

# INK0003AX SERIES

High speed switching  
Silicon N-channel MOSFET

## DESCRIPTION

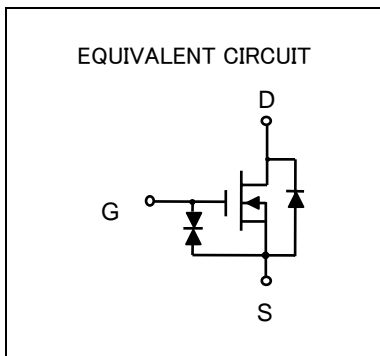
INK0003AX is a Silicon N-channel MOSFET.  
This product is most suitable for low voltage use such as portable machinery, because of low voltage drive and low on resistance.

## FEATURE

- Input impedance is high, and not necessary to consider a drive electric current.
- $V_{th}$  is low, and drive by low voltage is possible.  $V_{th}=0.6\sim 1.2V$
- Low on Resistance.  $R_{on}=0.9\Omega$  (TYP)
- High speed switching.
- Small package for easy mounting.

## APPLICATION

high speed switching, Analog switching



## OUTLINE DRAWING

Unit: mm

INK0003AT2 (PRELIMINARY)	INK0003AM1
<p>JEITA, JEDEC: — ISAHAYA: T-USM</p> <p>TERMINAL CONNECTOR ①: GATE ②: SOURCE ③: DRAIN</p>	<p>JEITA: SC-70 JEDEC: —</p> <p>TERMINAL CONNECTOR ①: GATE ②: SOURCE ③: DRAIN</p>
<p>JEITA: SC-75A JEDEC: —</p> <p>TERMINAL CONNECTOR ①: GATE ②: SOURCE ③: DRAIN</p>	<p>JEITA: SC-59 JEDEC: Similar to TO-236</p> <p>T TERMINAL CONNECTOR ①: GATE ②: SOURCE ③: DRAIN</p>

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High speed switching  
Silicon N-channel MOSFET

## MAXIMUM RATING (Ta=25°C)

SYMBOL	PARAMETER	RATING				UNIT
		INK0003AT2	INK0003AU1	INK0003AM1	INK0003AC1	
V <sub>DSS</sub>	Drain-source voltage	20				V
V <sub>GSS</sub>	Gate-source voltage	±8				V
I <sub>D</sub>	Drain current	200				mA
P <sub>D</sub>	Total power dissipation (Ta=25°C)	125(※)	150	200		mW
T <sub>ch</sub>	Channel temperature	+125	+150			°C
T <sub>stg</sub>	Range of Storage temperature	-55~+125	-55~+150			°C

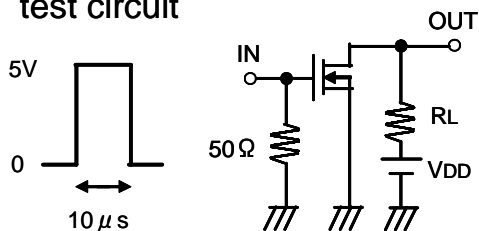
## ELECTRICAL CHARACTERISTICS (Ta=25°C)

※package mounted on 9mm × 19mm × 1mm glass-epoxy substrate.

SYMBOL	PARAMETER	TEST CONDITION	LIMIT			UNIT
			MIN	TYP	MAX	
V <sub>(BR)DSS</sub>	Drain-source breakdown voltage	I <sub>D</sub> =100 μA, V <sub>GS</sub> =0V	20	-	-	V
I <sub>GSS</sub>	Gate-source leak current	V <sub>GS</sub> =±5V, V <sub>DS</sub> =0V	-	-	±0.5	μA
I <sub>DSS</sub>	Zero gate voltage drain current	V <sub>DS</sub> =20V, V <sub>GS</sub> =0V	-	-	50	μA
V <sub>th</sub>	Gate threshold voltage	I <sub>D</sub> =250 μA, V <sub>DS</sub> =V <sub>GS</sub>	0.6	-	1.2	V
Y <sub>fs</sub>	Forward transfer admittance	V <sub>DS</sub> =10V, I <sub>D</sub> =0.1A	-	300	-	mS
R <sub>DS(ON)</sub>	Static drain-source on-state resistance	I <sub>D</sub> =100mA, V <sub>GS</sub> =4.0V	-	0.9	-	Ω
C <sub>iss</sub>	Input capacitance	V <sub>DS</sub> =10V, V <sub>GS</sub> =0V, f=1MHz	-	34	-	pF
C <sub>oss</sub>	Output capacitance	V <sub>DS</sub> =10V, V <sub>GS</sub> =0V, f=1MHz	-	8.5	-	pF
t <sub>ON</sub>	Switching time	V <sub>DD</sub> =5V, I <sub>D</sub> =10mA V <sub>GS</sub> =0~5V	-	14	-	ns
t <sub>OFF</sub>			-	85	-	

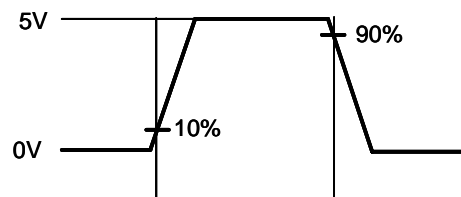
## Switching time test condition

### test circuit

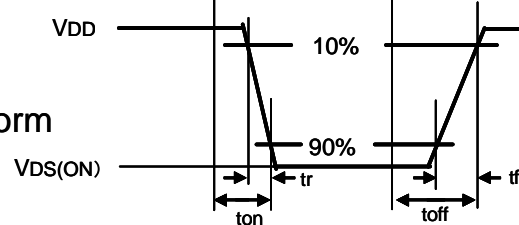


V<sub>DD</sub>=5V  
D.U. ≤ 1%  
Common source  
Ta=25°C

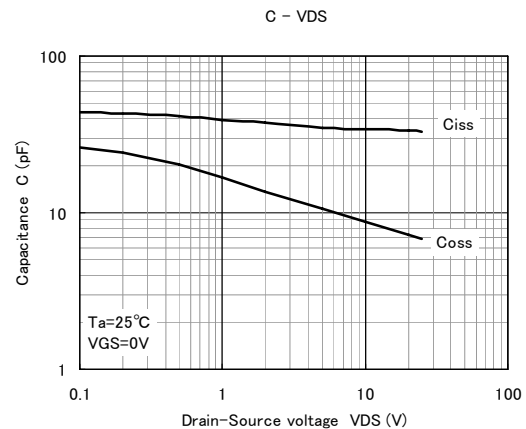
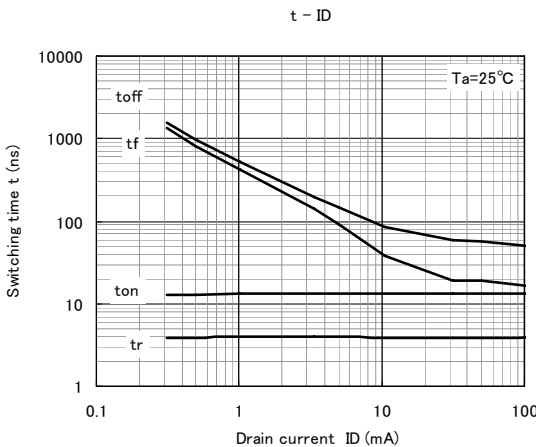
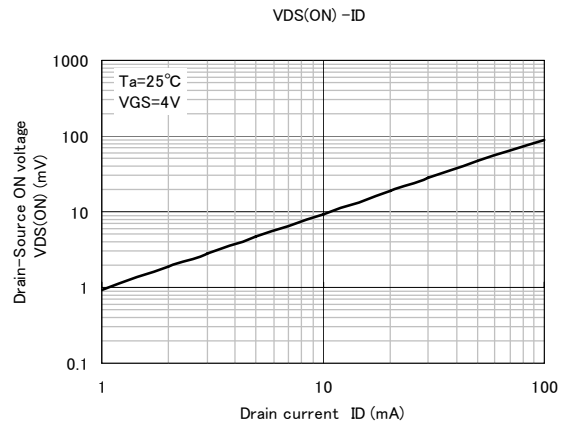
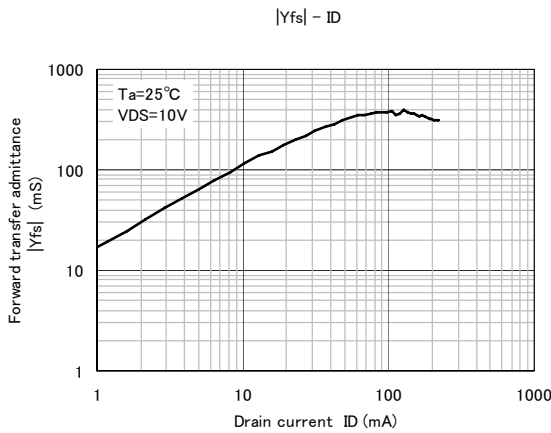
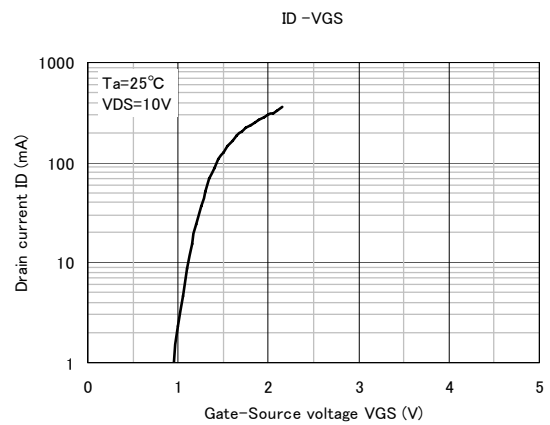
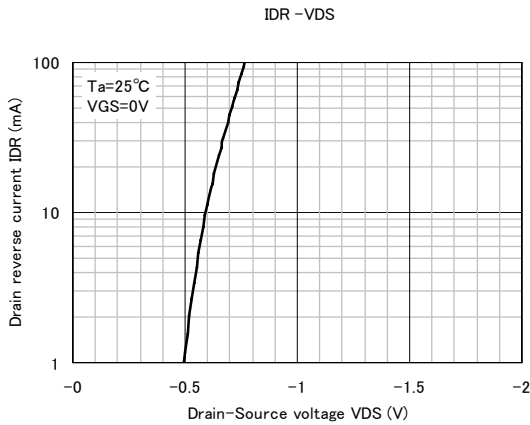
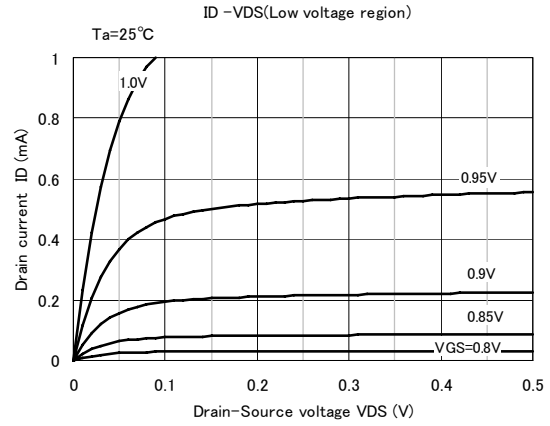
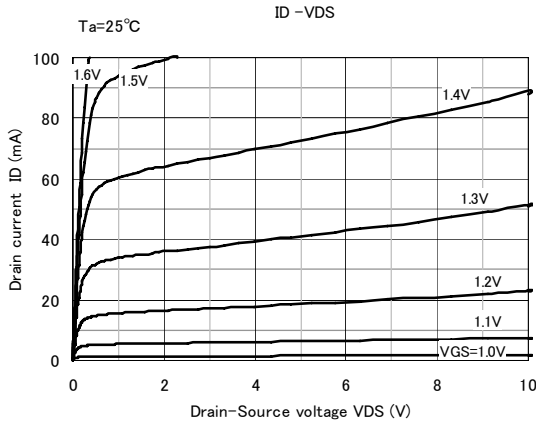
input waveform



output waveform



# TYPICAL CHARACTERISTICS





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