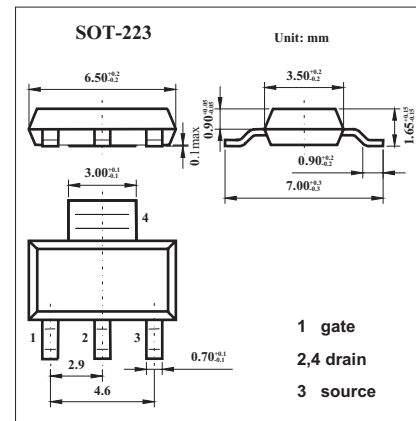
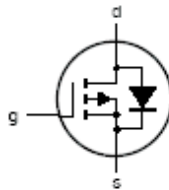


## P-channel enhancement mode vertical D-MOS transistor KSP92

### ■ Features

- Low threshold voltage  $V_{GS(th)}$
- Direct interface to C-MOS, TTL, etc.
- High-speed switching
- No secondary breakdown.



### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
drain-source voltage	$-V_{DS}$	240	V
gate-source voltage (open drain)	$\pm V_{GSO}$	20	V
DC drain current	$-I_D$	180	mA
peak drain current	$-I_{DM}$	720	mA
total power dissipation (up to $T_{amb} = 25^\circ\text{C}^*$ )	$P_{tot}$	1.5	W
storage temperature range	$T_{stg}$	-65 to 150	$^\circ\text{C}$
junction temperature	$T_j$	150	$^\circ\text{C}$
from junction to ambient*	$R_{th\ j-a}$	83.3	K/W

\* Transistor mounted on an epoxy printed circuit board, 40X40 X 1.5 mm,  
mounting pad for the drain tab minimum 6 cm<sup>2</sup>.

## KSP92

■ Electrical Characteristics  $T_a = 25^\circ\text{C}$  unless otherwise specified.

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
drain-source breakdown voltage	$-V_{(BR)DSS}$	$-I_D = 10\mu\text{A}; V_{GS} = 0$	240			V
drain-source leakage current	$-I_{DSS}$	$-V_{DS} = 200\text{ V}; V_{GS} = 0$			1	mA
gate-source leakage current	$\pm I_{GSS}$	$\pm V_{GS} = 20\text{ V}; V_{DS} = 0$			100	nA
gate-source threshold voltage	$-V_{GS(th)}$	$-I_D = 1\text{ mA}; V_{GS} = V_{DS}$	0.8		2	V
gate-source voltage	$-V_{GS}$	$-I_D = 50\text{ mA}; -V_{DS} = 5\text{ V}$	0.8		2.8	V
drain-source on-resistance	$R_{DS(on)}$	$-I_D = 180\text{ mA}; -V_{GS} = 10\text{ V}$		10	20	$\Omega$
		$-I_D = 100\text{ mA}; -V_{GS} = 5\text{ V}$			18	$\Omega$
		$-I_D = 25\text{ mA}; -V_{GS} = 2.8\text{ V}$			20	$\Omega$
transfer admittance	$ Y_{fs} $	$-I_D = 180\text{ mA}; -V_{DS} = 25\text{ V}$	100	200		mS
input capacitance	$C_{iss}$	$-V_{DS} = 25\text{ V}; V_{GS} = 0; f = 1\text{ MHz}$		65	90	pF
output capacitance	$C_{oss}$	$-V_{DS} = 25\text{ V}; V_{GS} = 0; f = 1\text{ MHz}$		20	30	pF
feedback capacitance	$C_{rss}$	$-V_{DS} = 25\text{ V}; V_{GS} = 0; f = 1\text{ MHz}$		6	15	pF
turn-on time (see Figs 1 and 2)	$t_{on}$	$-I_D = 250\text{ mA}; -V_{DD} = 50\text{ V}; -V_{GS} = 0\text{ to }10\text{ V}$		5	10	ns
turn-off time (see Figs 1 and 2)	$t_{off}$	$-I_D = 250\text{ mA}; -V_{DD} = 50\text{ V}; -V_{GS} = 0\text{ to }10\text{ V}$		20	30	ns

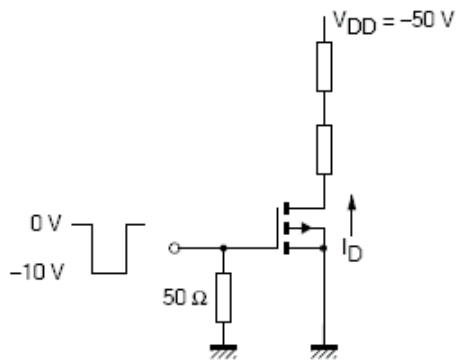


Fig.1 Switching times test circuit.

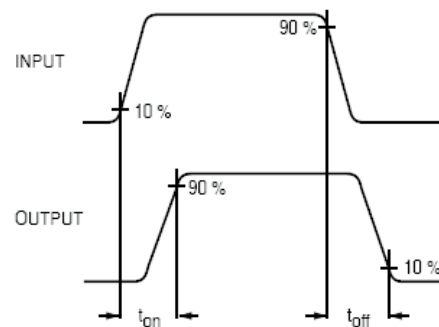


Fig.2 Input and output waveforms.