

N-channel enhancement mode vertical
D-MOS transistor

BSP127

FEATURES

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

DESCRIPTION

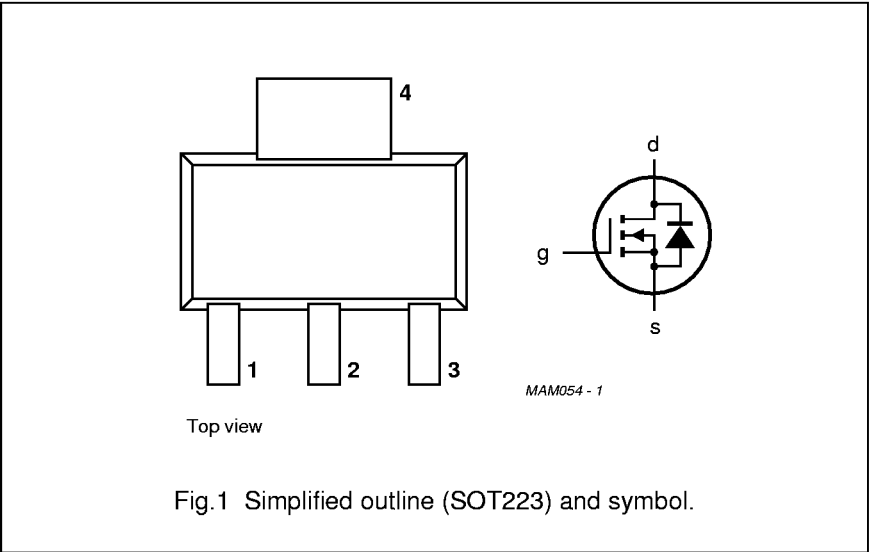
N-channel enhancement mode vertical D-MOS transistor in a SOT223 envelope and intended for use as a line current interruptor in telephone sets and for applications in relay, high-speed and line transformer drivers.

PINNING - SOT223

PIN	DESCRIPTION
Code: BSP127	
1	gate
2	drain
3	source
4	drain

QUICK REFERENCE DATA

SYMBOL	PARAMETER	MAX.	UNIT
V_{DS}	drain-source voltage	270	V
I_D	DC drain current	350	mA
$R_{DS(on)}$	drain-source on-resistance	8	Ω
$V_{GS(th)}$	gate-source threshold voltage	2	V



LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{DS}	drain-source voltage		—	270	V
$\pm V_{GSO}$	gate-source voltage	open drain	—	20	V
I_D	DC drain current		—	350	mA
I_{DM}	peak drain current		—	1.4	A
P_{tot}	total power dissipation	up to $T_{amb} = 25\text{ }^{\circ}\text{C}$ (note 1)	—	1.5	W
T_{stg}	storage temperature range		−65	150	$^{\circ}\text{C}$
T_j	junction temperature		—	150	$^{\circ}\text{C}$

THERMAL RESISTANCE

SYMBOL	PARAMETER	THERMAL RESISTANCE
$R_{th\ j-a}$	from junction to ambient (note 1)	83.3 K/W

Note

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

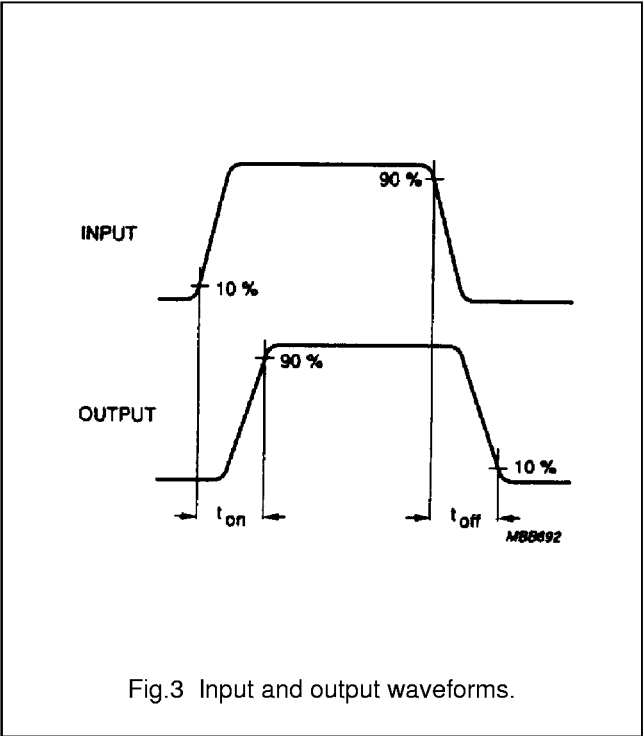
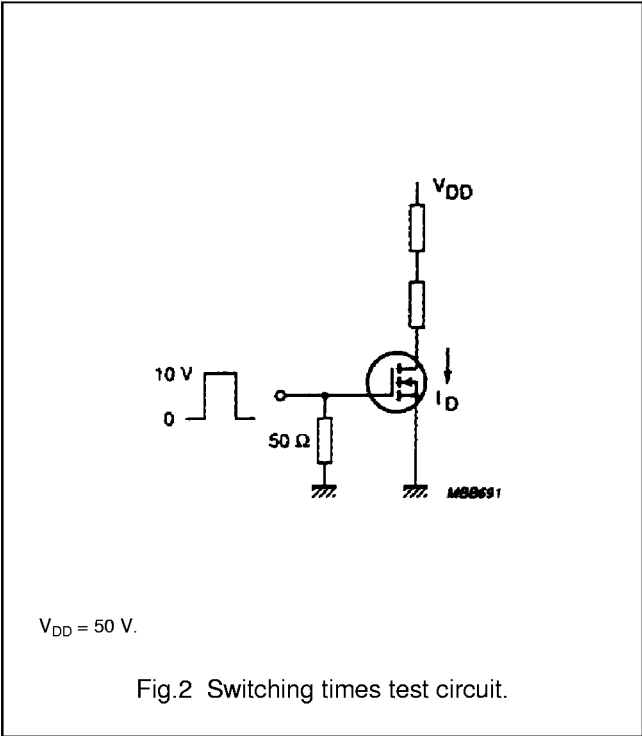
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CHARACTERISTICS

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	270	–	–	V
I _{DSS}	drain-source leakage current	V _{DS} = 220 V; V _{GS} = 0	–	–	1	µA
±I _{GSS}	gate-source leakage current	±V _{GS} = 20 V; V _{DS} = 0	–	–	100	nA
V _{GS(th)}	gate-source threshold voltage	I _D = 1 mA; V _{GS} = V _{DS}	0.8	–	2	V
R _{DS(on)}	drain-source on-resistance	I _D = 250 mA; V _{GS} = 10 V	–	6.5	8	Ω
		I _D = 20 mA; V _{GS} = 2.4 V	–	9	14	Ω
Y _{fs}	transfer admittance	I _D = 250 mA; V _{DS} = 25 V	200	400	–	mS
C _{iss}	input capacitance	V _{DS} = 25 V; V _{GS} = 0; f = 1 MHz	–	55	80	pF
C _{oss}	output capacitance	V _{DS} = 25 V; V _{GS} = 0; f = 1 MHz	–	20	30	pF
C _{rss}	feedback capacitance	V _{DS} = 25 V; V _{GS} = 0; f = 1 MHz	–	5	10	pF
Switching times (see Figs 2 and 3)						
t _{on}	turn-on time	I _D = 250 mA; V _{DD} = 50 V; V _{GS} = 0 to 10 V	–	5	10	ns
t _{off}	turn-off time	I _D = 250 mA; V _{DD} = 50 V; V _{GS} = 0 to 10 V	–	20	30	ns



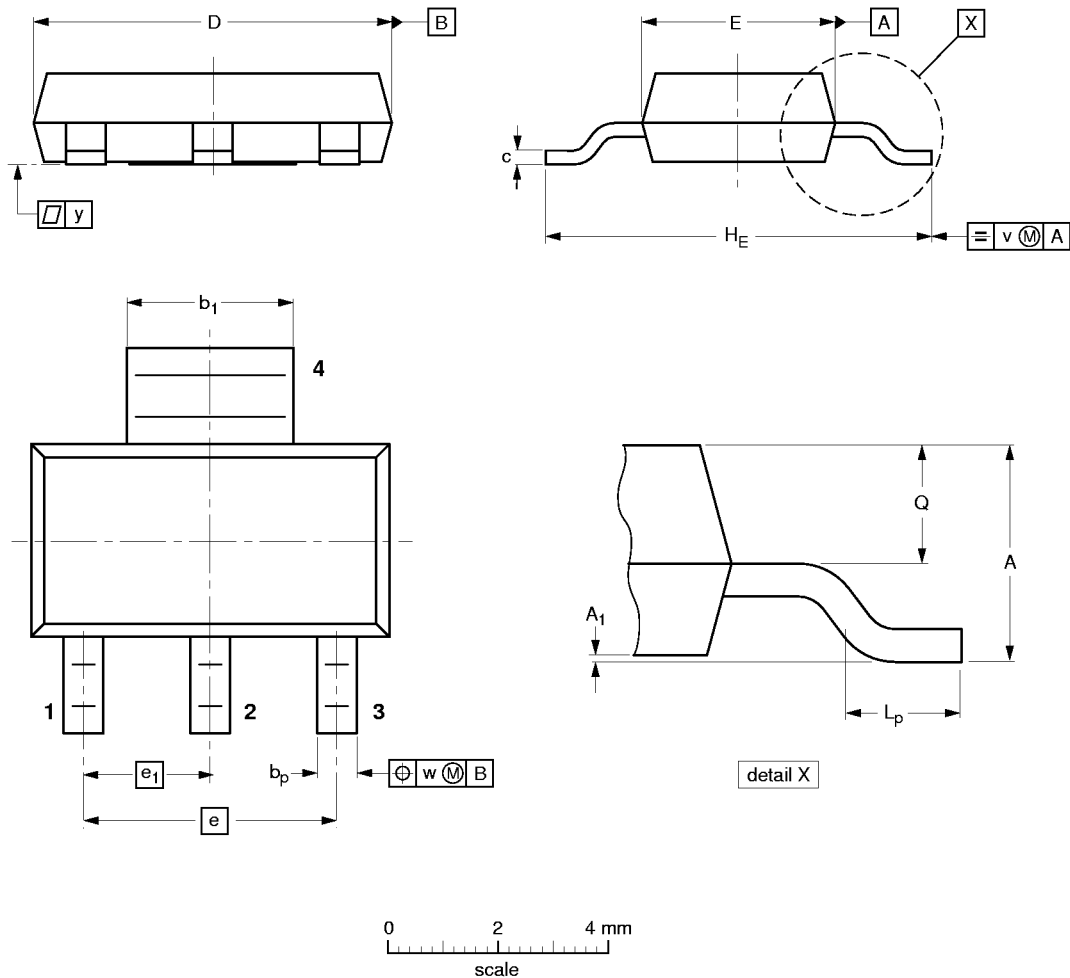
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PACKAGE OUTLINE

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						96-11-11 97-02-28