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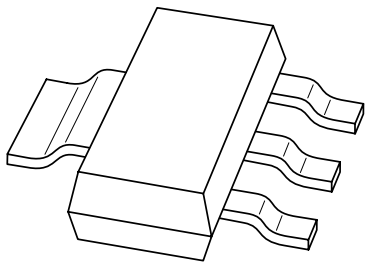
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Kind regards,

Team Nexperia

DATA SHEET



BSP122

**N-channel enhancement mode
vertical D-MOS transistor**

Product specification
Supersedes data of 1997 Jun 23

2001 May 18

N-channel enhancement mode vertical D-MOS transistor

BSP122

FEATURES

- Direct interface to C-MOS, TTL, etc.
- High-speed switching
- No secondary breakdown.

DESCRIPTION

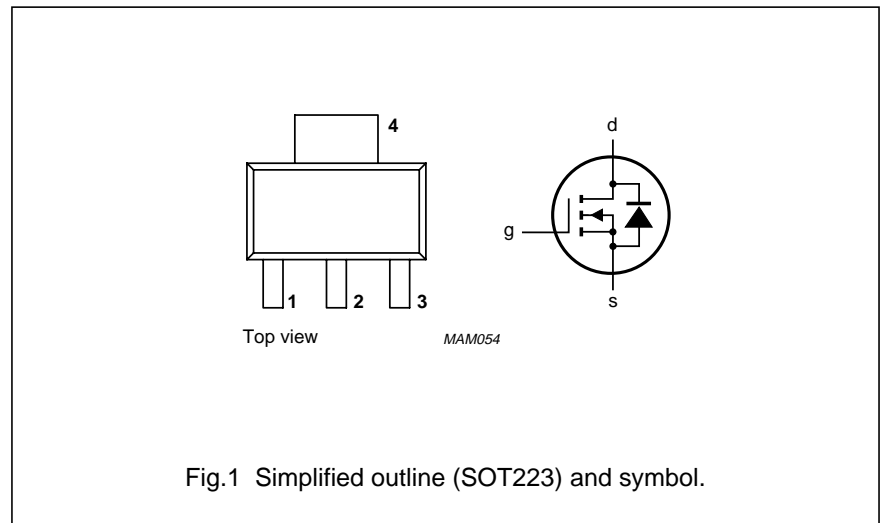
N-channel enhancement mode vertical D-MOS transistor in a SOT223 package and intended for use as a line current interruptor in telephone sets and for applications in relay, high-speed and line transformer drivers.

PINNING - SOT223

PIN	DESCRIPTION
1	gate
2	drain
3	source
4	drain

QUICK REFERENCE DATA

SYMBOL	PARAMETER	MAX.	UNIT
V_{DS}	drain-source voltage (DC)	200	V
I_D	drain current (DC)	550	mA
R_{DSon}	drain-source on-state resistance	2.5	Ω
V_{GSth}	gate-source threshold voltage	2	V



LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{DS}	drain-source voltage (DC)		–	200	V
V_{GSO}	gate-source voltage (DC)	open drain	–	± 20	V
I_D	drain current (DC)		–	550	mA
I_{DM}	peak drain current		–	3	A
P_{tot}	total power dissipation	$T_{amb} \leq 25\text{ }^\circ\text{C}$; note 1	–	1.5	W
T_{stg}	storage temperature		–55	+150	$^\circ\text{C}$
T_j	junction temperature		–	150	$^\circ\text{C}$

Note

1. Transistor mounted on an epoxy printed circuit board, 40 x 40 x 1.5 mm, mounting pad for the drain tab minimum 6 cm².

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient; note 1	83.3	K/W

Note

1. Transistor mounted on an epoxy printed circuit board, 40 x 40 x 1.5 mm, mounting pad for the drain tab minimum 6 cm².

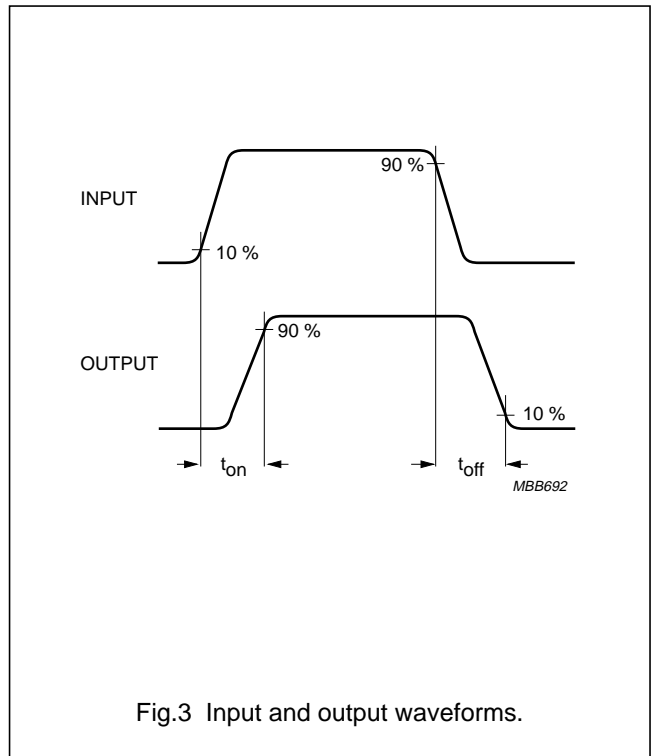
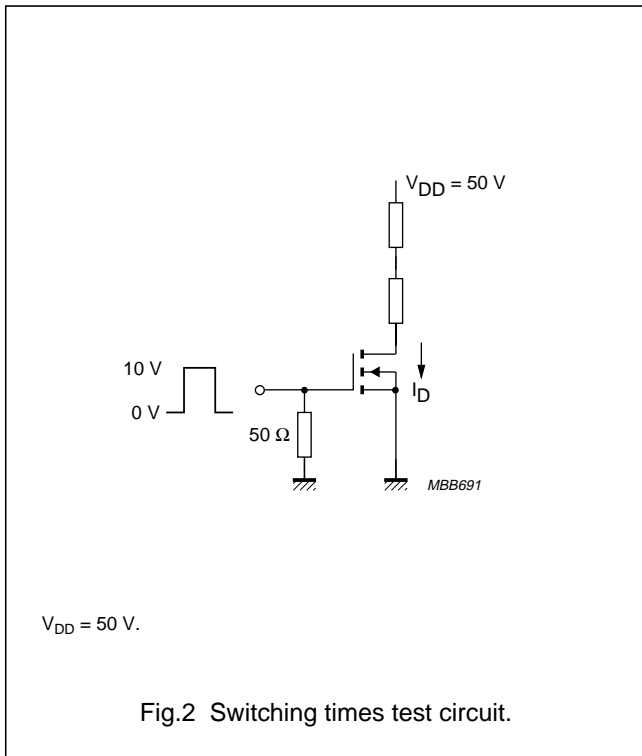
N-channel enhancement mode vertical D-MOS transistor

BSP122

CHARACTERISTICS

T_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
V _{(BR)DSS}	drain-source breakdown voltage	I _D = 10 μA; V _{GS} = 0	200	–	–	V
I _{DSS}	drain-source leakage current	V _{DS} = 160 V; V _{GS} = 0	–	–	1	μA
I _{GSS}	gate-source leakage current	V _{GS} = ±20 V; V _{DS} = 0	–	–	100	nA
V _{GSth}	gate-source threshold voltage	I _D = 1 mA; V _{GS} = V _{DS}	0.4	–	2	V
R _{DSon}	drain-source on-resistance	I _D = 750 mA; V _{GS} = 10 V	–	1.7	2.5	Ω
		I _D = 20 mA; V _{GS} = 2.4 V	–	3	–	Ω
Y _{fs}	transfer admittance	I _D = 750 mA; V _{DS} = 25 V	400	900	–	mS
C _{iSS}	input capacitance	V _{DS} = 25 V; V _{GS} = 0; f = 1 MHz	–	100	–	pF
C _{oSS}	output capacitance	V _{DS} = 25 V; V _{GS} = 0; f = 1 MHz	–	20	–	pF
C _{rSS}	reverse transfer capacitance	V _{DS} = 25 V; V _{GS} = 0; f = 1 MHz	–	10	–	pF
Switching times (see Figs 2 and 3)						
t _{on}	turn-on time	I _D = 750 mA; V _{DD} = 50 V; V _{GS} = 0 to 10 V	–	10	20	ns
t _{off}	turn-off time	I _D = 750 mA; V _{DD} = 50 V; V _{GS} = 0 to 10 V	–	45	60	ns



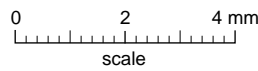
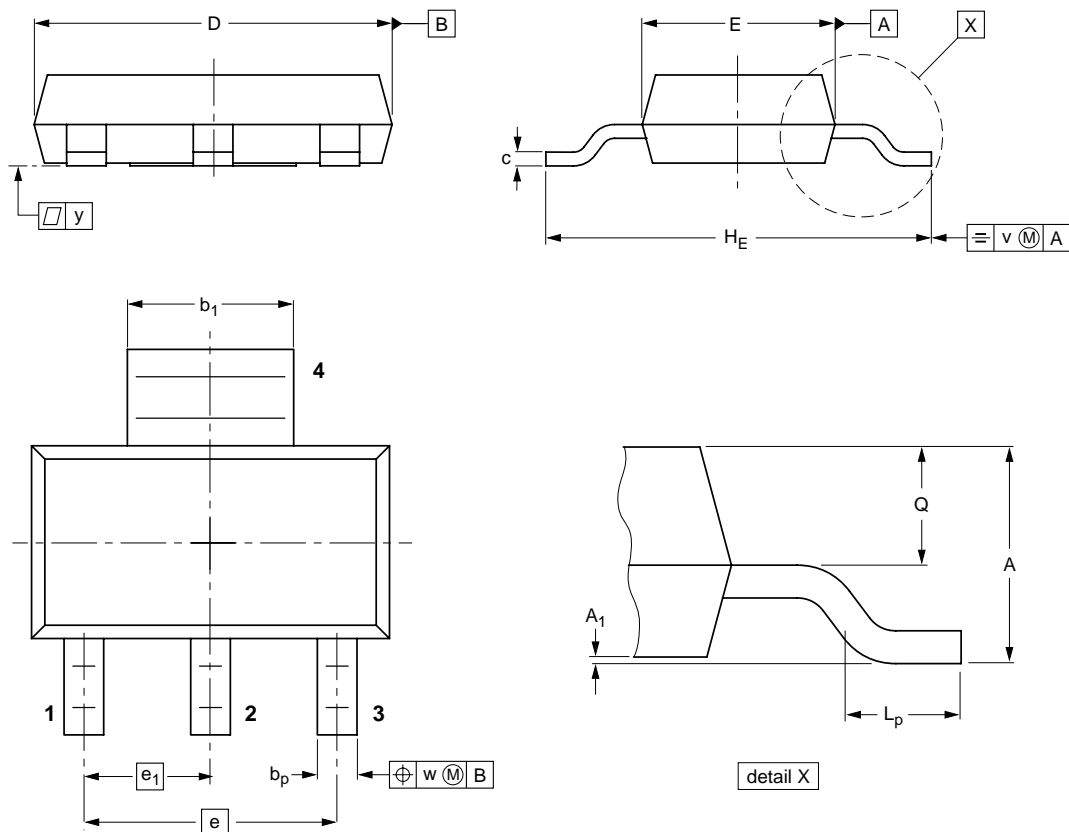
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PACKAGE OUTLINE

Plastic surface mounted package; collector pad for good heat transfer; 4 leads

SOT223



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁	b _p	b ₁	c	D	E	e	e ₁	H _E	L _p	Q	v	w	y
mm	1.8 1.5	0.10 0.01	0.80 0.60	3.1 2.9	0.32 0.22	6.7 6.3	3.7 3.3	4.6	2.3	7.3 6.7	1.1 0.7	0.95 0.85	0.2	0.1	0.1

OUTLINE VERSION	REFERENCES				EUROPEAN PROJECTION	ISSUE DATE
	IEC	JEDEC	EIAJ			
SOT223			SC-73			97-02-28 99-09-13

N-channel enhancement mode vertical D-MOS transistor

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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.
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NOTES

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