# INK011BAP1

High Speed Switching
Silicon N-channel MOSFET

## DESCRIPTION

INK011BAP1 is a Silicon N-channel MOSFET.
This product is most suitable for use such as portable machinery , because voltage drive and low on resistance.

## FEATURE

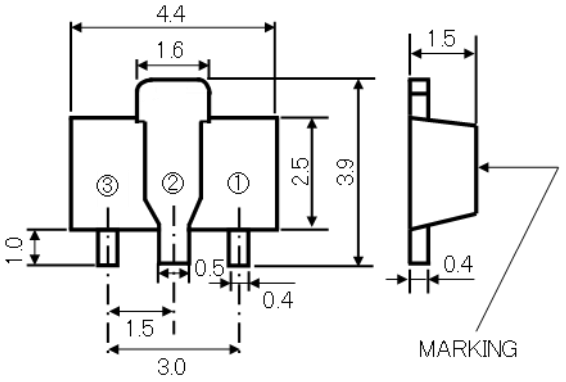
・Input impedance is high, and not necessary to consider a drive electric current.
・High drain current $I_D$=1.2A
・Drive voltage 4.0V
・High power dissipation $P_D$=1.0W (package mounted on substrate)

## FEATURE

Switching

## OUTLINE DRAWING

UNIT:mm



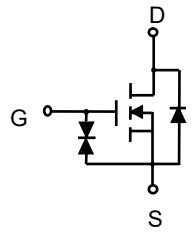

TERMINAL CONNECTER
①:GATE
②:DRAIN
③:SOURCE

JEITA:SC-62
JEDEC:SOT-89

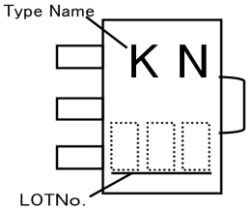
## MAXIMUM RATINGS(Ta=25℃)

| Symbol | Parameter | Rating | Unit |
|---|---|---|---|
| $V_{DSS}$ | Drain-Source Voltage | 150 | V |
| $V_{GSS}$ | Gate-Source Voltage | ±20 | V |
| $I_D$ | Drain Current(DC) | 1.2 | A |
| $I_{DP}$ | Drain Current(Pulse) | 7(※1) | A |
| $P_D$ | Total Power Dissipation※2 | 0.5 | W |
| | | 1.0(※2) | |
| $T_{ch}$ | Channel Temperature | +150 | ℃ |
| $T_{stg}$ | Storage temperature | −55～+150 | ℃ |

## EQUIVALENT CIRCUIT




## MARKING




※1:Pw≦1ms , Duty cycle≦1%

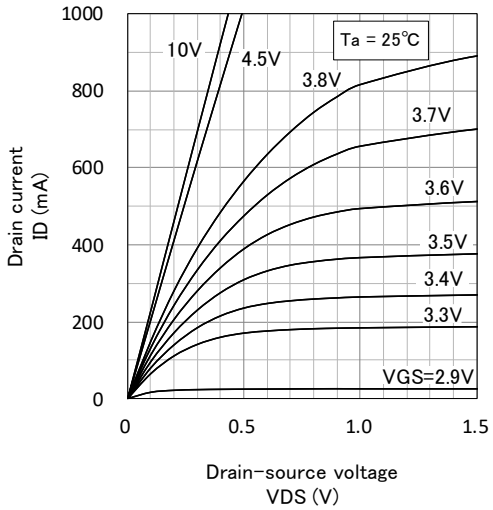
※2:package mounted on glass-epoxy substrate (20mm×20mm×1mm,Cu pad 257mm²).

## ELECTRICAL CHARACTERISTICS(Ta=25℃)

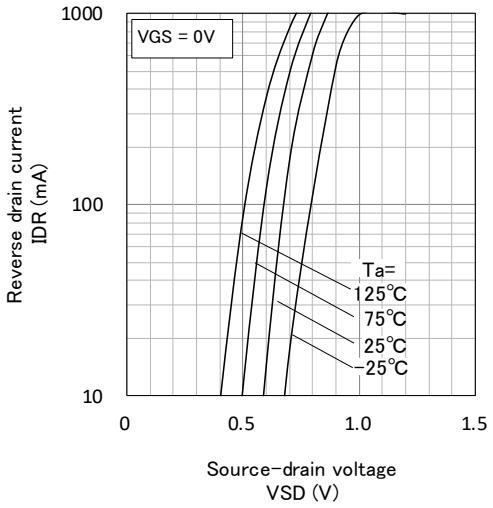
| Parameter | Symbol | Test Condition | Limit | | | Unit |
|---|---|---|---|---|---|---|
| | | | MIN | TYP | MAX | |
| Drain-Source Breakdown Voltage | $V_{(BR)DSS}$ | $I_D$=100μA, $V_{GS}$=0V | 150 | − | − | V |
| Gate-Source Leak current | $I_{GSS}$ | $V_{GS}$=±20V, $V_{DS}$=0V | − | − | ±10 | μA |
| Zero Gate Voltage Drain Current | $I_{DSS}$ | $V_{DS}$=150V ,$V_{GS}$=0V | − | − | 1.0 | μA |
| Gate Threshold Voltage | $V_{th}$ | $I_D$=250μA, $V_{DS}$= $V_{GS}$ | 1.0 | − | 2.5 | V |
| Forward Transfer Admittance | \| $Y_{fs}$ \| | $V_{DS}$=10V, $I_D$=1A | − | 3.0 | − | S |
| Static Drain-Source On-State Resistance | $R_{DS(ON)}$ | $I_D$=0.5A, $V_{GS}$=4.5V | − | 0.5 | 0.8 | Ω |
| Input Capacitance | $C_{iss}$ | $V_{DS}$=10V, $V_{GS}$=0V, f=1MHz | − | 220 | − | pF |
| Output Capacitance | $C_{oss}$ | | − | 55 | − | pF |
| Switching Time | $t_{on}$ | $V_{DD}$=30V, $I_D$=1A $V_{GS}$=0～5V | − | 260 | − | ns |
| | $t_{off}$ | | − | 1660 | − | ns |

## TYPICAL CHARACTERISTICS

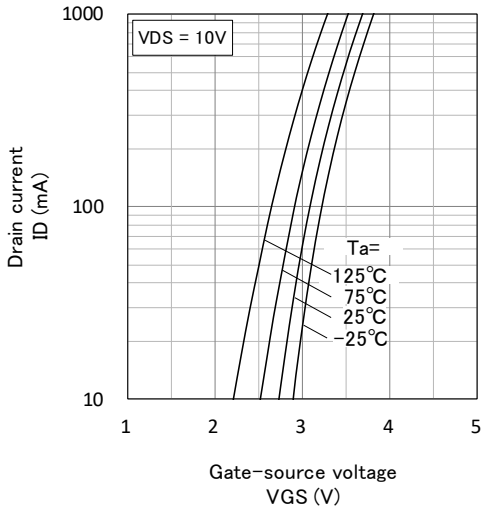
ID – VDS



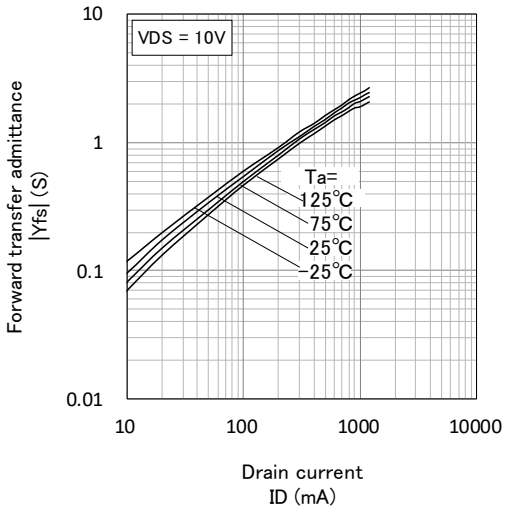

IDR – VSD



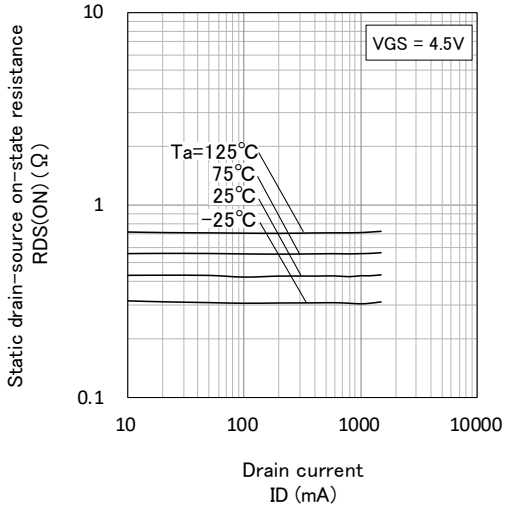

ID – VGS



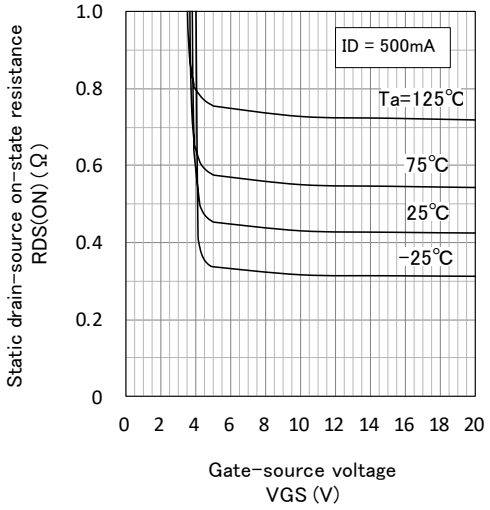

|Yfs| – ID



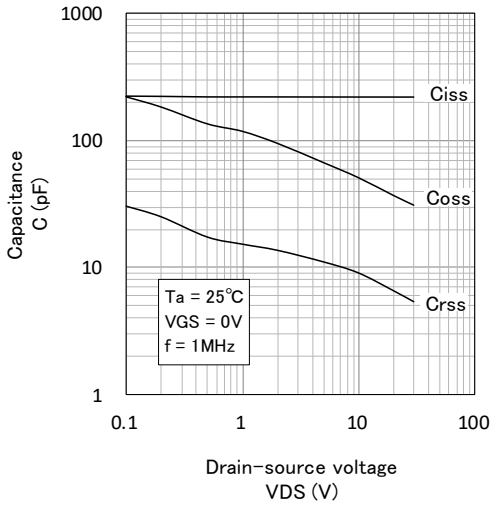

RDS(ON) – ID



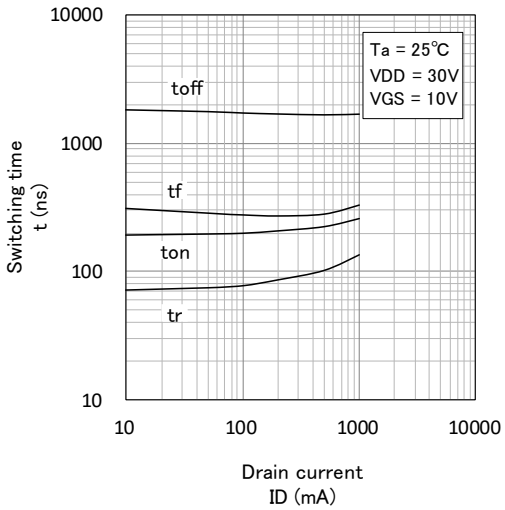

RDS(ON) – VGS



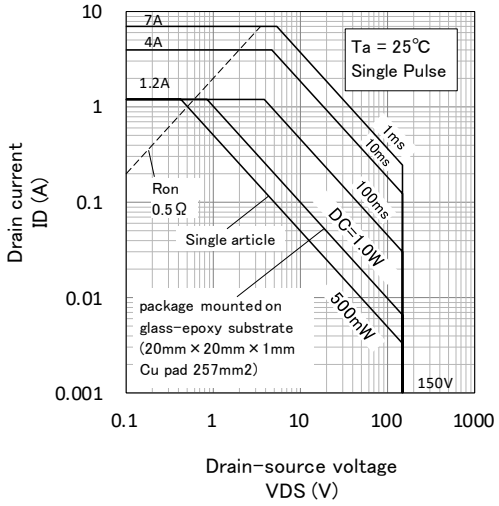
C – VDS



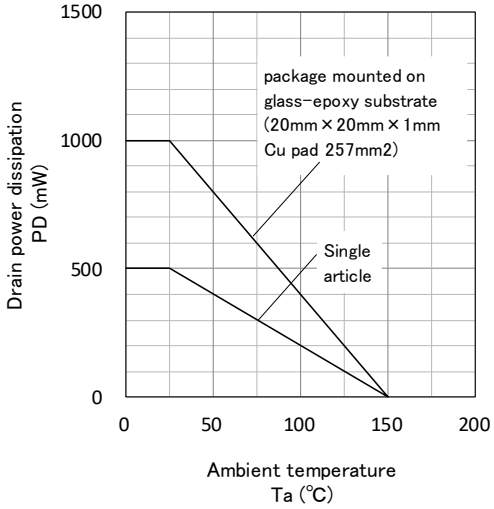

t – ID



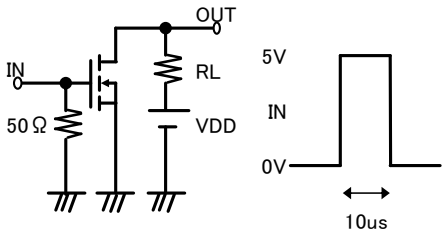

ASO



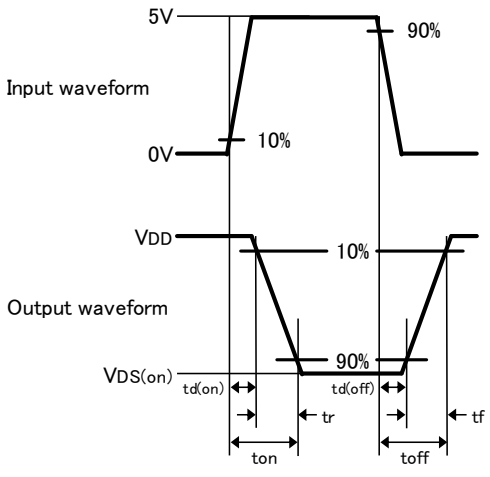

PD – Ta




Switching time test condition




Duty ≦ 1%
Input: tr, tf < 10ns
VDD = 30V
Common source
Ta = 25℃



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

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