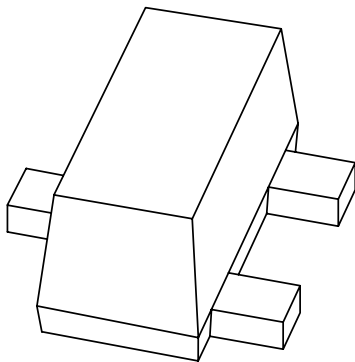


DATA SHEET



PDTA114EEF

PNP resistor-equipped transistor

Preliminary specification
Supersedes data of 1998 Nov 11

1999 May 21

PNP resistor-equipped transistor

PDTA114EEF

FEATURES

- Power dissipation comparable to SOT23
- Built-in bias resistors R1 and R2 (typ. 10 kΩ 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 configurations without use of external resistors.

DESCRIPTION

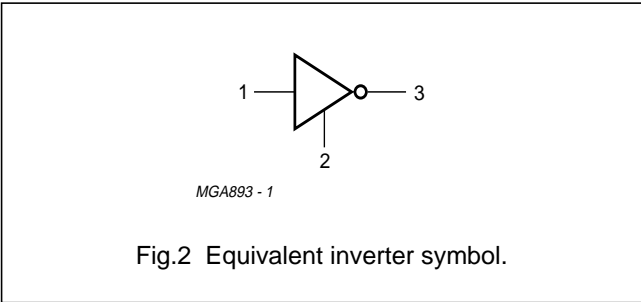
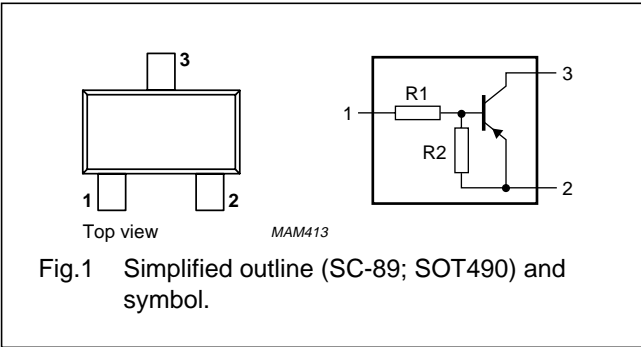
PNP resistor-equipped transistor encapsulated in an ultra small SC-89 (SOT490) plastic SMD package.
NPN complement: PDTC114EEF.

MARKING

TYPE NUMBER	MARKING CODE
PDTA114EEF	03

PINNING

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



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	–	–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} ≤ 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 SC-89 (SOT490) standard mounting conditions.

PNP resistor-equipped transistor

PDTA114EEF

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	in free air; note 1	500	K/W

Note

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

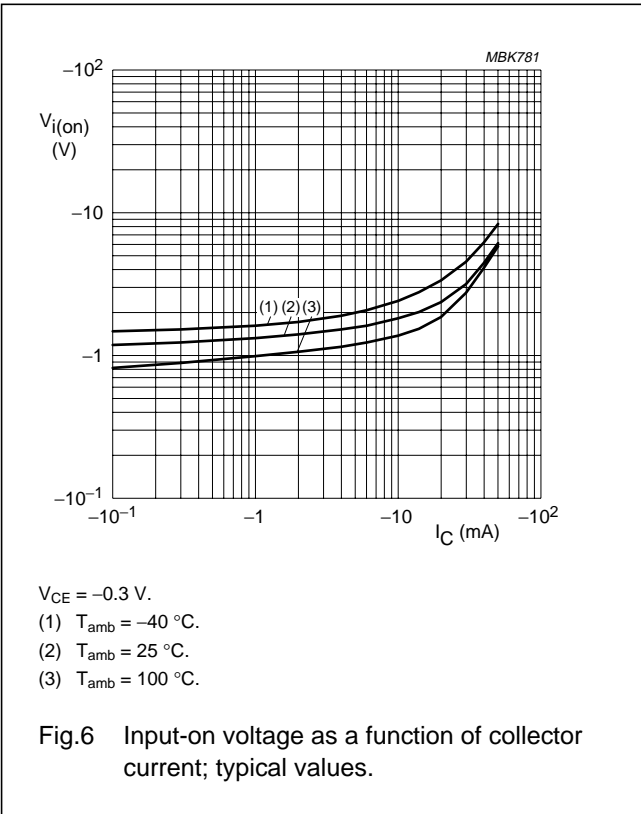
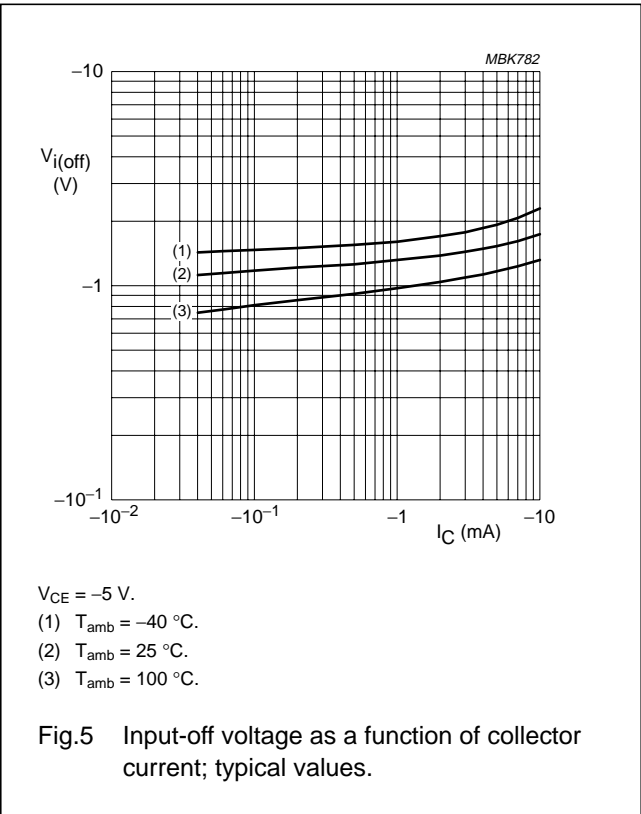
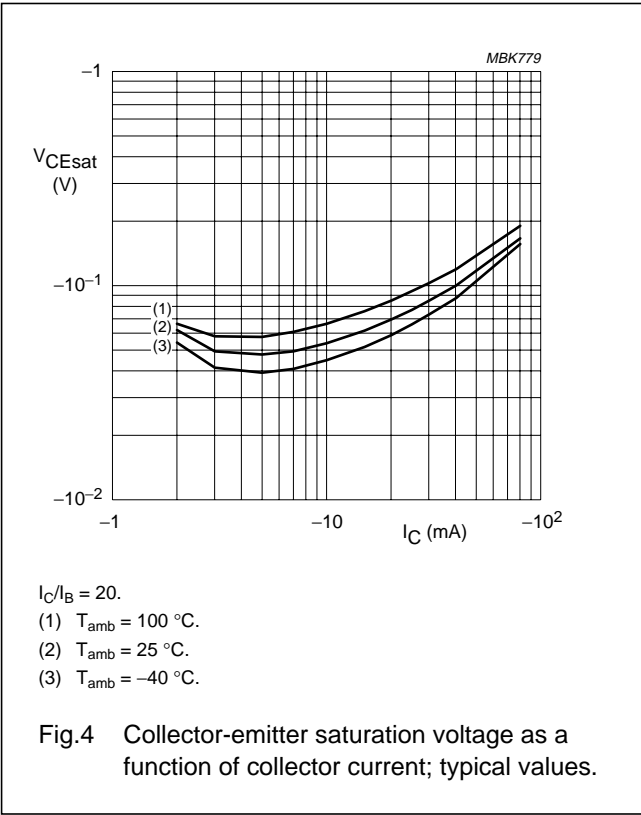
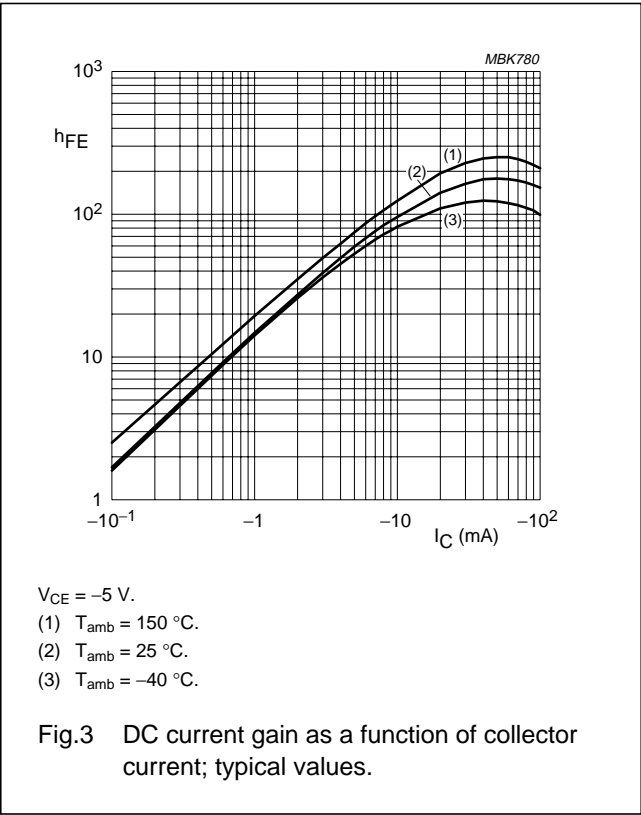
CHARACTERISTICS

$T_{amb} = 25\text{ °C}$ 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	$I_C = 0; V_{EB} = -5\text{ V}$	–	–	–400	μA
h_{FE}	DC current gain	$I_C = -5\text{ mA}; V_{CE} = -5\text{ V}$	30	–	–	
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	$I_C = -100\text{ }\mu\text{A}; V_{CE} = -5\text{ V}$	–	–1.1	–0.8	V
$V_{i(on)}$	input-on voltage	$I_C = -10\text{ mA}; V_{CE} = -300\text{ mV}$	–2.5	–1.8	–	V
R1	input resistor		7	10	13	k Ω
$\frac{R2}{R1}$	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

PDTA114EEF



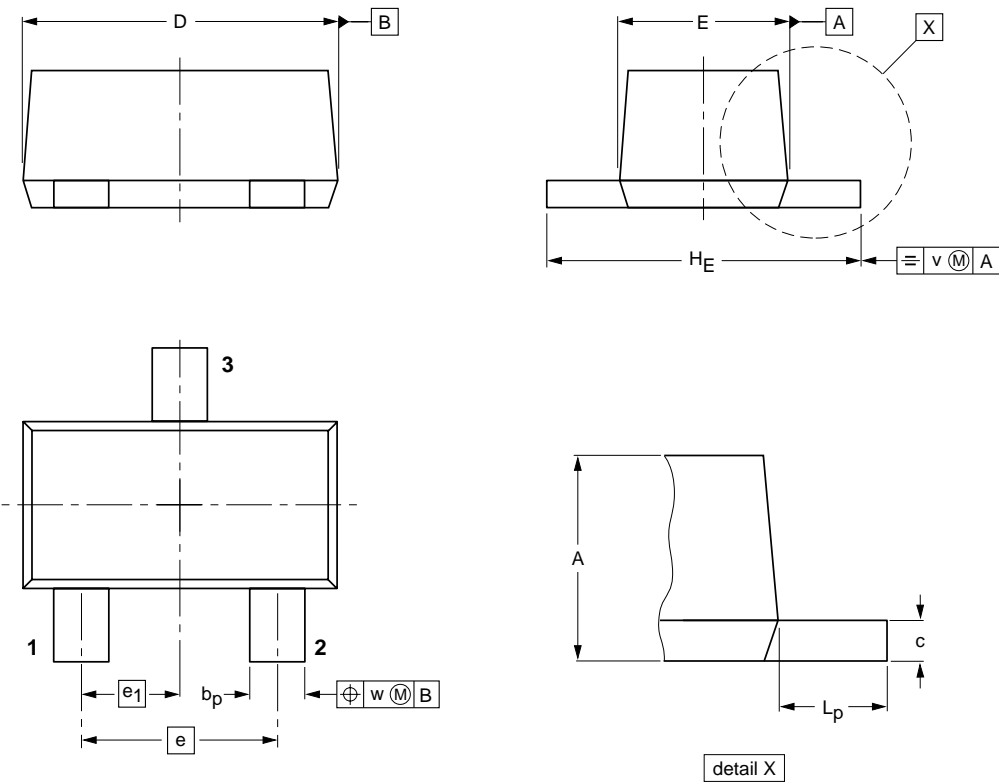
PNP resistor-equipped transistor

PDTA114EEF

PACKAGE OUTLINE

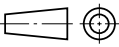
Plastic surface mounted package; 3 leads

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

PDTA114EEF

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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PNP resistor-equipped transistor

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