

INK0001AX SERIES

High speed switching
Silicon N-channel MOSFET

DESCRIPTION

INK0001AX is a Silicon N-channel MOSFET.
This product is most suitable for low voltage use such as portable machinery, because of low voltage drive and low on resistance.

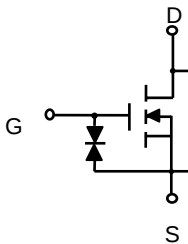
FEATURE

- Input impedance is high, and not necessary to consider a drive electric current.
- Drive voltage 2.5V
- Low on Resistance.
 $R_{DS(ON)} = 3.5 \Omega$ (TYP) @ $I_D = 100\text{mA}$, $V_{GS} = 4.0\text{V}$
- High speed switching.
- Small package for easy mounting.

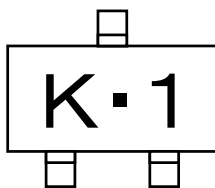
APPLICATION

High speed switching, Analog switching

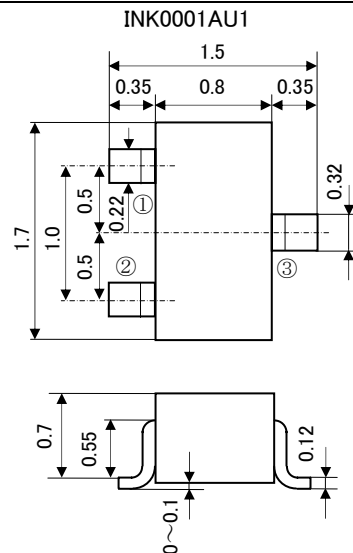
EQUIVALENT CIRCUIT



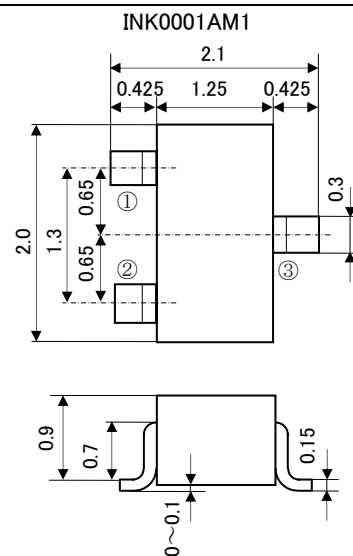
MARKING



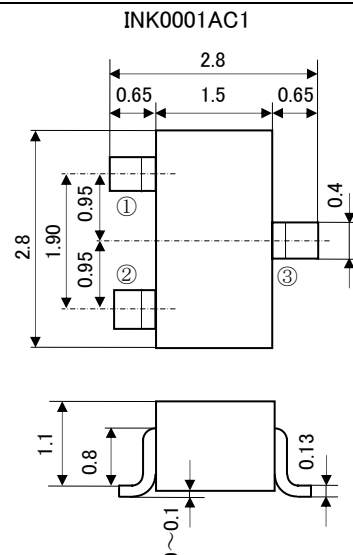
OUTLINE DRAWING (Unit:mm)



JEITA: SC-75A
JEDEC: —
TERMINAL CONNECTOR
①: GATE
②: SOURCE
③: DRAIN



JEITA: SC-70
JEDEC: —
TERMINAL CONNECTOR
①: GATE
②: SOURCE
③: DRAIN



JEITA: SC-59
JEDEC: Similar to TO-236
TERMINAL CONNECTOR
①: GATE
②: SOURCE
③: DRAIN

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MAXIMUM RATING (Ta=25°C)

SYMBOL	PARAMETER	RATING			UNIT
		INK0001AU1	INK0001AM1	INK0001AC1	
VDSS	Drain-source voltage	50			V
VGSS	Gate-source voltage	±8			V
ID	Drain current(DC)	100			mA
IDP	Drain current(Pulse)	400(※1)			mA
PD	Total power dissipation	150	200		mW
Tch	Channel temperature	+150			℃
Tstg	Range of Storage temperature	-55~+150			℃

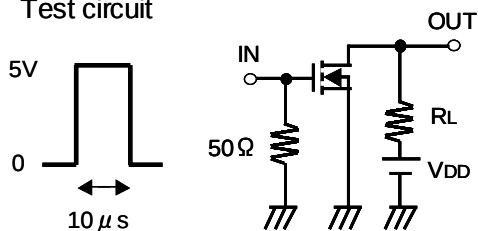
※1: Pw ≤ 10μs, Duty cycle ≤ 1%

ELECTRICAL CHARACTERISTICS (Ta=25°C)

SYMBOL	PARAMETER	TEST CONDITION	LIMIT			UNIT
			MIN	TYP	MAX	
V(BR)DSS	Drain-source breakdown voltage	I _D =100μA, V _{GS} =0V	50	—	—	V
I _{GSS}	Gate-source leak current	V _{GS} =±5V, V _{DS} =0V	—	—	±0.5	μA
I _{DSS}	Zero gate voltage drain current	V _{DS} =50V, V _{GS} =0V	—	—	1.0	μA
V _{th}	Gate threshold voltage	I _D =250μA, V _{DS} =V _{GS}	0.6	—	1.2	V
Y _{fs}	Forward transfer admittance	V _{DS} =10V, I _D =0.1A	—	250	—	mS
R _{DS(ON)}	Static drain-source on-state resistance	I _D =100mA, V _{GS} =4.0V	—	3.5	—	Ω
C _{iss}	Input capacitance	V _{DS} =10V, V _{GS} =0V, f=1MHz	—	24	—	pF
C _{oss}	Output capacitance		—	5	—	
t _{on}	Switching time	V _{DD} =5V, I _D =10mA V _{GS} =0~5V	—	11	—	ns
t _{off}			—	50	—	

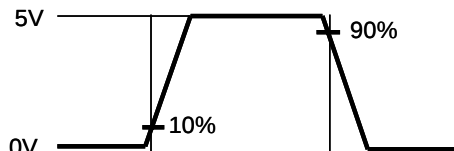
Switching time test condition

Test circuit

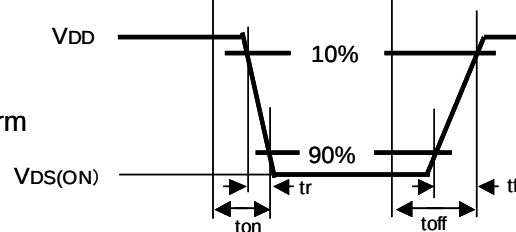


V_{DD}=5V
Duty ≤ 1%
Common source
Ta=25°C

Input Waveform



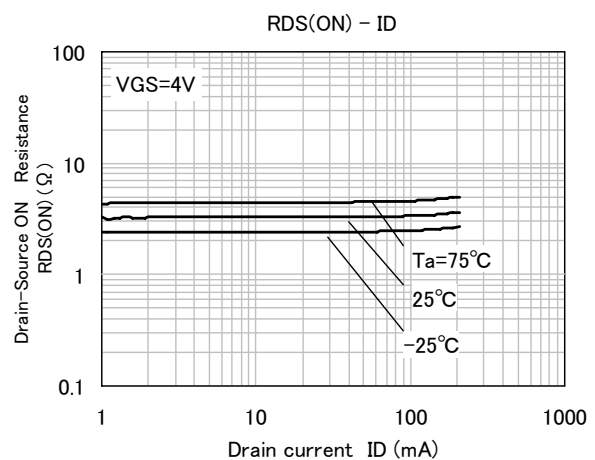
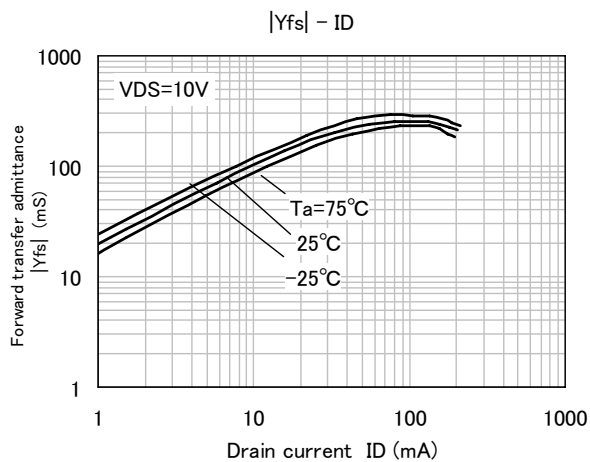
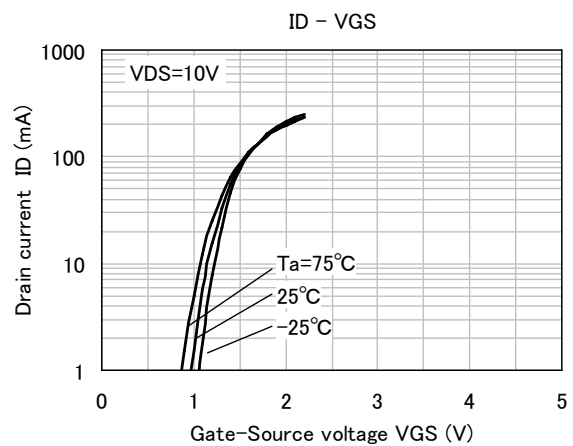
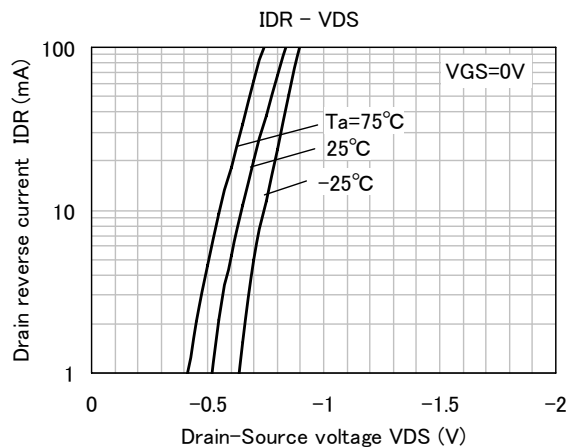
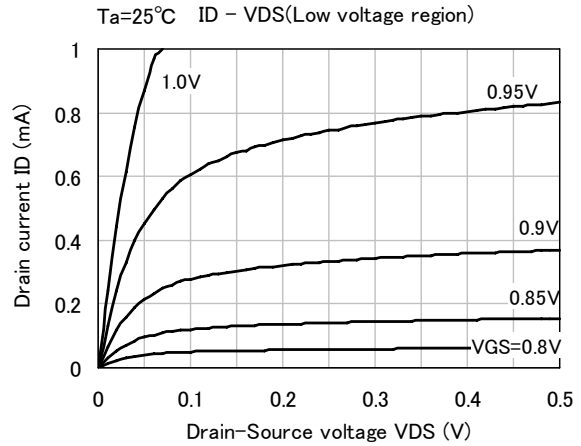
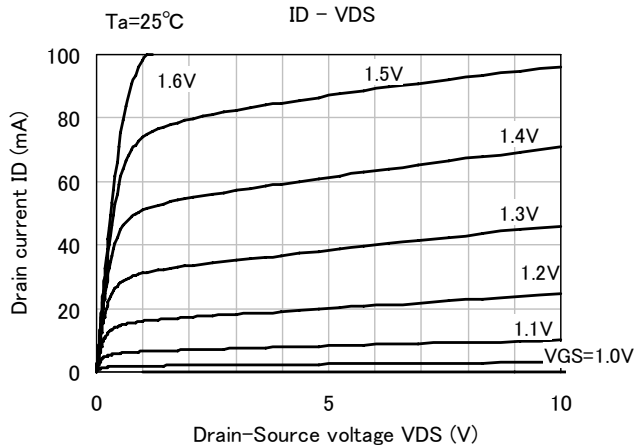
Output Waveform



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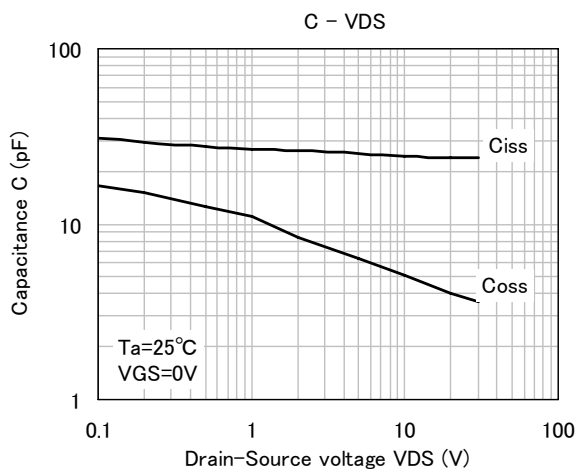
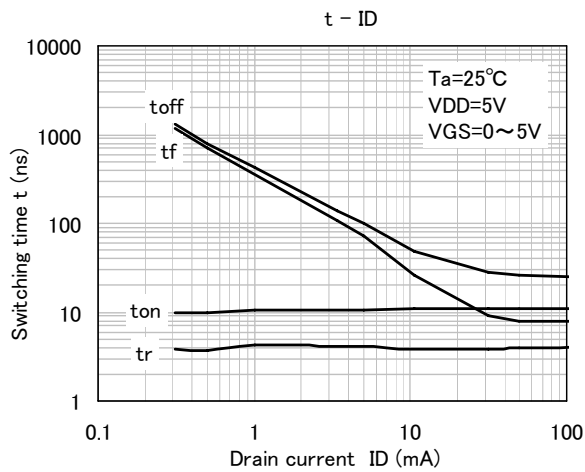
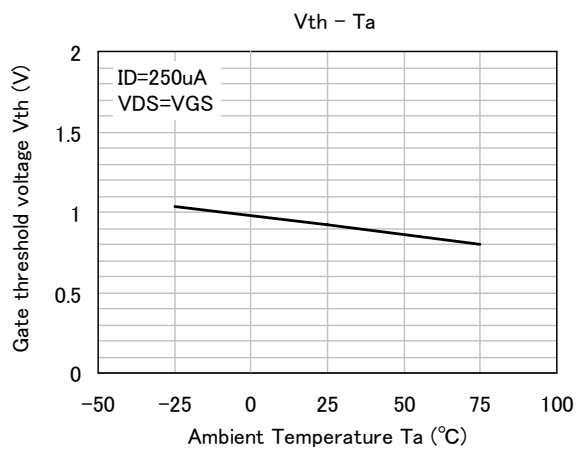
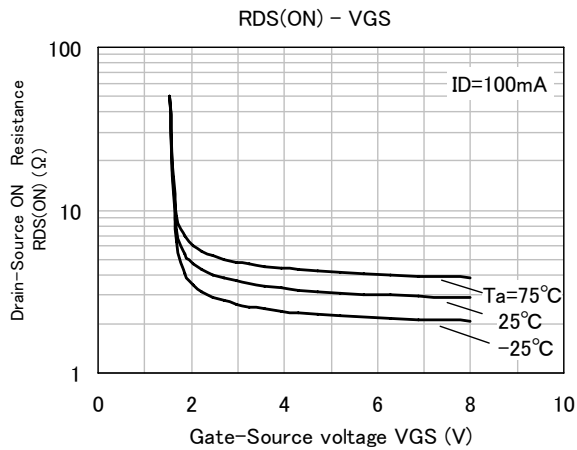
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TYPICAL CHARACTERISTICS



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Keep safety first in your circuit designs!

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