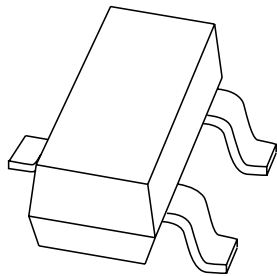


# DATA SHEET



## **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 <sup>(1)</sup>
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

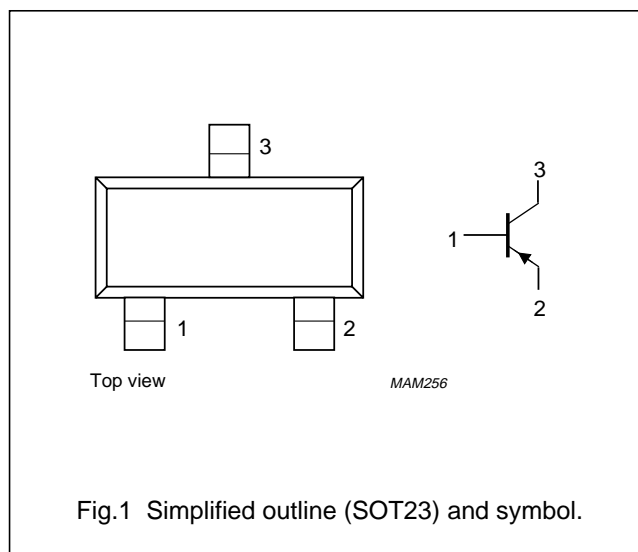


Fig.1 Simplified outline (SOT23) and symbol.

## 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.

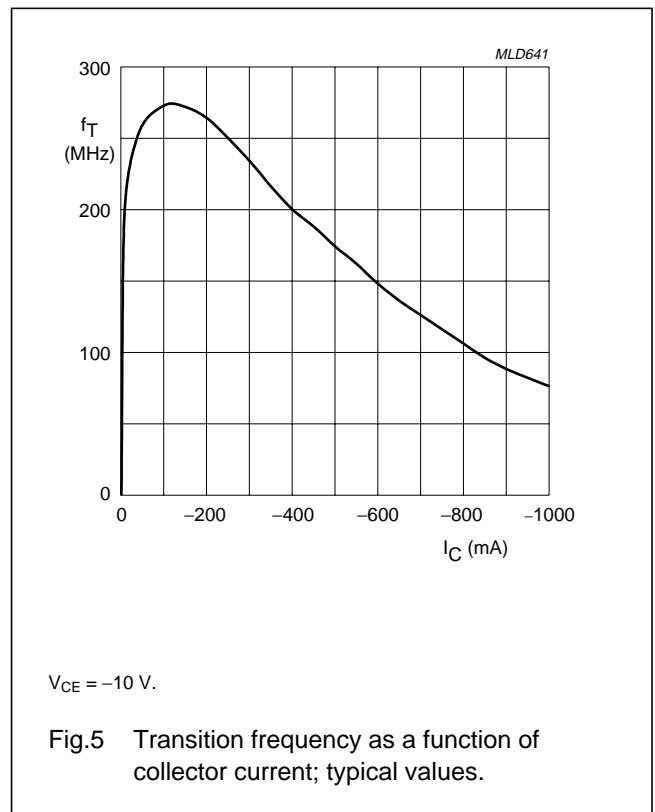
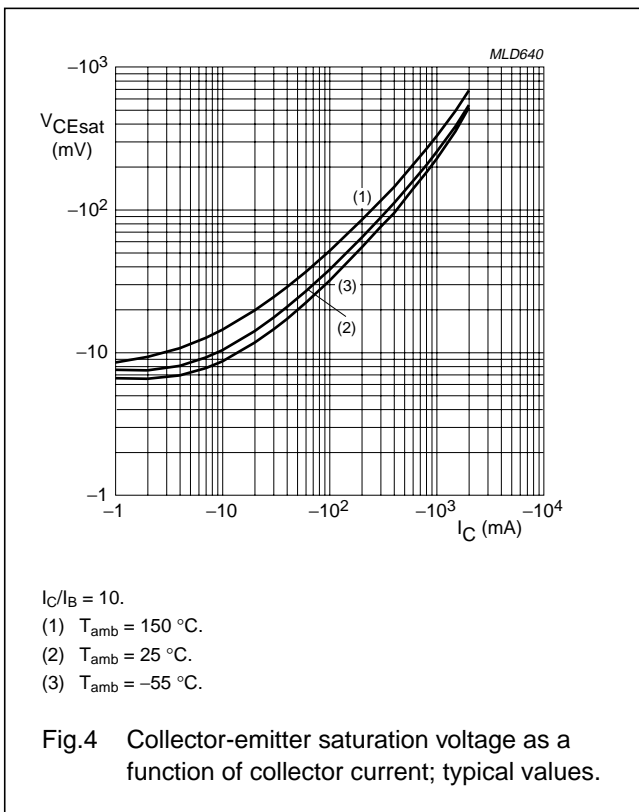
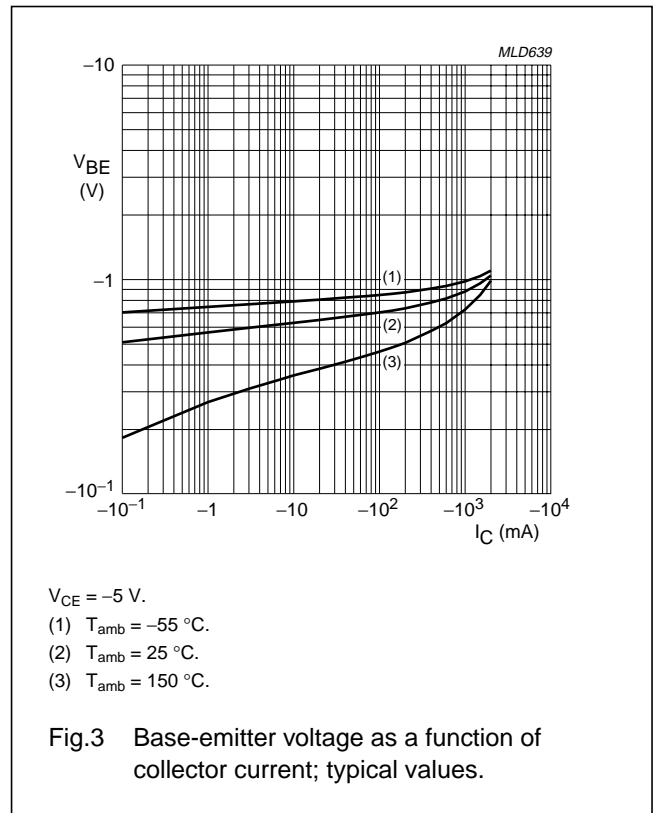
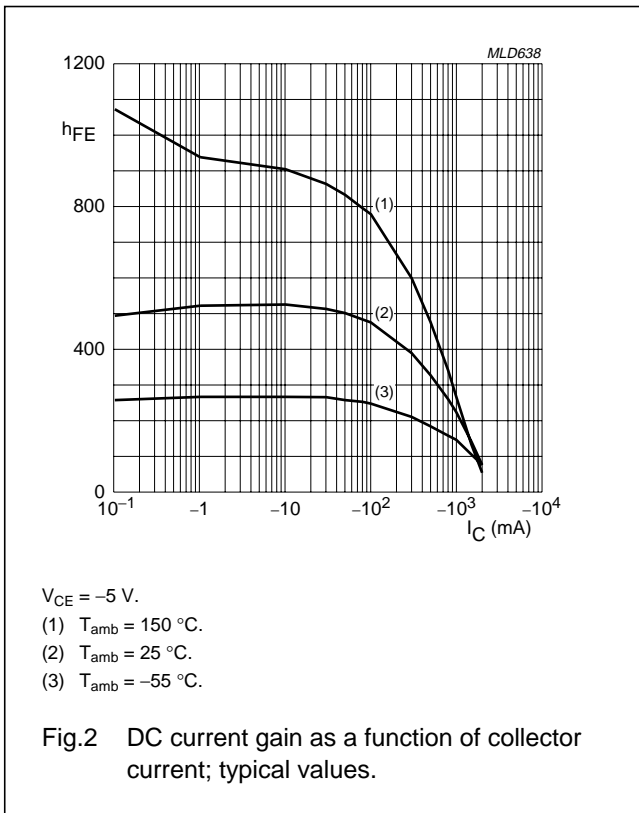
SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$I_{CBO}$	collector cut-off current	$I_E = 0; V_{CB} = -30\text{ V}$	–	–100	nA
$I_{CEO}$	collector cut-off current	$I_B = 0; V_{CE} = -30\text{ V}$	–	–100	nA
$I_{EBO}$	emitter cut-off current	$I_C = 0; V_{EB} = -5\text{ V}$	–	–100	nA
$h_{FE}$	DC current gain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



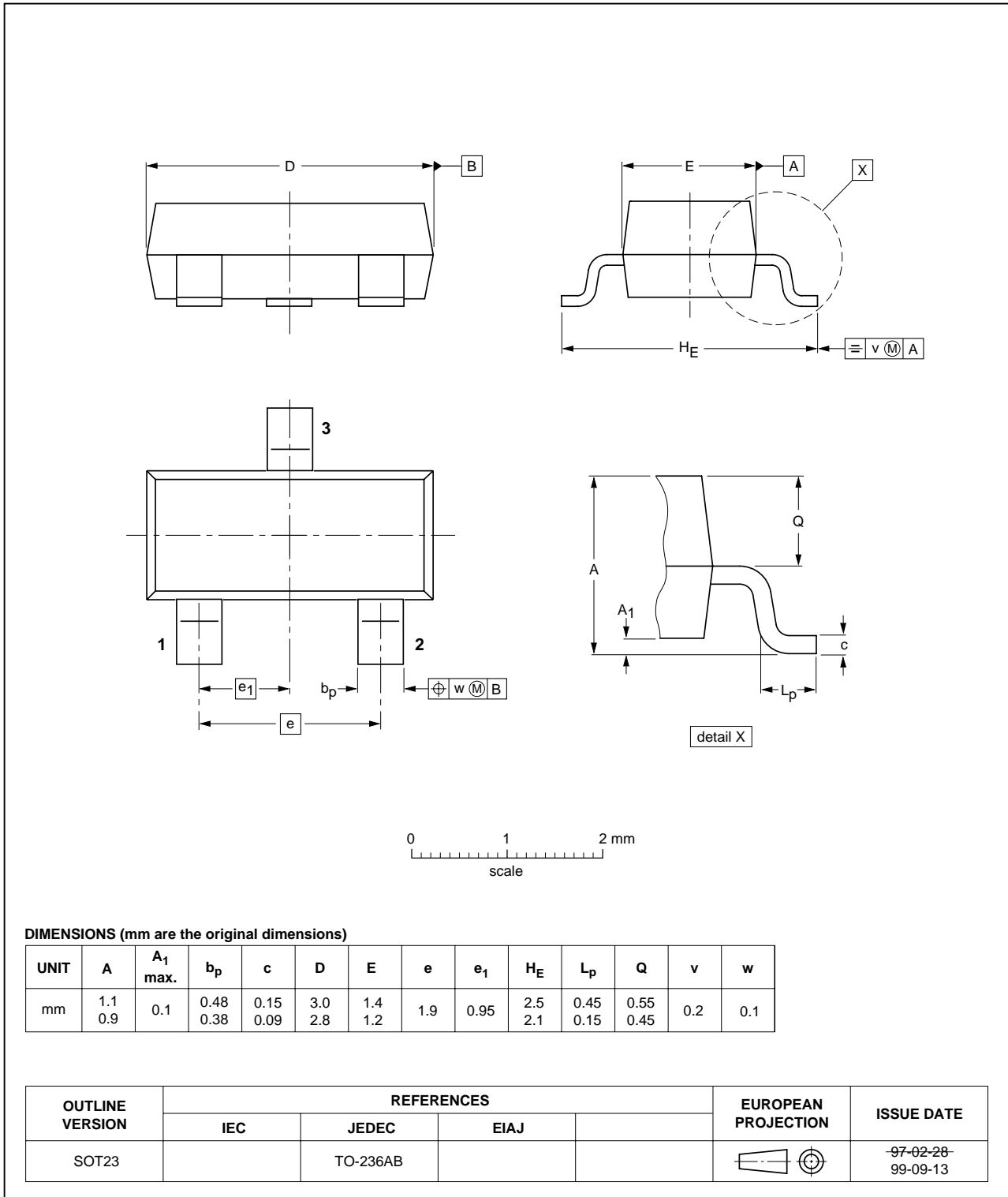
PNP BISS transistor

PMMT591A

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



## PNP BISS transistor

## PMMT591A

## DATA SHEET STATUS

LEVEL	DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)(3)</sup>	DEFINITION
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**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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