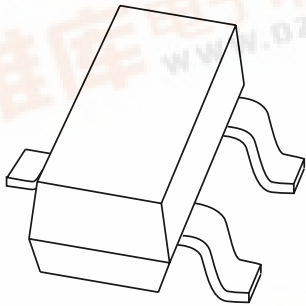


DISCRETE SEMICONDUCTORS

DATA SHEET



PDTA143XT **PNP resistor-equipped transistor**

Product specification

1999 Apr 20

PNP resistor-equipped transistor

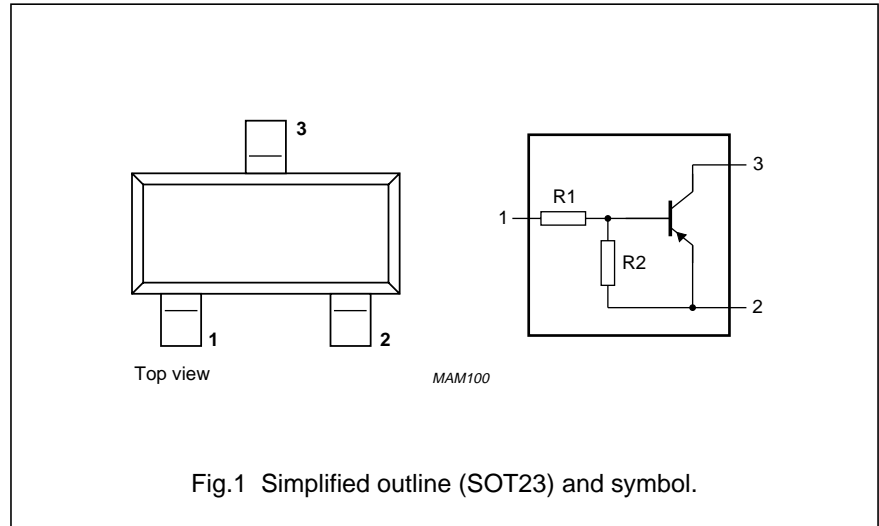
PDTA143XT

FEATURES

- Built-in bias resistors R1 and R2 (typ.4.7 kΩ and 10 kΩ respectively)
- Simplification of circuit design
- Reduces number of components and board space.

APPLICATIONS

- Especially suitable for space reduction in interface and driver circuits
- Inverter circuit configurations without use of external resistors.

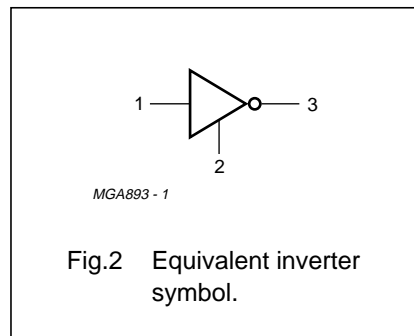


DESCRIPTION

PNP resistor-equipped transistor in a SOT23 plastic package.

PINNING

PIN	DESCRIPTION
1	base/input
2	emitter/ground (+)
3	collector/output



MARKING

TYPE NUMBER	MARKING CODE ⁽¹⁾
PDTA143XT	*31

Note

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

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V _{CB0}	collector-base voltage	open emitter	–	–50	V
V _{CEO}	collector-emitter voltage	open base	–	–50	V
V _{EBO}	emitter-base voltage	open collector	–	–10	V
V _I	input voltage positive negative		–	7	V
			–	–20	V
I _O	output current (DC)		–	–100	mA
I _{CM}	peak collector current		–	–100	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. Refer to SOT23 standard mounting conditions.

PNP resistor-equipped transistor

PDTA143XT

THERMAL CHARACTERISTICS

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

Note

1. Refer to SOT23 standard mounting conditions.

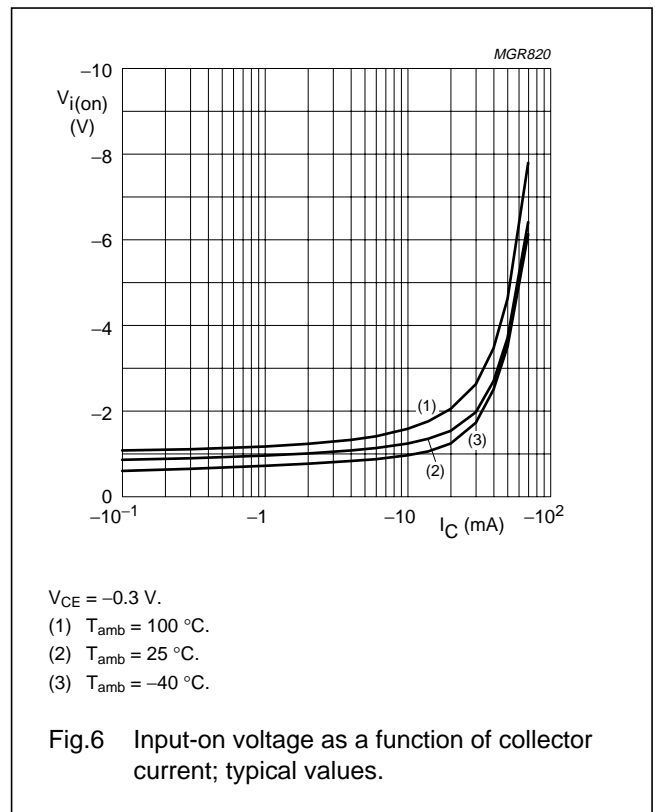
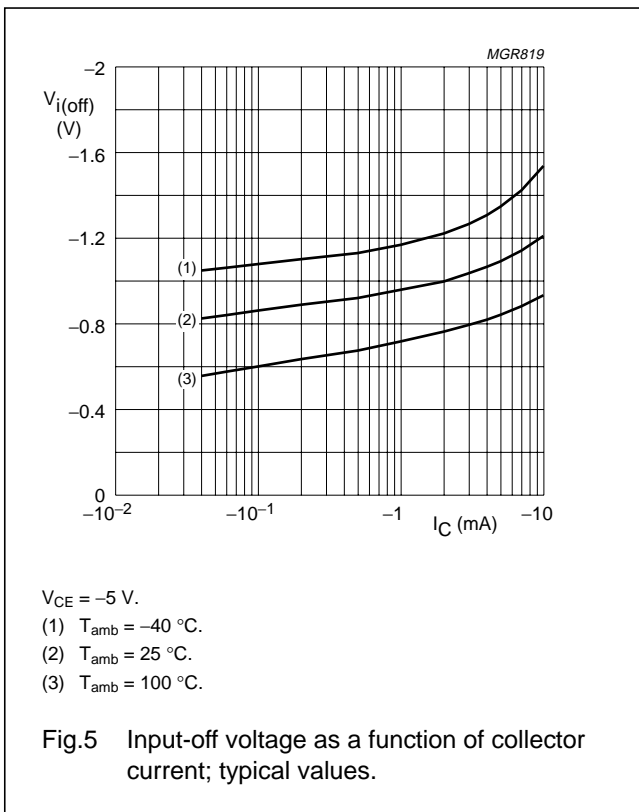
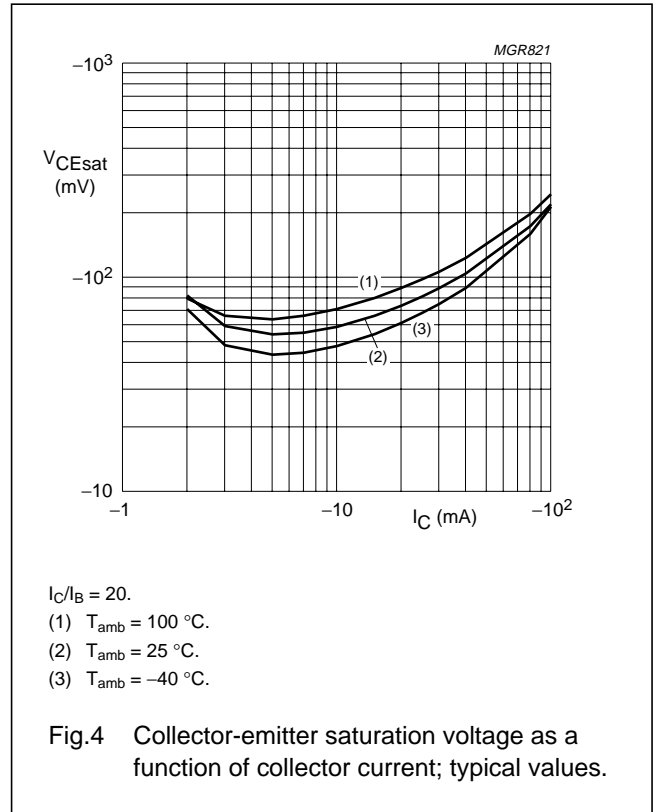
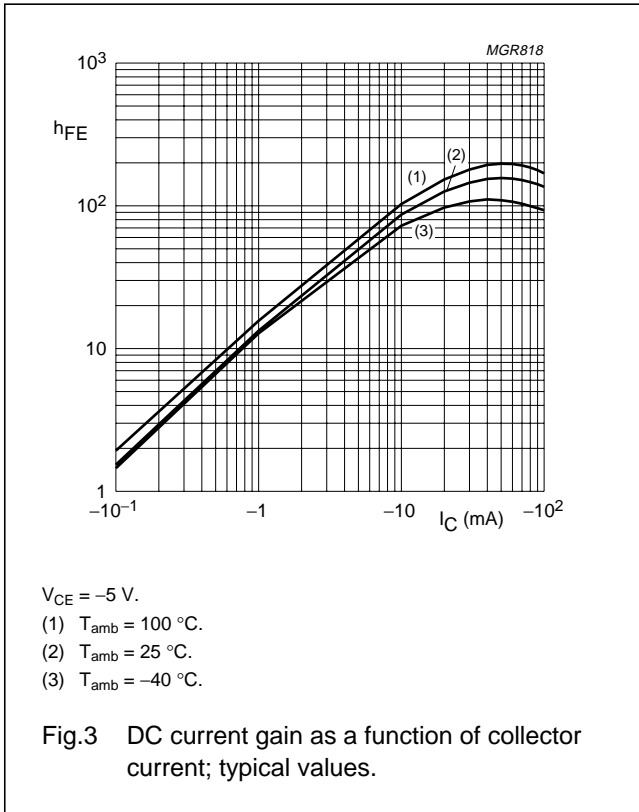
CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{CBO}	collector cut-off current	$I_E = 0; V_{CB} = -50\text{ V}$	–	–	–100	nA
I_{CEO}	collector cut-off current	$I_B = 0; V_{CE} = -30\text{ V}$	–	–	–1	μA
		$I_B = 0; V_{CE} = -30\text{ V}; T_J = 150\text{ °C}$	–	–	–50	μA
I_{EBO}	emitter cut-off current	$I_C = 0; V_{EB} = -5\text{ V}$	–	–	–0.6	mA
h_{FE}	DC current gain	$I_C = -10\text{ mA}; V_{CE} = -5\text{ V}$	50	–	–	
V_{CEsat}	collector-emitter saturation voltage	$I_C = -10\text{ mA}; I_B = -0.5\text{ mA}$	–	–	–150	mV
$V_{i(off)}$	input-off voltage	$I_C = -100\text{ }\mu\text{A}; V_{CE} = -5\text{ V}$	–	–	–0.3	V
$V_{i(on)}$	input-on voltage	$I_C = -20\text{ mA}; V_{CE} = -0.3\text{ V}$	–2.5	–	–	V
R1	input resistor		3.3	4.7	6.1	k Ω
$\frac{R2}{R1}$	resistor ratio		1.7	2.1	2.6	
C_c	collector capacitance	$I_E = i_e = 0; V_{CB} = -10\text{ V}; f = 1\text{ MHz}$	–	–	3	pF

PNP resistor-equipped transistor

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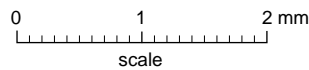
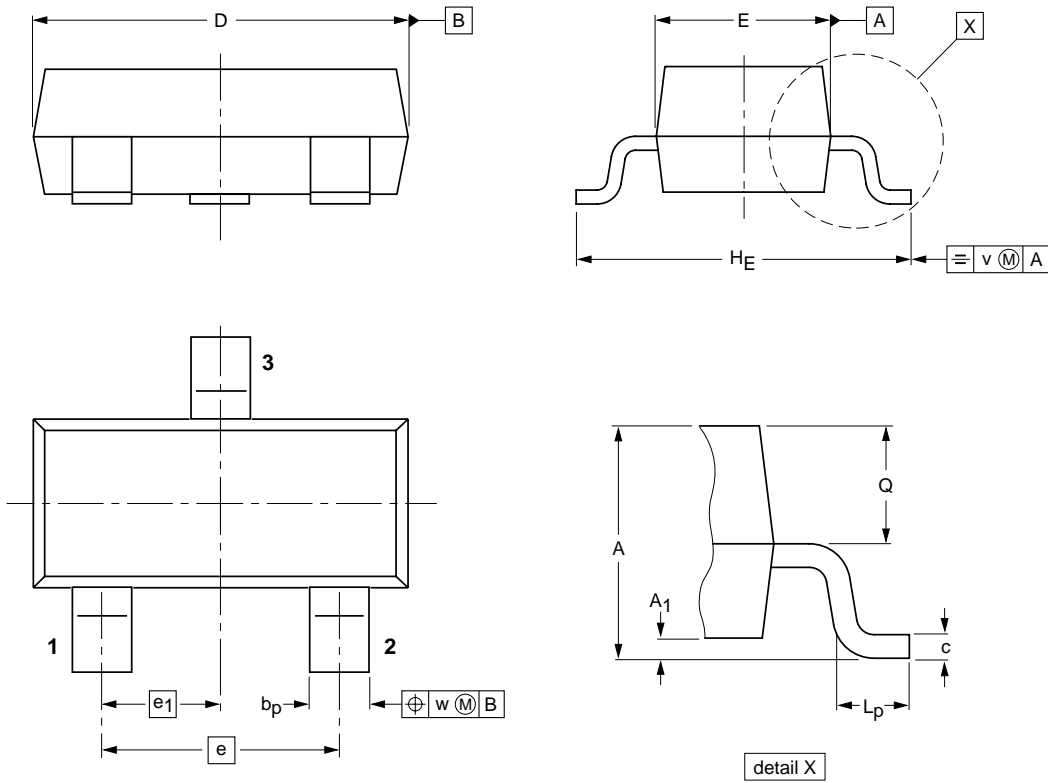
PNP resistor-equipped transistor

PDTA143XT

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT23



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max.	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT23						97-02-28

PNP resistor-equipped transistor

PDTA143XT

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.	

LIFE SUPPORT APPLICATIONS

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.

PNP resistor-equipped transistor

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