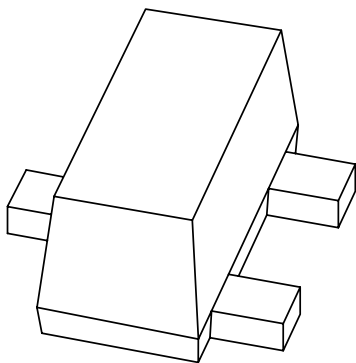


# DATA SHEET



## **PDTA143XEF**

**PNP resistor-equipped transistor;  
R1 = 4.7 k $\Omega$ , R2 = 10 k $\Omega$**

Product specification

2002 Mar 14

**PNP resistor-equipped transistor;**  
**R1 = 4.7 kΩ, R2 = 10 kΩ**

**PDTA143XEF**

**FEATURES**

- Built-in bias resistors
- 250 mW total power dissipation
- Very small 1.6 × 0.85 × 0.7 mm package
- Flat leads
- Excellent coplanarity
- Improved thermal behaviour
- Reduces number of components and required PCB area.

**APPLICATIONS**

- General purpose switching and amplification
- Inverter and interface circuits
- Driver circuits.

**DESCRIPTION**

PNP resistor-equipped transistor in a SOT490 (SC-89) plastic package.

**MARKING**

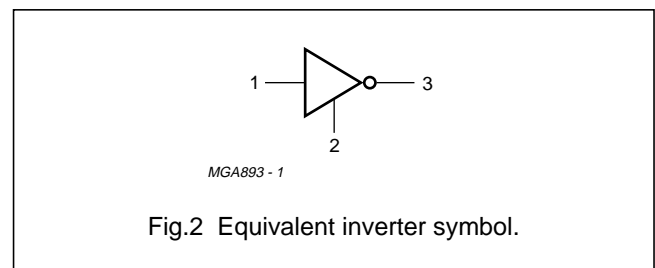
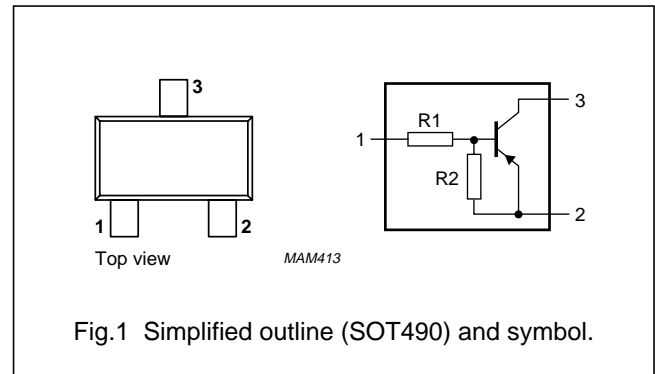
TYPE NUMBER	MARKING CODE
PDTA143XEF	41

**QUICK REFERENCE DATA**

SYMBOL	PARAMETER	MAX.	UNIT
V <sub>CEO</sub>	collector-emitter voltage	-50	V
I <sub>O</sub>	output current (DC)	-100	mA
R1	bias resistor	4.7	kΩ
R2	bias resistor	10	kΩ

**PINNING**

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



PNP resistor-equipped transistor;  
R1 = 4.7 k $\Omega$ , R2 = 10 k $\Omega$

PDTA143XEF

**LIMITING VALUES**

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V <sub>CB0</sub>	collector-base voltage	open emitter	–	–50	V
V <sub>CEO</sub>	collector-emitter voltage	open base	–	–50	V
V <sub>EBO</sub>	emitter-base voltage	open collector	–	–10	V
V <sub>i</sub>	input voltage positive negative		–	+7	V
			–	–20	V
I <sub>o</sub>	output current (DC)		–	–100	mA
I <sub>CM</sub>	peak collector current		–	–100	mA
P <sub>tot</sub>	total power dissipation	T <sub>amb</sub> ≤ 25 °C; note 1	–	250	mW
T <sub>stg</sub>	storage temperature		–65	+150	°C
T <sub>j</sub>	junction temperature		–	150	°C
T <sub>amb</sub>	operating ambient temperature		–65	+150	°C

**Note**

- For mounting conditions, see “Thermal considerations and footprint design for SOT490 in the SC18 Data Handbook”.

**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R <sub>th j-a</sub>	thermal resistance from junction to ambient	in free air; note 1	500	K/W

**Note**

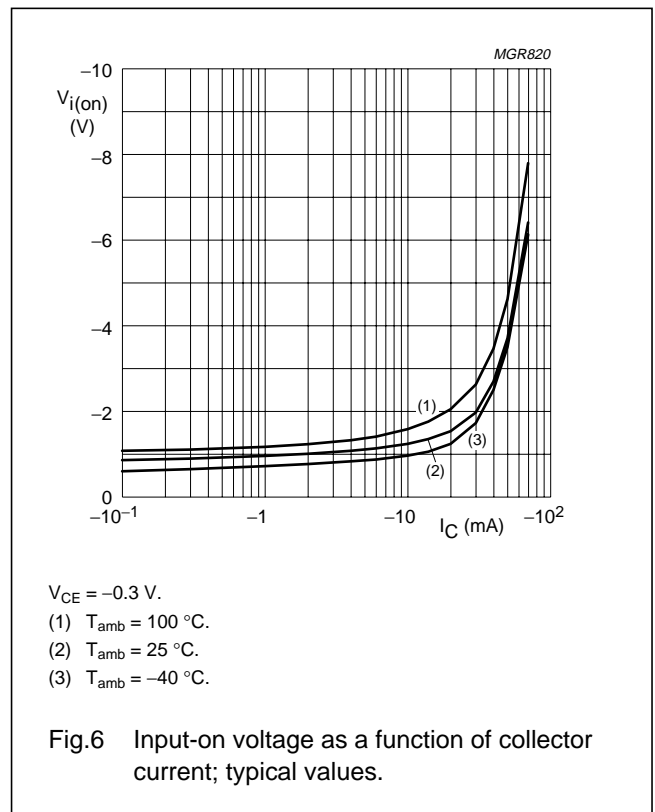
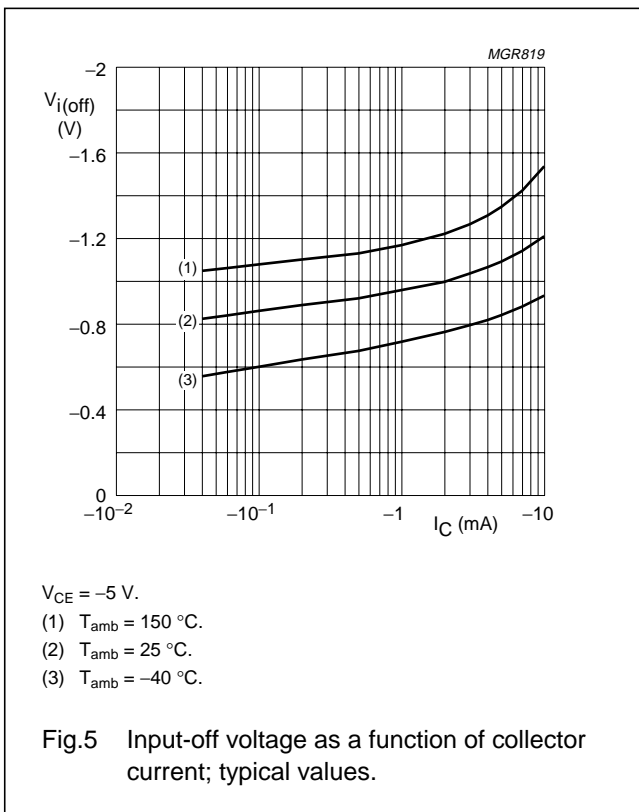
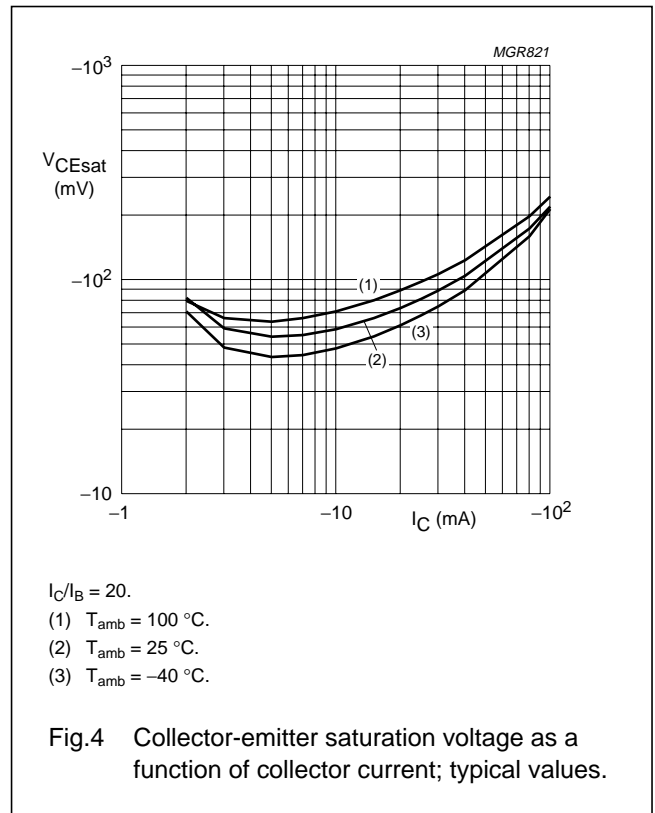
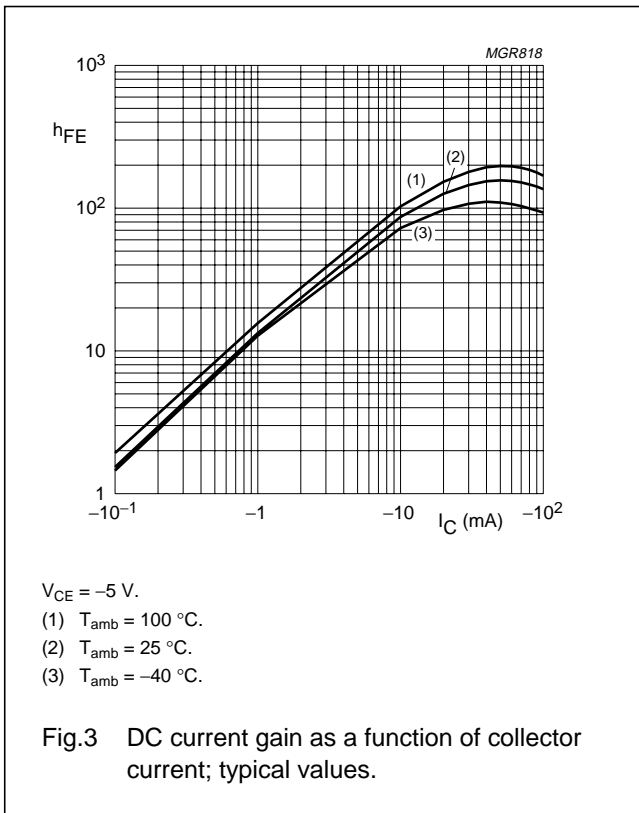
- For mounting conditions, see “Thermal considerations and footprint design for SOT490 in the SC18 Data Handbook”.

**CHARACTERISTICS**T<sub>amb</sub> = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I <sub>CBO</sub>	collector-base cut-off current	V <sub>CB</sub> = –50 V; I <sub>E</sub> = 0	–	–	–100	nA
I <sub>CEO</sub>	collector-emitter cut-off current	V <sub>CE</sub> = –30 V; I <sub>B</sub> = 0	–	–	–1	μA
		V <sub>CE</sub> = –30 V; I <sub>B</sub> = 0; T <sub>j</sub> = 150 °C	–	–	–50	μA
I <sub>EBO</sub>	emitter-base cut-off current	V <sub>EB</sub> = –5 V; I <sub>C</sub> = 0	–	–	–0.6	mA
h <sub>FE</sub>	DC current gain	V <sub>CE</sub> = –5 V; I <sub>C</sub> = –10 mA	50	–	–	
V <sub>CEsat</sub>	collector-emitter saturation voltage	I <sub>C</sub> = –10 mA; I <sub>B</sub> = –0.5 mA	–	–	–150	mV
V <sub>i(off)</sub>	input off voltage	V <sub>CE</sub> = –5 V; I <sub>C</sub> = –100 μA	–	–	–0.3	V
V <sub>i(on)</sub>	input on voltage	V <sub>CE</sub> = –0.3 V; I <sub>C</sub> = –20 mA	–2.5	–	–	V
R1	input resistor		3.3	4.7	6.1	k $\Omega$
$\frac{R2}{R1}$	resistor ratio		1.7	2.1	2.6	
C <sub>c</sub>	collector capacitance	I <sub>E</sub> = i <sub>e</sub> = 0; V <sub>CB</sub> = –10 V; f = 1 MHz	–	–	3	pF

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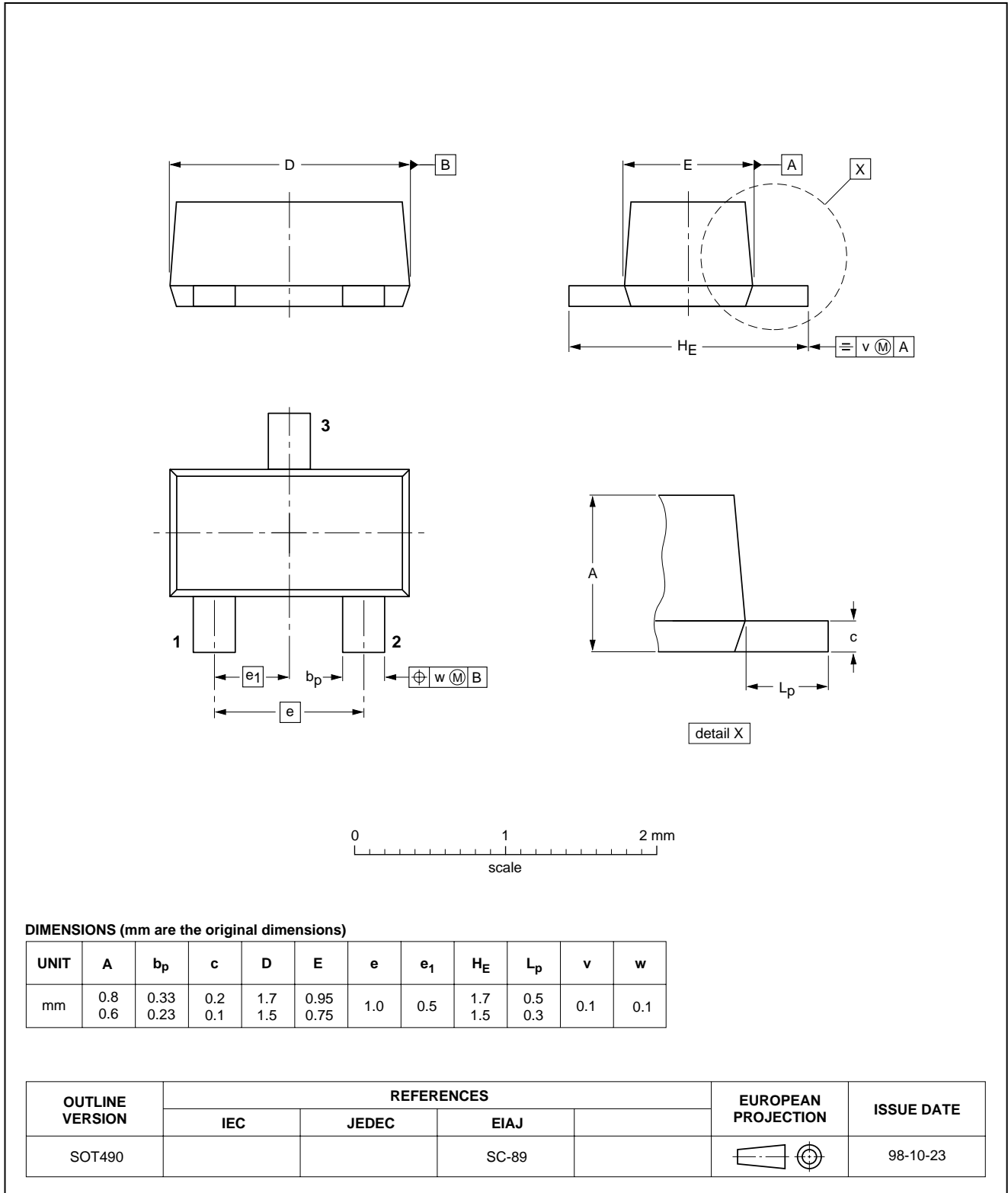
PNP resistor-equipped transistor;  
 R1 = 4.7 kΩ, R2 = 10 kΩ

PDTA143XEF

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT490



PNP resistor-equipped transistor;  
R1 = 4.7 k $\Omega$ , R2 = 10 k $\Omega$

PDTA143XEF

#### DATA SHEET STATUS

DATA SHEET STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	DEFINITIONS
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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. Changes will be communicated according to the Customer Product/Process Change Notification (CPCN) procedure SNW-SQ-650A.

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**NOTES**

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