

# PRELIMINARY

Notice : This is not a final specification  
Some parametric are subject to change.

# INK0110AU1

High Speed Switching  
Silicon N-channel MOSFET

## DESCRIPTION

INK0110AU1 is a Silicon N-channel MOSFET.

This product is most suitable for 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.
- Low on Resistance.  
 $R_{DS(on)}=1.1\ \Omega$  (TYP) @ $I_D=0.3A, V_{GS}=10V$   
 $R_{DS(on)}=1.4\ \Omega$  (TYP) @ $I_D=0.3A, V_{GS}=4.5V$
- High speed switching.
- Small package for easy mounting.

## APPLICATION

High Speed Switching

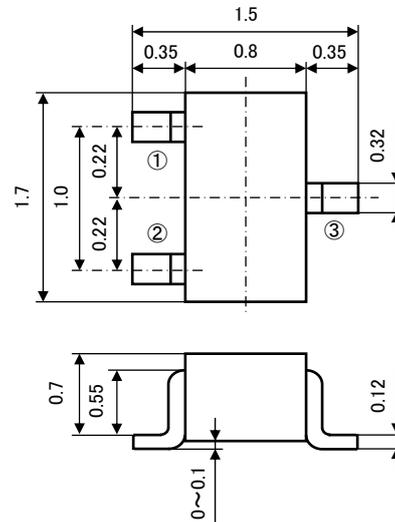
## MAXIMUM RATINGS (Ta=25°C)

| Parameter               | Symbol           | Rating   | Unit |
|-------------------------|------------------|----------|------|
| Drain-Source voltage    | V <sub>DS</sub>  | 60       | V    |
| Gate-Source voltage     | V <sub>GS</sub>  | ±20      | V    |
| Drain current(DC)       | I <sub>D</sub>   | 0.38     | A    |
| Drain current(Pulse) ※1 | I <sub>DP</sub>  | 0.76     | A    |
| Total power dissipation | P <sub>D</sub>   | 150      | mW   |
| Channel temperature     | T <sub>ch</sub>  | +150     | °C   |
| Storage temperature     | T <sub>stg</sub> | -55~+150 | °C   |

※1: Pw ≤ 10 μs, Duty cycle ≤ 1%

## OUTLINE DRAWING

UNIT:mm



JEITA: SC-75A

JEDEC:-

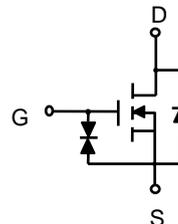
TERMINAL CONNECTOR

①: GATE

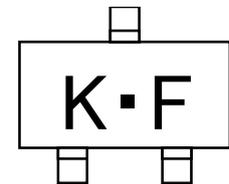
②: SOURCE

③: DRAIN

## EQUIVALENT CIRCUIT



## MARKING



## ELECTRICAL CHARACTERISTICS (Ta=25°C)

| Parameter                               | Symbol              | Test Condition                                           | Limit |     |     | Unit |
|-----------------------------------------|---------------------|----------------------------------------------------------|-------|-----|-----|------|
|                                         |                     |                                                          | MIN   | TYP | MAX |      |
| Drain-Source breakdown voltage          | V(BR)DSS            | I <sub>D</sub> =100 μA, V <sub>GS</sub> =0V              | 60    | -   | -   | V    |
| Gate-Source leak current                | I <sub>GS</sub>     | V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V               | -     | -   | ±10 | μA   |
| Zero Gate voltage drain current         | I <sub>DSS</sub>    | V <sub>DS</sub> =60V, V <sub>GS</sub> =0V                | -     | -   | 1   | μA   |
| Gate threshold voltage                  | V <sub>th</sub>     | I <sub>D</sub> =250 μA, V <sub>DS</sub> =V <sub>GS</sub> | 1.0   | -   | 2.0 | V    |
| Forward transfer admittance             | Y <sub>fs</sub>     | V <sub>DS</sub> =10V, I <sub>D</sub> =0.2A               | -     | 460 | -   | mS   |
| Static Drain-Source on-state resistance | R <sub>DS(ON)</sub> | I <sub>D</sub> =0.3A, V <sub>GS</sub> =10V               | -     | 1.1 | -   | Ω    |
|                                         |                     | I <sub>D</sub> =0.3A, V <sub>GS</sub> =4.5V              | -     | 1.4 | -   | Ω    |
| Input capacitance                       | C <sub>iss</sub>    | V <sub>DS</sub> =10V, V <sub>GS</sub> =0V, f=1MHz        | -     | 33  | -   | pF   |
| Output capacitance                      | C <sub>oss</sub>    |                                                          | -     | 7.3 | -   | pF   |
| Feedback capacitance                    | C <sub>rss</sub>    |                                                          | -     | 3.7 | -   | pF   |
| Switching time                          | t <sub>on</sub>     | V <sub>DD</sub> =10V, I <sub>D</sub> =0.3A               | -     | 28  | -   | ns   |
|                                         | t <sub>off</sub>    | V <sub>GS</sub> =0~5V                                    | -     | 21  | -   | ns   |

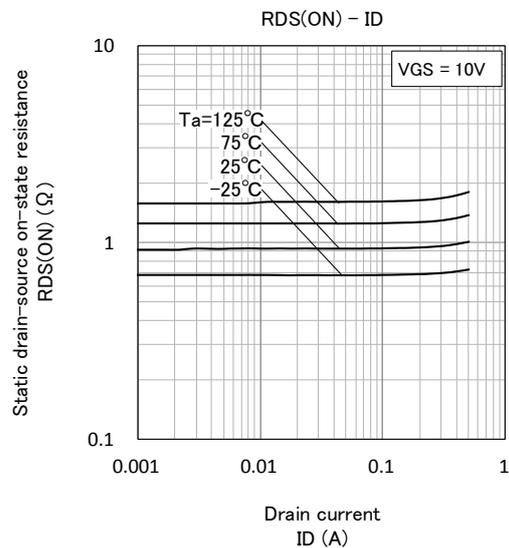
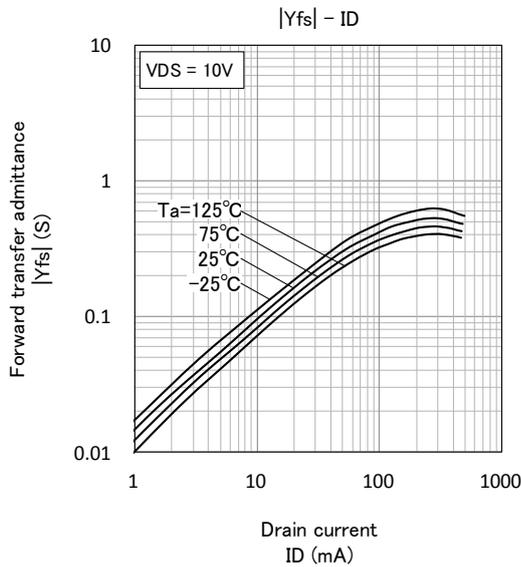
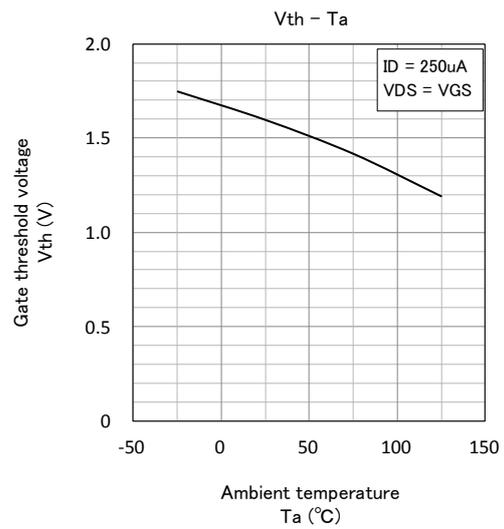
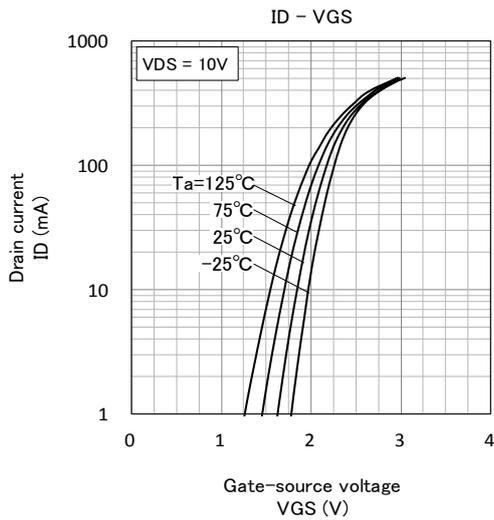
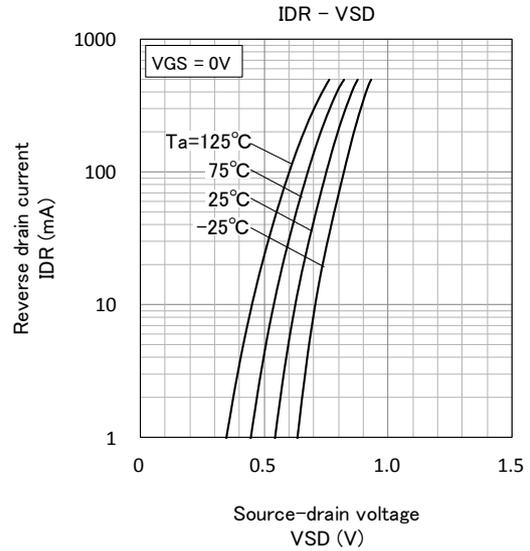
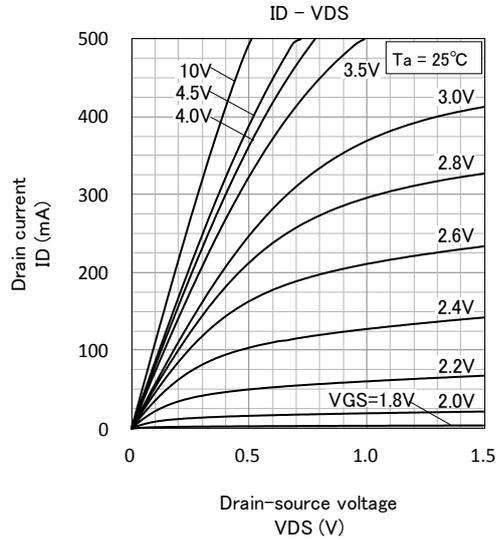
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## TYPICAL CHARACTERISTICS

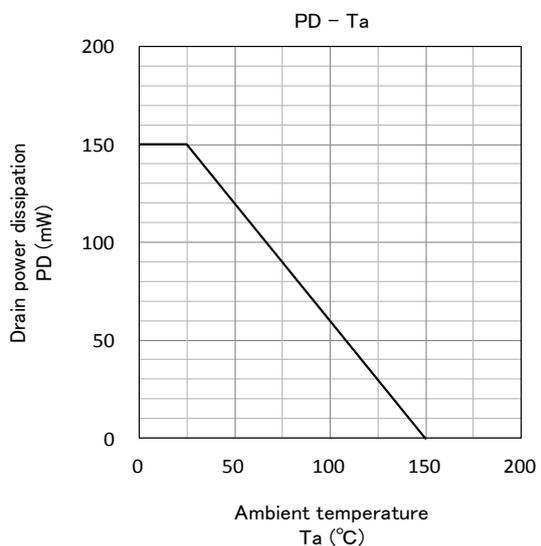
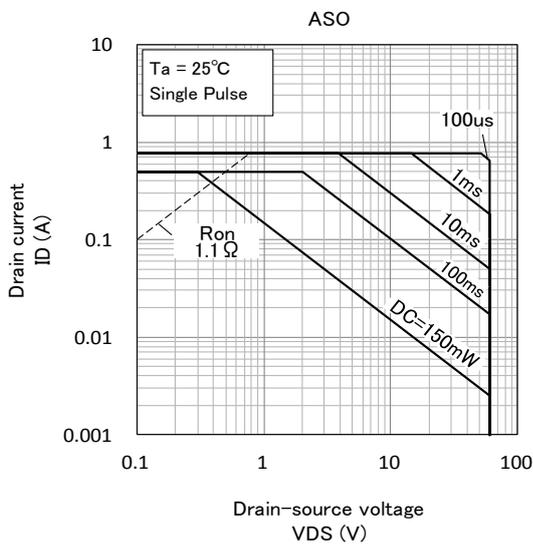
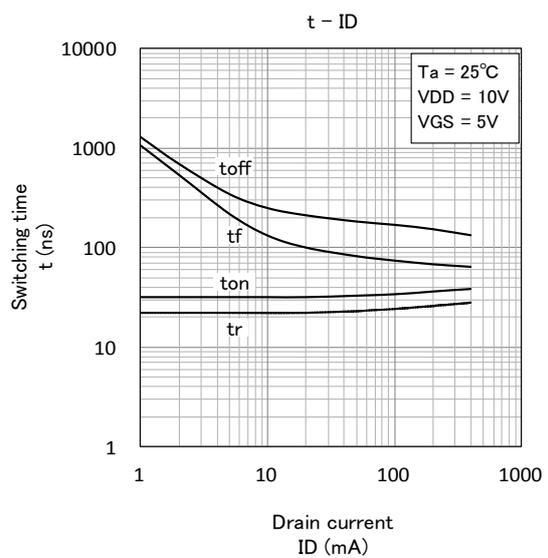
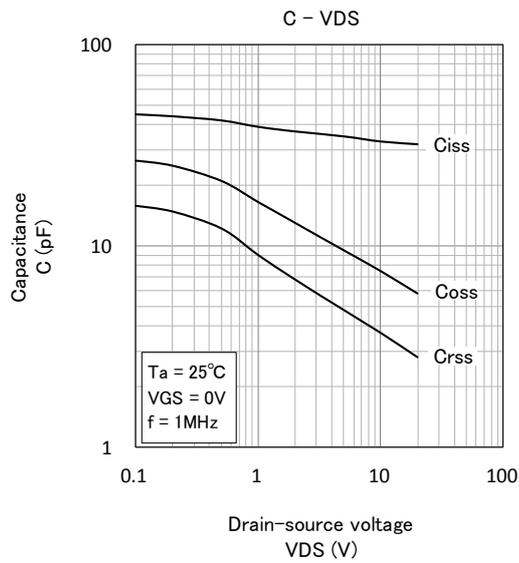
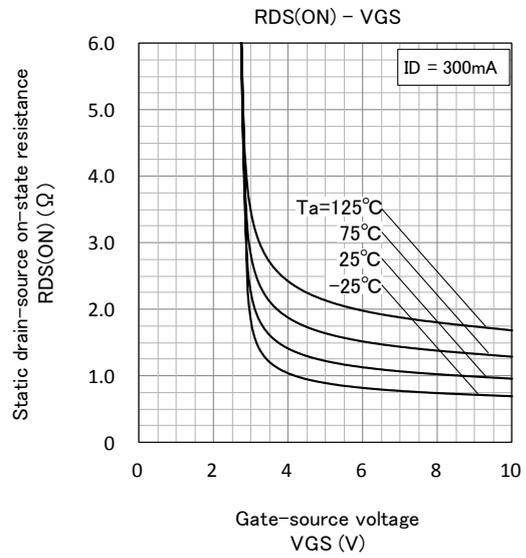
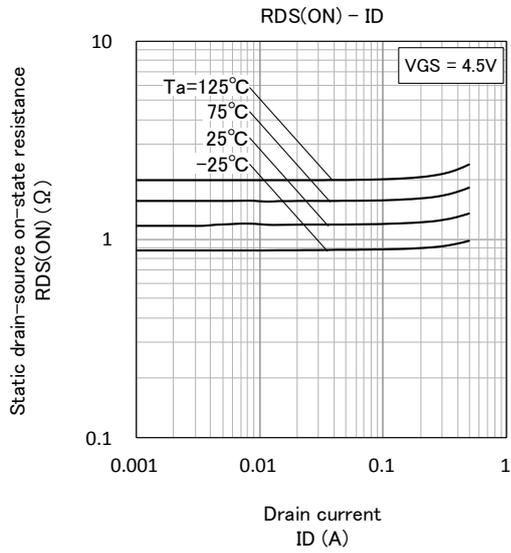


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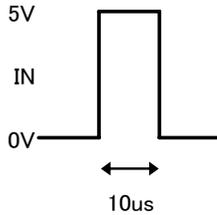
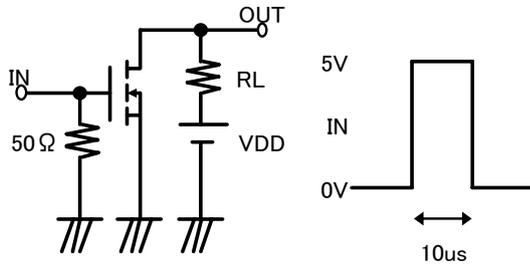
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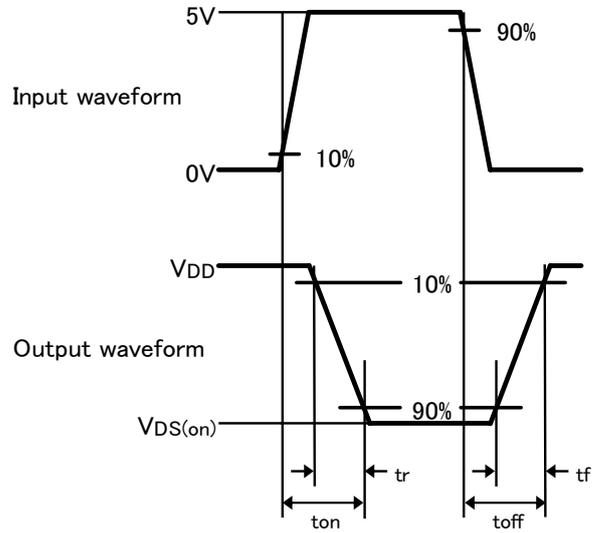
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### Switching time test condition



Duty  $\leq$  1%  
Input:  $t_r, t_f < 10\text{ns}$   
VDD = 10V  
Common source  
Ta = 25°C



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**Keep safety first in your circuit designs!**

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