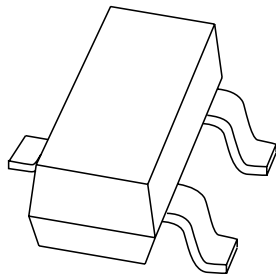


DATA SHEET



PMMT591A PNP BISS transistor

Product specification
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

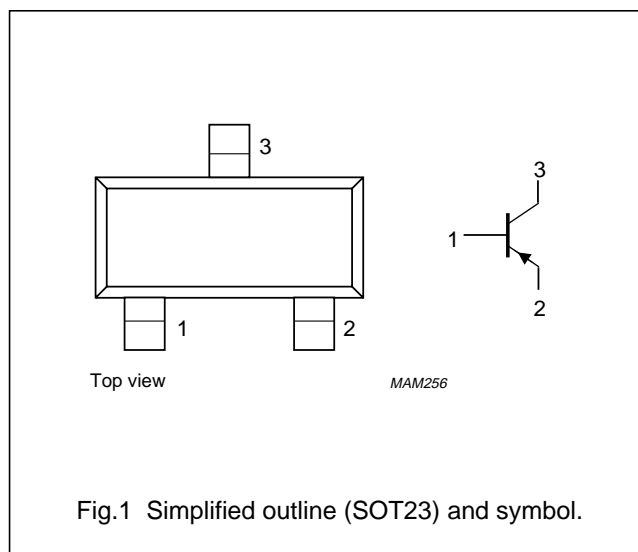


Fig.1 Simplified outline (SOT23) and symbol.

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.

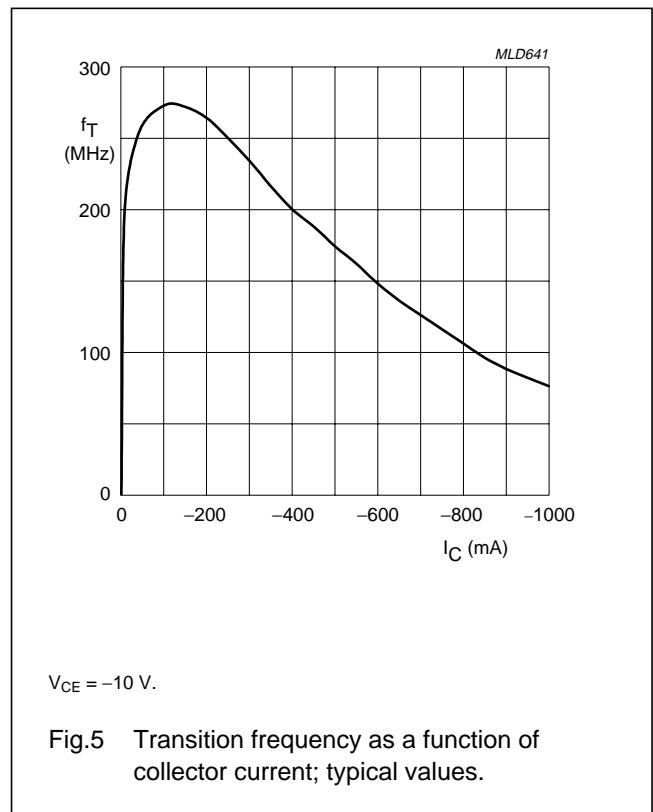
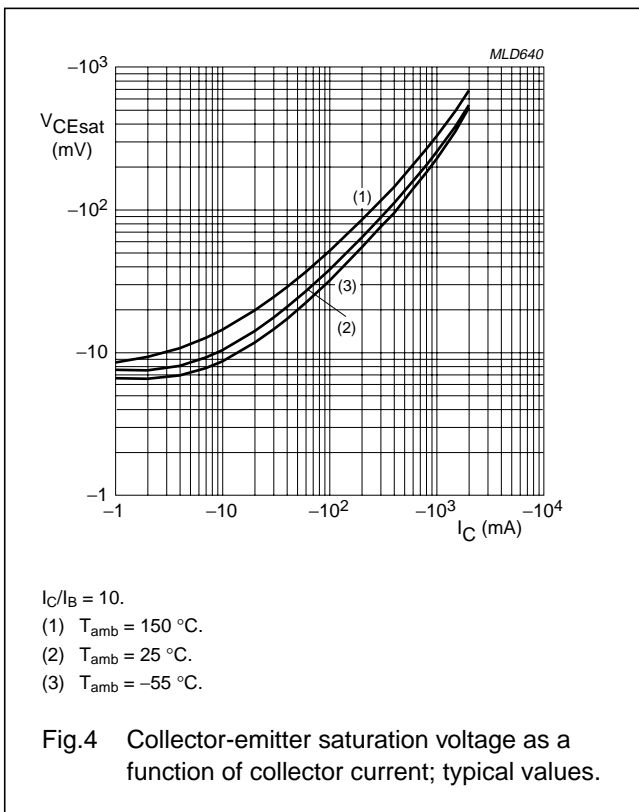
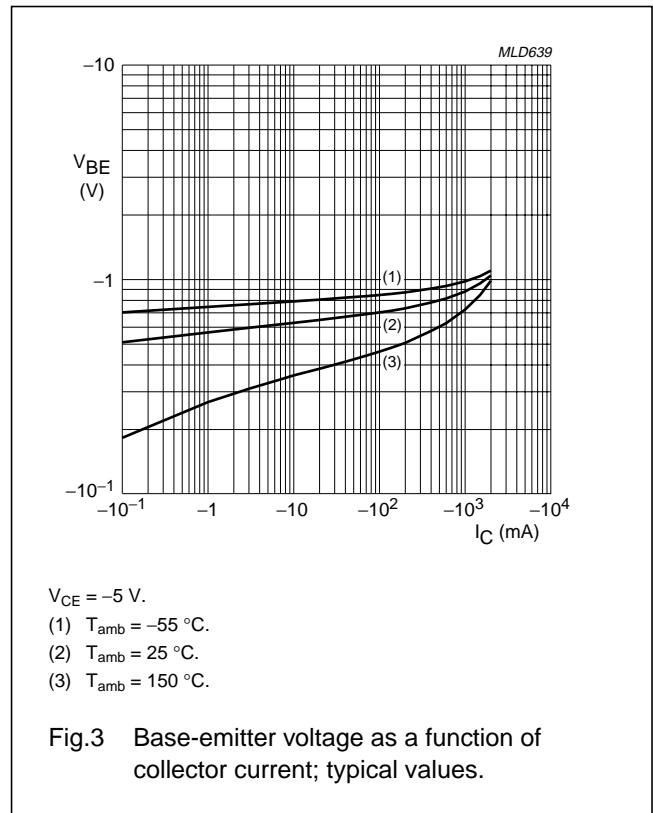
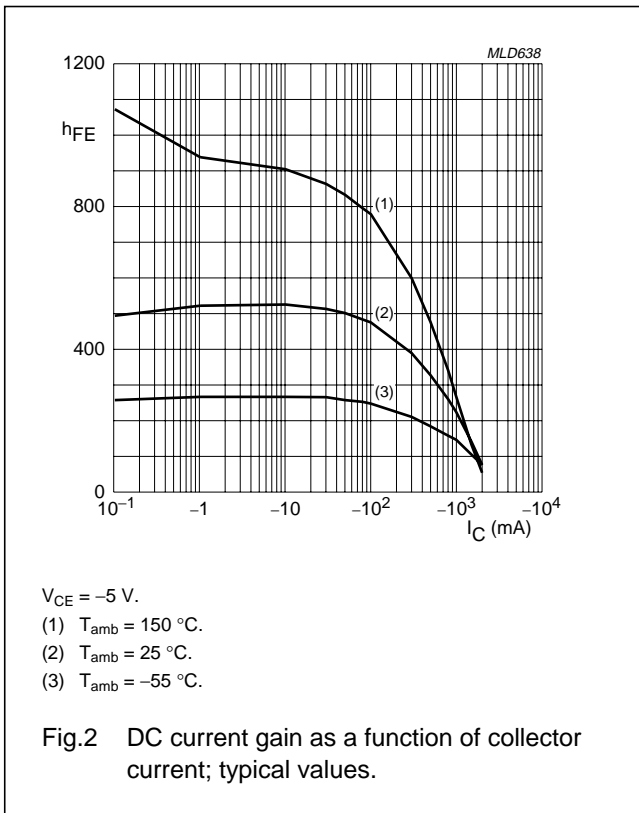
SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector cut-off current	$I_E = 0; V_{CB} = -30\text{ V}$	–	–100	nA
I_{CEO}	collector cut-off current	$I_B = 0; V_{CE} = -30\text{ V}$	–	–100	nA
I_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = -5\text{ V}$	–	–100	nA
h_{FE}	DC current gain	$V_{CE} = -5\text{ V}$; 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



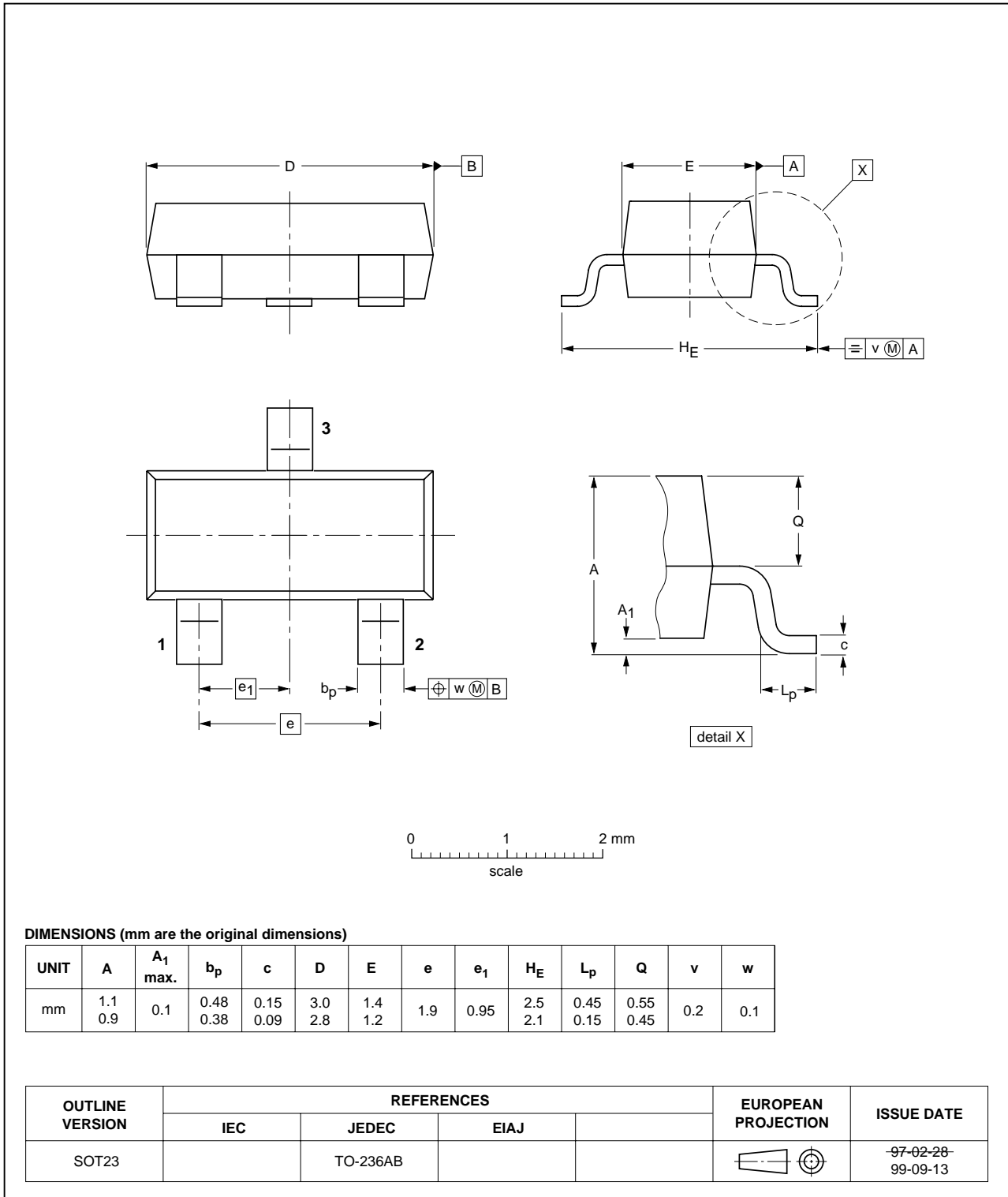
PNP BISS transistor

PMMT591A

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



PNP BISS transistor

PMMT591A

DATA SHEET STATUS

LEVEL	DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾⁽³⁾	DEFINITION
I	Objective data	Development	This data sheet contains data from the objective specification for product development. Philips Semiconductors reserves the right to change the specification in any manner without notice.
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III	Product data	Production	This data sheet contains data from the product specification. Philips Semiconductors reserves the right to make changes at any time in order to improve the design, manufacturing and supply. Relevant changes will be communicated via a Customer Product/Process Change Notification (CPCN).

Notes

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2. The product status of the device(s) described in this data sheet may have changed since this data sheet was published. The latest information is available on the Internet at URL <http://www.semiconductors.philips.com>.
3. For data sheets describing multiple type numbers, the highest-level product status determines the data sheet status.

DEFINITIONS

Short-form specification — The data in a short-form specification is extracted from a full data sheet with the same type number and title. For detailed information see the relevant data sheet or data handbook.

Limiting values definition — Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 60134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics sections of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.

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