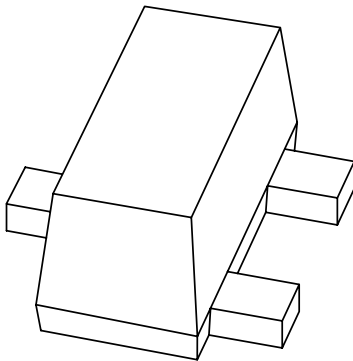


DATA SHEET



PDTA124EEF

PNP resistor-equipped transistor

Product specification

2001 Jun 11

PNP resistor-equipped transistor

PDTA124EEF

FEATURES

- Built-in bias resistors R1 and R2 (typical 22 k Ω each)
- Simplification of circuit design
- Reduces number of components and board space.

APPLICATIONS

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

DESCRIPTION

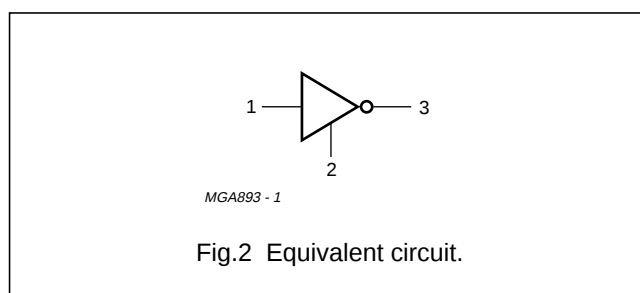
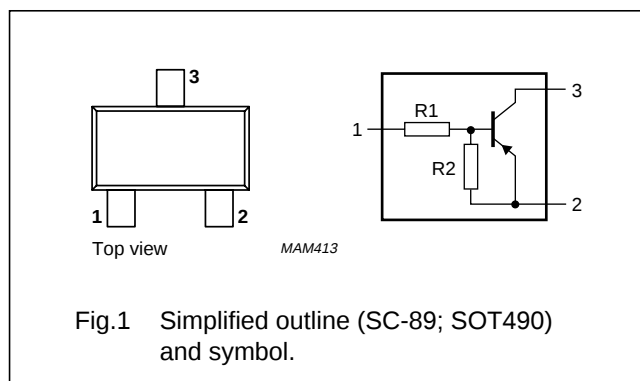
PNP resistor equipped transistor in an SC-89 (SOT490) plastic package.

MARKING

TYPE NUMBER	MARKING CODE
PDTA124EEF	3R

PINNING

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



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	–	–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		–	+10	V
	negative		–	–40	V
I_o	output current (DC)		–	–100	mA
I_{CM}	peak collector current		–	–100	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ }^{\circ}\text{C}$; note 1	–	250	mW
T_{stg}	storage temperature		–65	+150	$^{\circ}\text{C}$
T_j	junction temperature		–	150	$^{\circ}\text{C}$
T_{amb}	operating ambient temperature		–65	+150	$^{\circ}\text{C}$

Note

1. Refer to SC-89 (SOT490) standard mounting conditions.

PNP resistor-equipped transistor

PDTA124EEF

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 SC-89 (SOT490) 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	$I_C = 0; V_{EB} = -5\text{ V}$	–	–	–180	μA
h_{FE}	DC current gain	$I_C = -5\text{ mA}; V_{CE} = -5\text{ V}$	60	–	–	
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	$I_C = -100\text{ }\mu\text{A}; V_{CE} = -5\text{ V}$	–	–1.14	–0.8	V
$V_{i(on)}$	input-on voltage	$I_C = -5\text{ mA}; V_{CE} = -0.3\text{ V}$	–2.5	–1.7	–	V
$R1$	input resistor		15.4	22	28.6	$k\Omega$
$\frac{R2}{R1}$	resistor ratio		0.8	1	1.2	
C_c	collector capacitance	$I_E = I_e = 0; V_{CB} = -10\text{ V};$ $f = 1\text{ MHz}$	–	–	3	pF

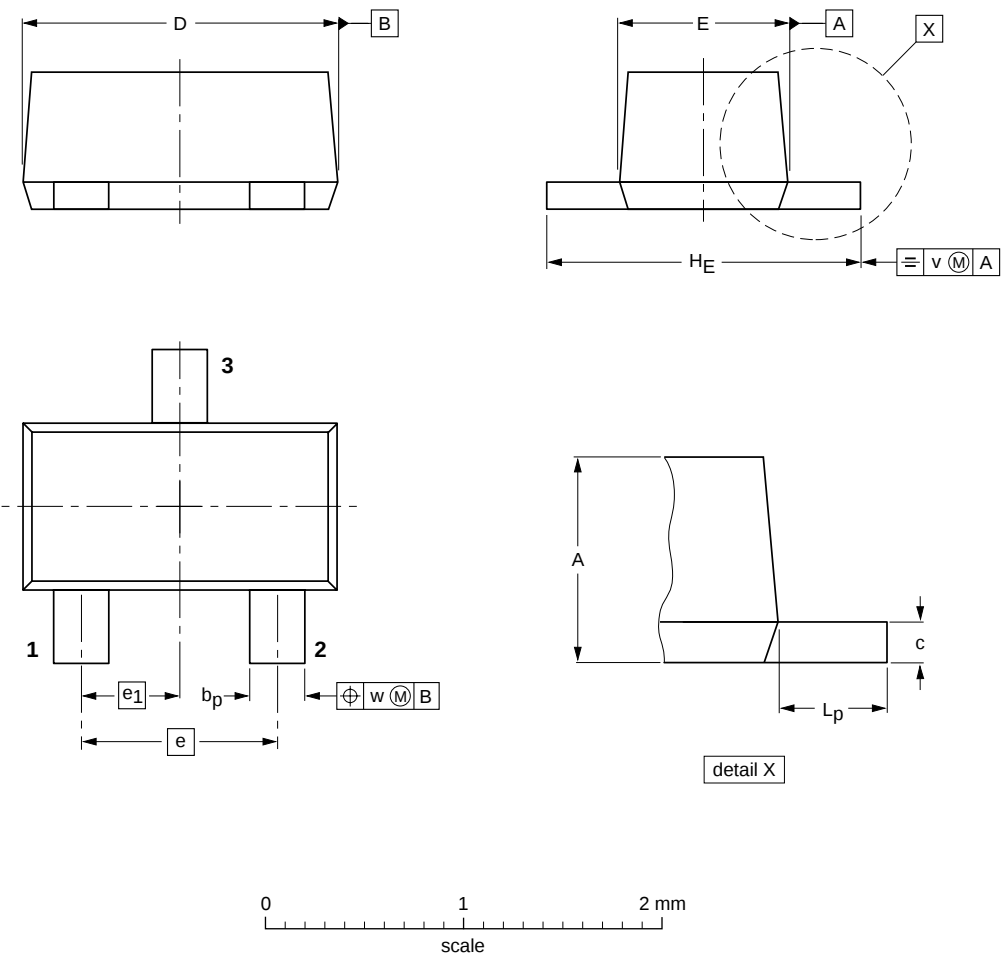
PNP resistor-equipped transistor

PDTA124EEF

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT490



DIMENSIONS (mm are the original dimensions)

UNIT	A	b _p	c	D	E	e	e ₁	H _E	L _p	v	w
mm	0.8 0.6	0.33 0.23	0.2 0.1	1.7 1.5	0.95 0.75	1.0	0.5	1.7 1.5	0.5 0.3	0.1	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT490			SC-89			98-10-23

PNP resistor-equipped transistor

PDTA124EEF

DATA SHEET STATUS

DATA SHEET STATUS ⁽¹⁾	PRODUCT STATUS ⁽²⁾	DEFINITIONS
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.
Preliminary data	Qualification	This data sheet contains data from the preliminary specification. Supplementary data will be published at a later date. Philips Semiconductors reserves the right to change the specification without notice, in order to improve the design and supply the best possible product.
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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PNP resistor-equipped transistor

PDTA124EEF

NOTES

PNP resistor-equipped transistor

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