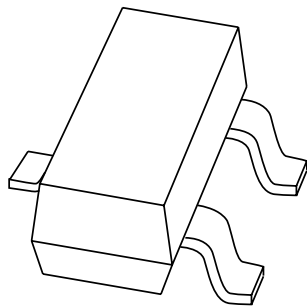


DATA SHEET



PMBTA13; PMBTA14 NPN Darlington transistors

Product specification
Supersedes data of 1997 Apr 18

1999 Apr 29

NPN Darlington transistors

PMBTA13; PMBTA14

FEATURES

- High current (max. 500 mA)
- Low voltage (max. 30 V)
- High DC current gain (min. 10000).

APPLICATIONS

- High input impedance preamplifiers.

DESCRIPTION

NPN Darlington transistor in a SOT23 plastic package.
PNP complement: PMBTA64.

MARKING

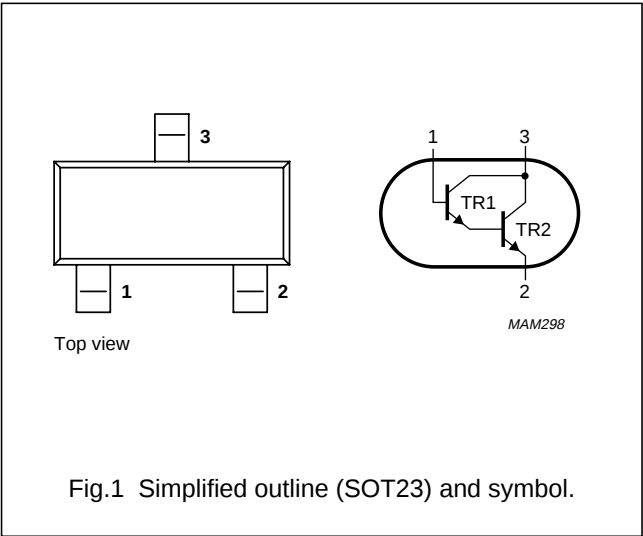
TYPE NUMBER	MARKING CODE ⁽¹⁾
PMBTA13	*1M
PMBTA14	*1N

Note

1. * = p : Made in Hong Kong.
* = t : Made in Malaysia.

PINNING

PIN	DESCRIPTION
1	base
2	emitter
3	collector



LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{CBO}	collector-base voltage	open emitter	–	30	V
V _{CES}	collector-emitter voltage	V _{BE} = 0	–	30	V
V _{EBO}	emitter-base voltage	open collector	–	10	V
I _C	collector current (DC)		–	500	mA
I _{CM}	peak collector current		–	800	mA
I _B	base current (DC)		–	200	mA
P _{tot}	total power dissipation	T _{amb} ≤ 25 °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.

NPN Darlington transistors

PMBTA13; PMBTA14

THERMAL CHARACTERISTICS

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

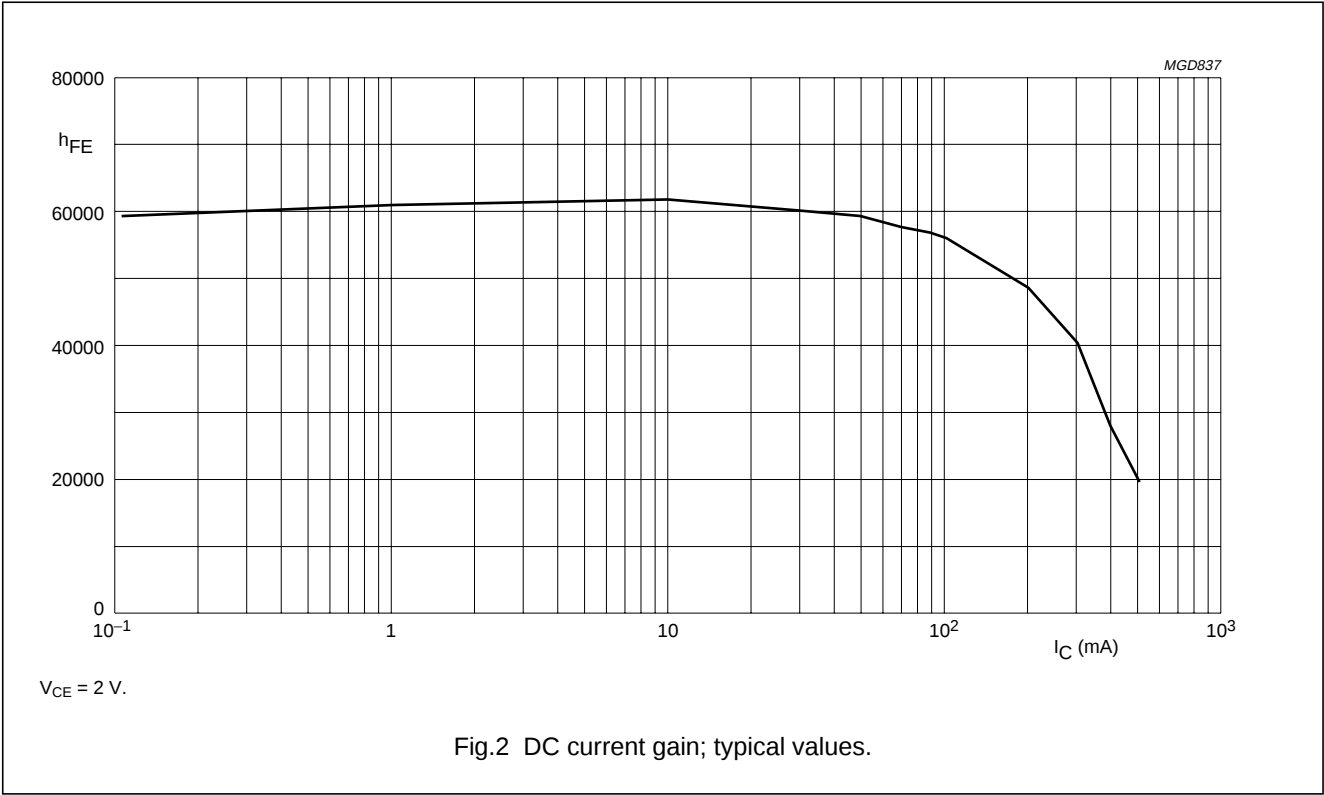
Note

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

CHARACTERISTICS

$T_j = 25\text{ }^{\circ}\text{C}$ 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_{EBO}	emitter cut-off current	$I_C = 0$; $V_{EB} = 10\text{ V}$	–	100	nA
h_{FE}	DC current gain	$I_C = 10\text{ mA}$; $V_{CE} = 5\text{ V}$; (see Fig.2)	5000	–	
	PMBTA13				
	PMBTA14				
	DC current gain	$I_C = 100\text{ mA}$; $V_{CE} = 5\text{ V}$; (see Fig.2)	10000	–	
	PMBTA13				
	PMBTA14				
V_{CEsat}	collector-emitter saturation voltage	$I_C = 100\text{ mA}$; $I_B = 0.1\text{ mA}$	–	1.5	V
V_{BEon}	base-emitter on-state voltage	$I_C = 100\text{ mA}$; $V_{CE} = 5\text{ V}$	–	1.4	V
f_T	transition frequency	$I_C = 10\text{ mA}$; $V_{CE} = 5\text{ V}$; $f = 100\text{ MHz}$	125	–	MHz



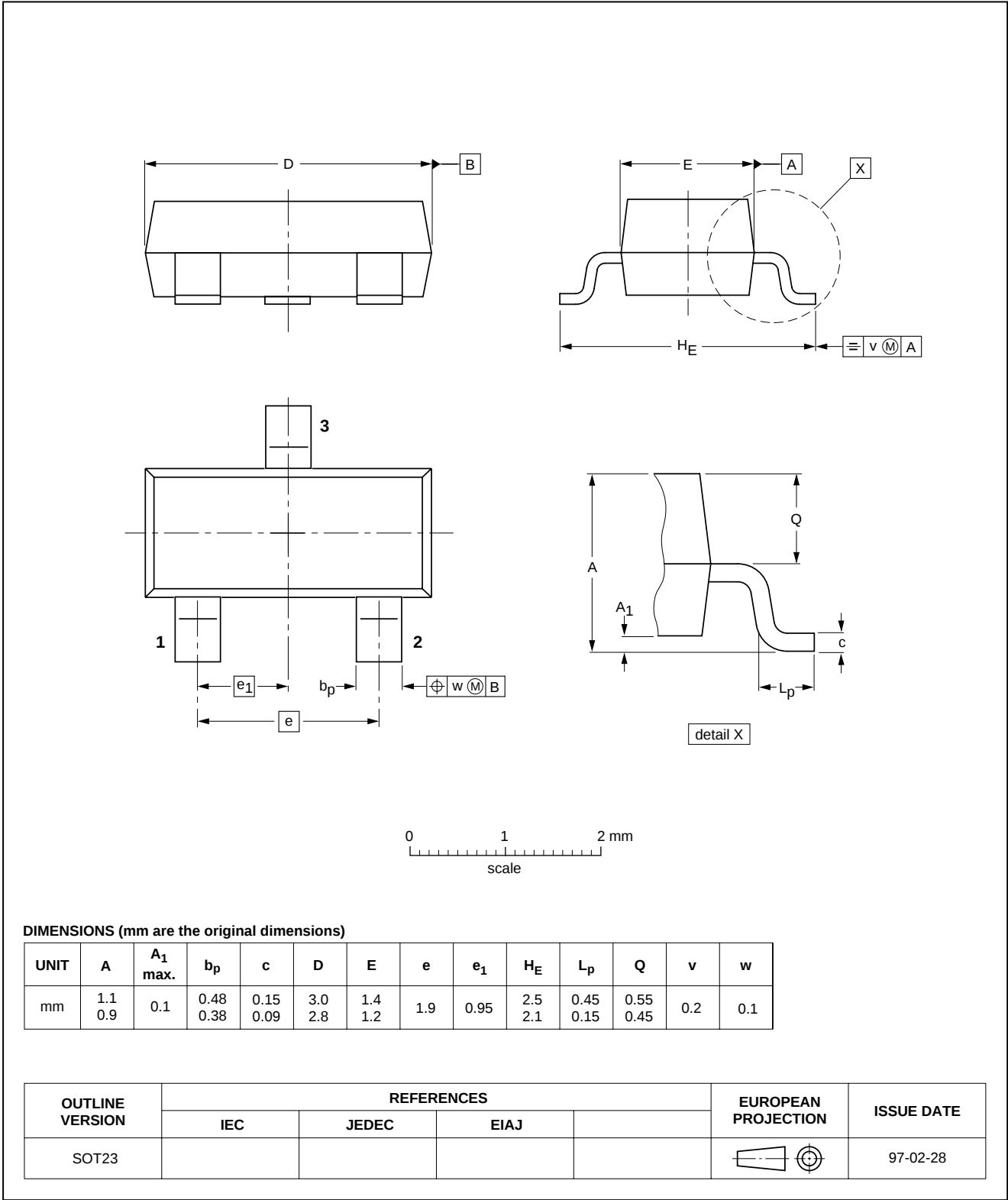
NPN Darlington transistors

PMBTA13; PMBTA14

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



NPN Darlington transistors**PMBTA13; PMBTA14**

DEFINITIONS

Data Sheet Status	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
Limiting values	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). 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.	
Application information	
Where application information is given, it is advisory and does not form part of the specification.	

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NPN Darlington transistors

PMBTA13; PMBTA14

NOTES

NPN Darlington transistors

PMBTA13; PMBTA14

NOTES

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