistor mounted on an FR4 printed-circuit board.

CHARACTERISTICS

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

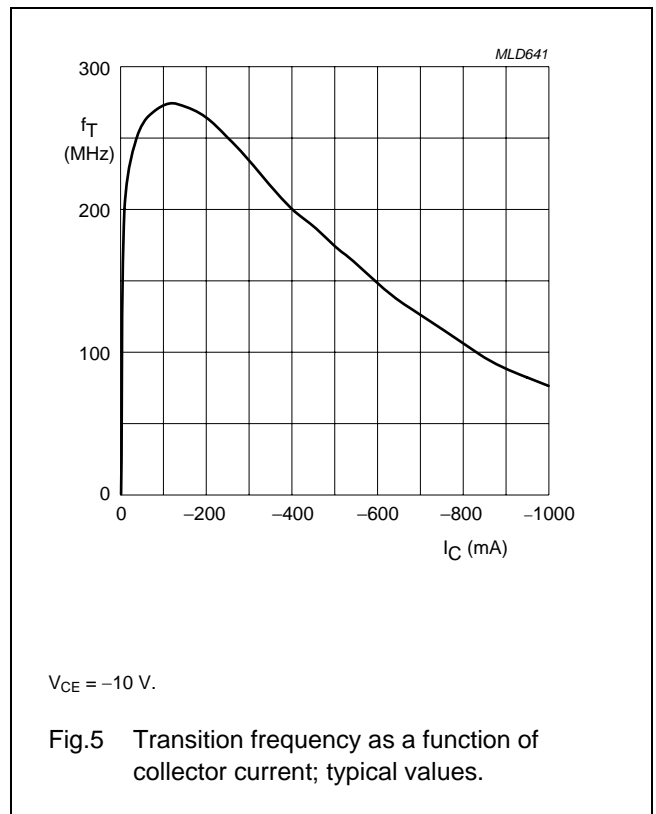
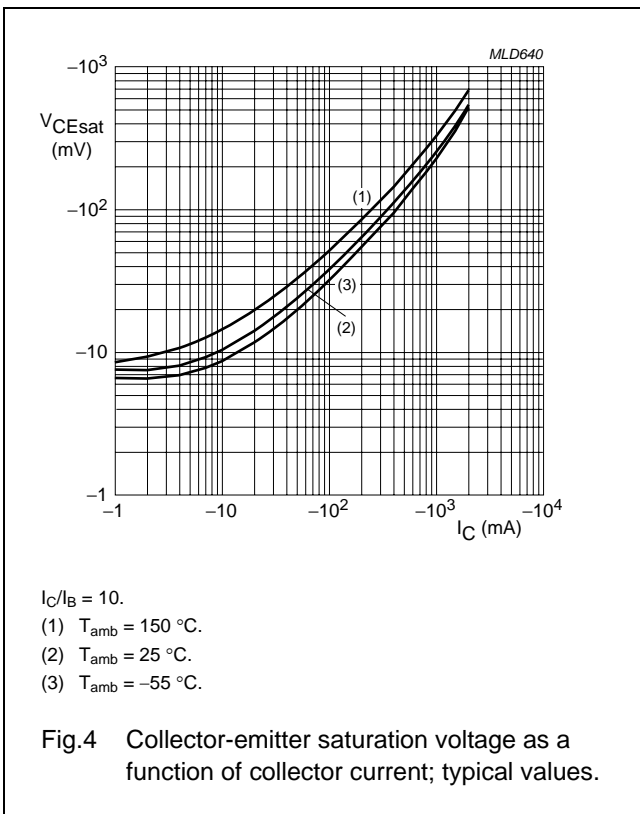
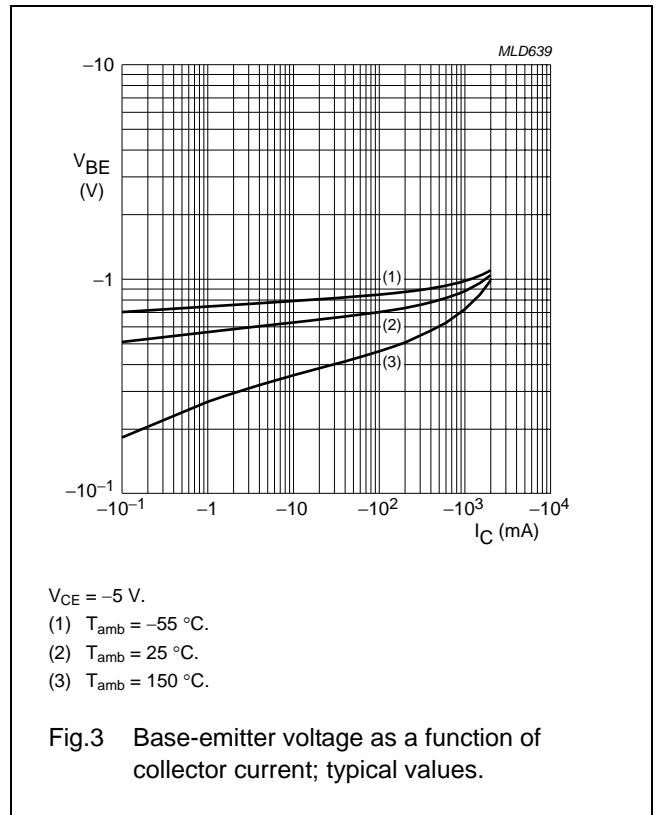
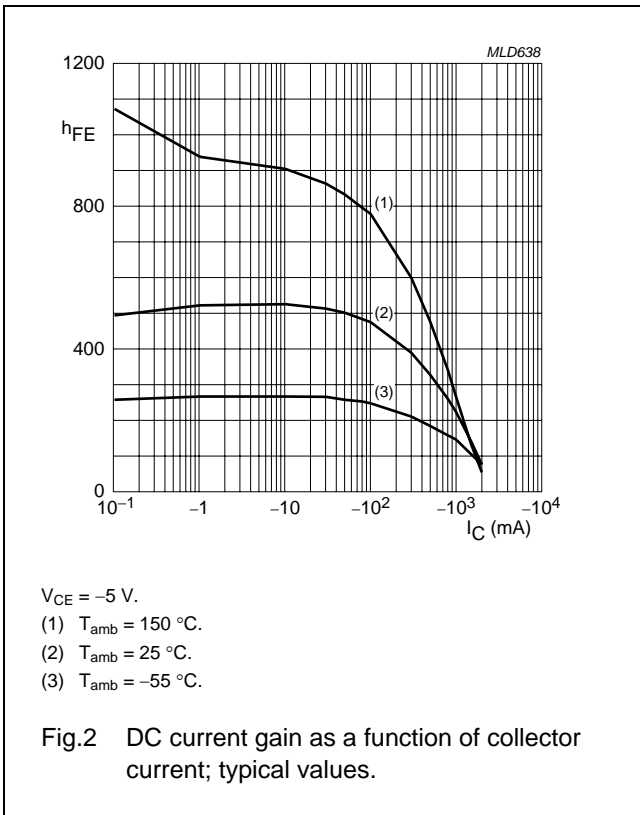
| SYMBOL | PARAMETER | CONDITIONS | MIN. | MAX. | UNIT |
|-------------|--------------------------------------|--|--------------------------|----------------------|----------------|
| I_{CBO} | collector cut-off current | $I_E = 0; V_{CB} = -30\text{ V}$ | – | –100 | nA |
| I_{CEO} | collector cut-off current | $I_B = 0; V_{CE} = -30\text{ V}$ | – | –100 | nA |
| I_{EBO} | emitter cut-off current | $I_C = 0; V_{EB} = -5\text{ V}$ | – | –100 | nA |
| h_{FE} | DC current gain | $V_{CE} = -5\text{ V}$; note 1 $I_C = -1\text{ mA}$ $I_C = -100\text{ mA}$ $I_C = -500\text{ mA}$ $I_C = -1\text{ A}$ | 300 300 250 160 | – 800 – – | |
| V_{CEsat} | collector-emitter saturation voltage | note 1 $I_C = -100\text{ mA}; I_B = -1\text{ mA}$ $I_C = -500\text{ mA}; I_B = -20\text{ mA}$ $I_C = -1\text{ A}; I_B = -100\text{ mA}$ | – – – | –200 –350 –500 | mV mV mV |
| V_{BEsat} | base-emitter saturation voltage | $I_C = -1\text{ A}; I_B = -50\text{ mA}$; note 1 | – | –1.1 | V |
| V_{BE} | base-emitter voltage | $V_{CE} = -5\text{ V}; I_C = -1\text{ A}$; note 1 | – | –1 | V |
| C_c | collector capacitance | $I_E = I_e = 0; V_{CB} = -10\text{ V}; f = 1\text{ MHz}$ | – | 12 | pF |
| f_T | transition frequency | $I_C = -50\text{ mA}; V_{CE} = -10\text{ V}; f = 100\text{ MHz}$ | 150 | – | MHz |

Note

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

PNP BISS transistor

PMMT591A



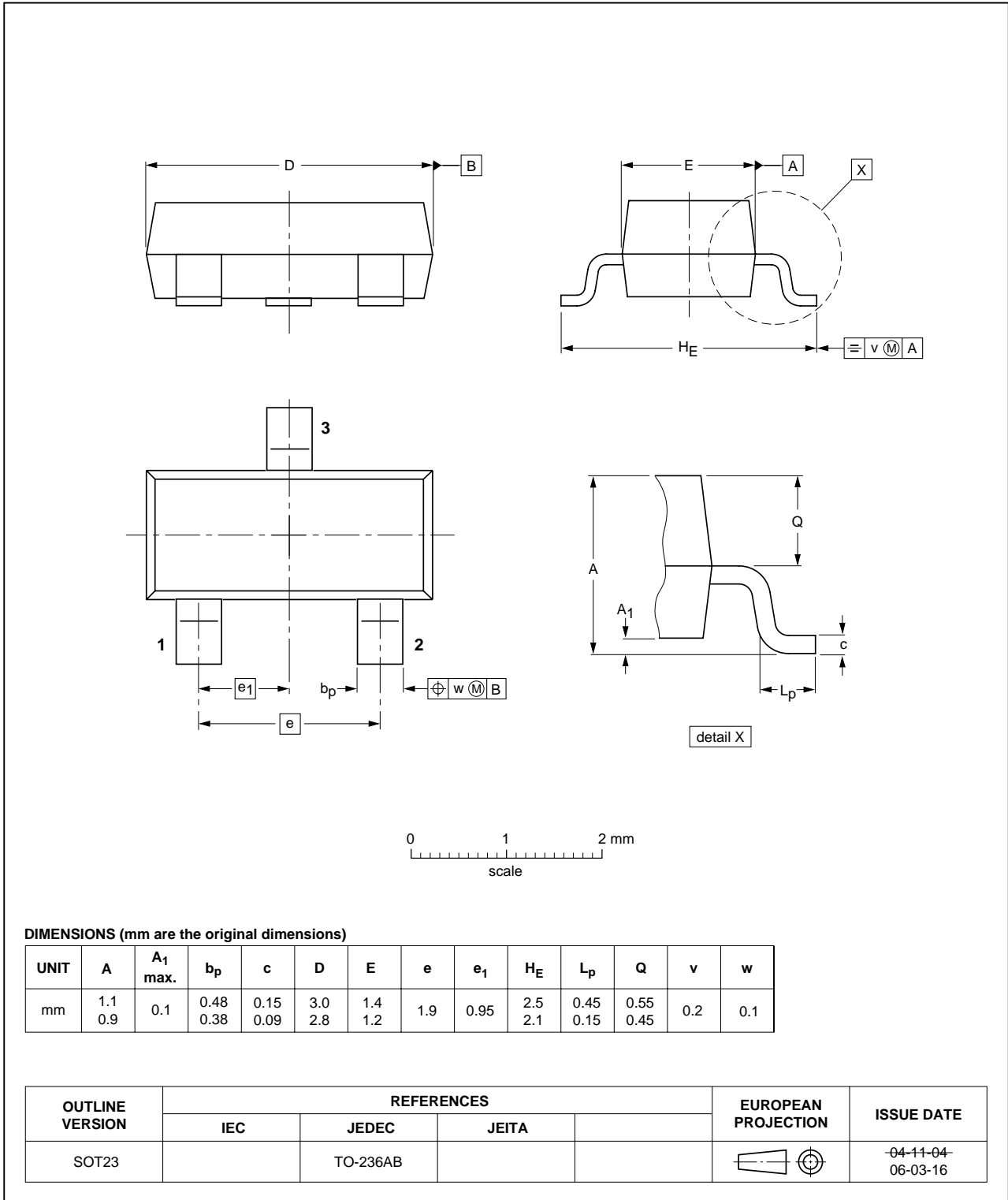
PNP BISS transistor

PMMT591A

PACKAGE OUTLINE

Plastic surface-mounted package; 3 leads

SOT23



PNP BISS transistor

PMMT591A

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

This data sheet was changed to reflect the new company name NXP Semiconductors, including new legal definitions and disclaimers. No changes were made to the technical content, except for package outline drawings which were updated to the latest version.

Contact information

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

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