PRELIMINARY

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

INK0102AU1

High speed switching
Silicon N-channel MOSFET

DESCRIPTION

INK0102AU1 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 resistance.

FEATURE

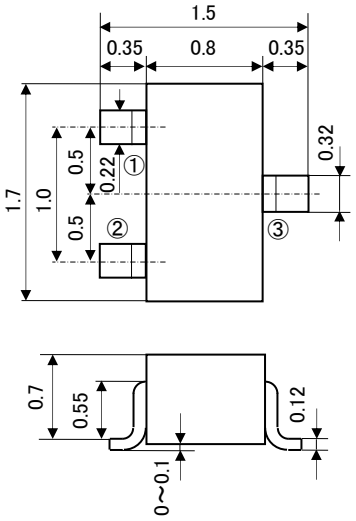
・Input impedance is high, and not necessary to consider a drive electric current.
・Drive voltage 2.5V
・Low on Resistance.
$R_{DS(ON)}$=0.35Ω(TYP) @I_D=0.2A,V_{GS}=4.5V
$R_{DS(ON)}$=0.48Ω(TYP) @I_D=0.1A,V_{GS}=2.5V
・High speed switching.
・Small packing for easy mounting.

APPLICATION

Inductive loads switching

OUTLINE DRAWING

Unit : mm



JEITA— : SC-75A
JEDEC : —

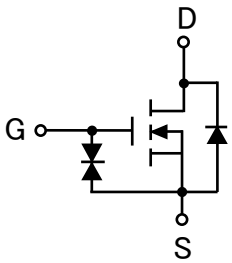
TERMINAL CONNECTOR
①:GATE
②:SOURCE
③:DRAIN

MAXIMUM RATINGS (Ta=25℃)

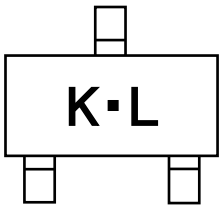
Symbol	Parameter	Rating	Unit
V_{DSS}	Drain-source voltage	30	V
V_{GSS}	Gate-Source Voltage	±8	V
I_D	Drain Current(DC)	0.55	A
I_{DP}	Drain current(Pulse)	1.5(※1)	A
P_D	Total Power Dissipation	150	mW
T_{ch}	Channel Temperature	+150	℃
T_{stg}	Storage temperature	−55～+150	℃

※1 Single pulse Pw≦10μs , Duty cycle≦1%

EQUIVALENT CIRCUIT



MARKING

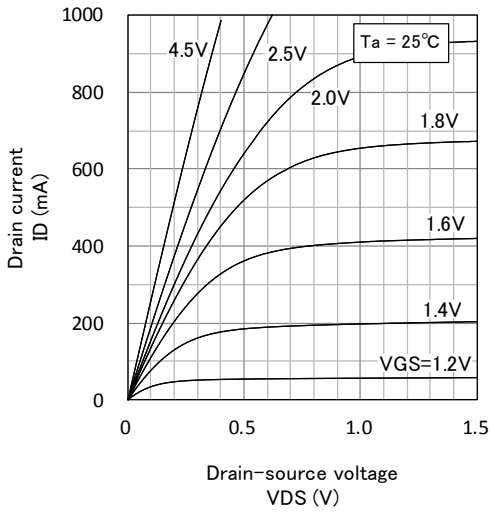


ELECTRICAL CHARACTERISTICS (Ta=25℃)

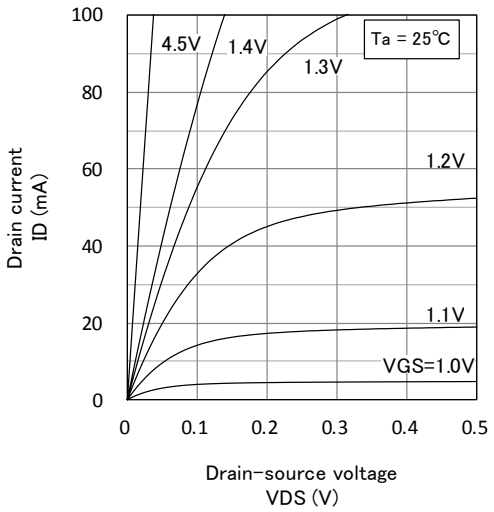
Parameter	Symbol	Test Condition	Limit			Unit
			MIN	TYP	MAX	
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=100μA, V_{GS}=0V	30	−	−	V
Gate-Source Leak current	I_{GSS}	V_{GS}=±8V, V_{DS}=0V	−	−	±10	μA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V, V_{GS}=0V	−	−	1	μA
Gate Threshold Voltage	V_{th}	I_D=250μA, V_{DS}=V_{GS}	0.4	−	1.1	V
Forward Transfer Admittance	| Y_{fs} |	V_{DS}=10V, I_D=0.1A	−	700	−	mS
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	I_D=0.2A, V_{GS}=4.5V	−	0.35	0.5	Ω
		I_D=0.1A, V_{GS}=2.5V	−	0.48	0.7	
Input Capacitance	C_{iss}	V_{DS}=10V, V_{GS}=0V,f=1MHz	−	62	−	pF
Output Capacitance	C_{oss}		−	10	−	
Switching Time	t_{on}	V_{DD}=10V , I_D=0.5A	−	23	−	ns
	t_{off}	V_{GS}=0～4.5V	−	28	−	

TYPICAL CHARACTERISTICS

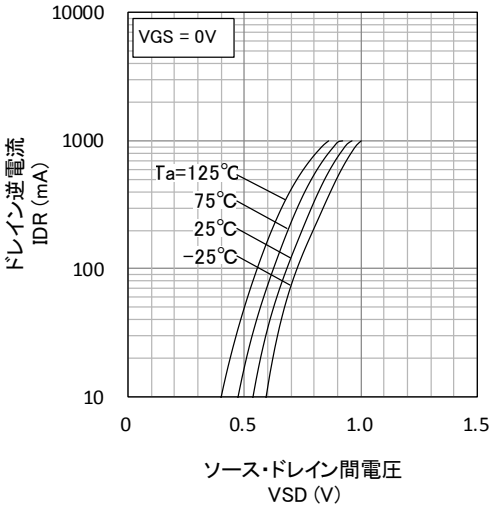
ID – VDS



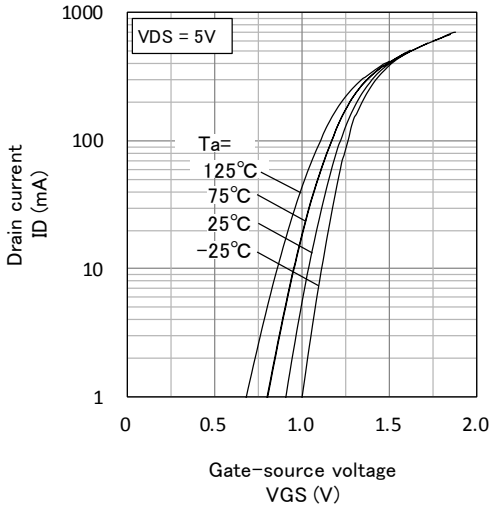
ID – VDS(Low voltage legion)



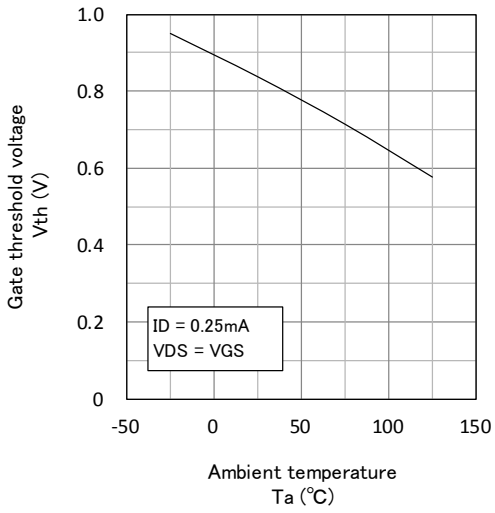
IDR – VSD



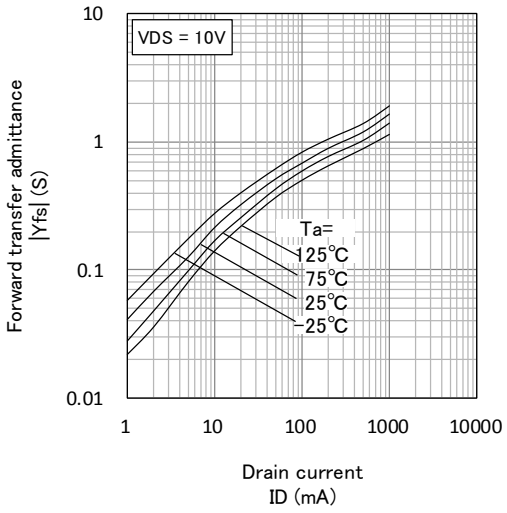
ID – VGS



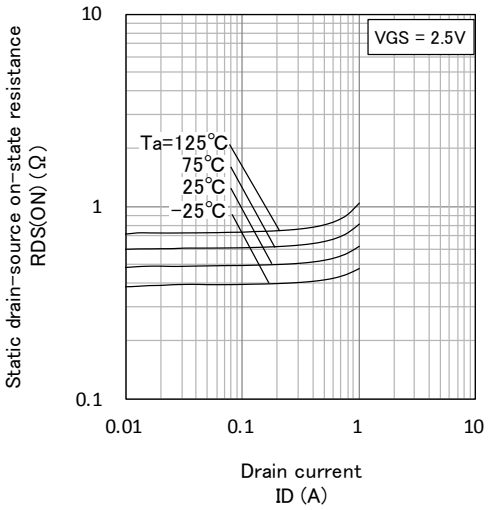
Vth – Ta



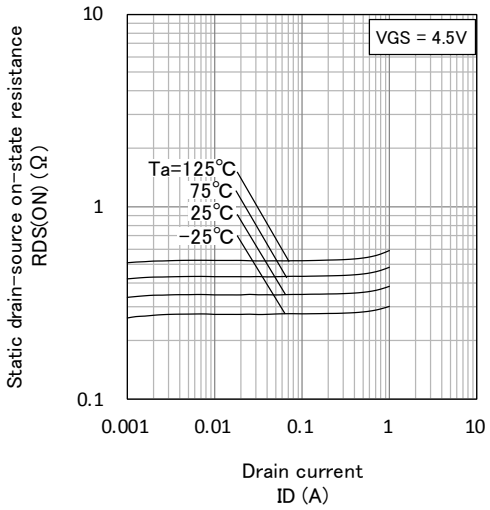
|Yfs| – ID



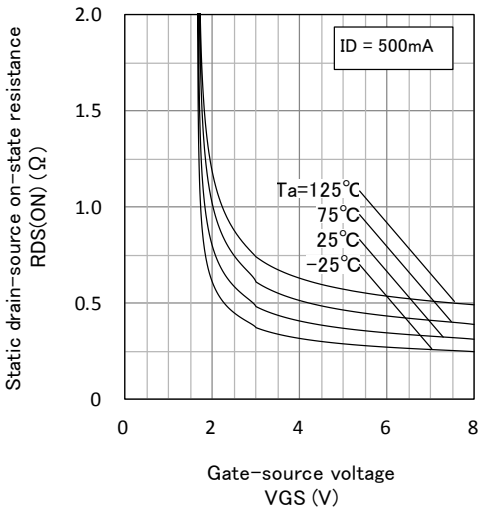
RDS(ON) – ID



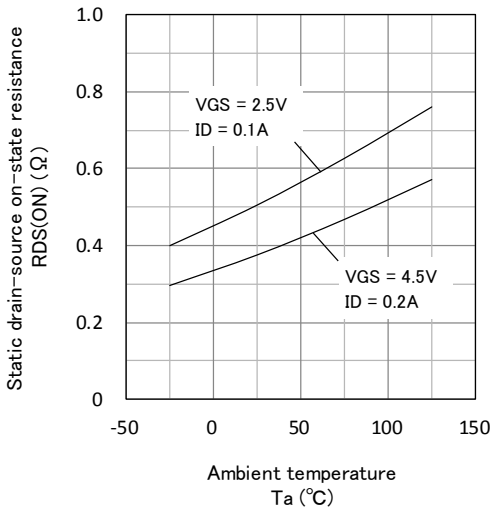
RDS(ON) – ID



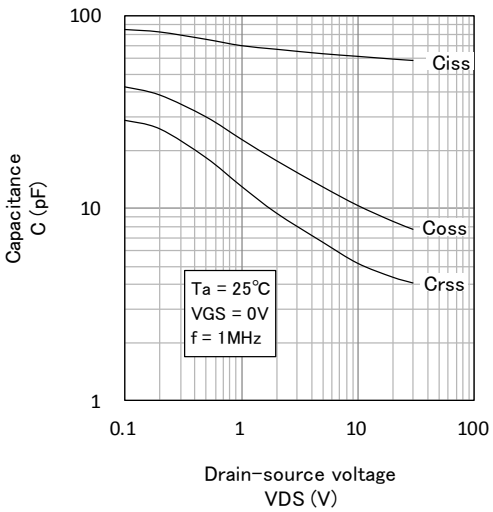
RDS(ON) – VGS



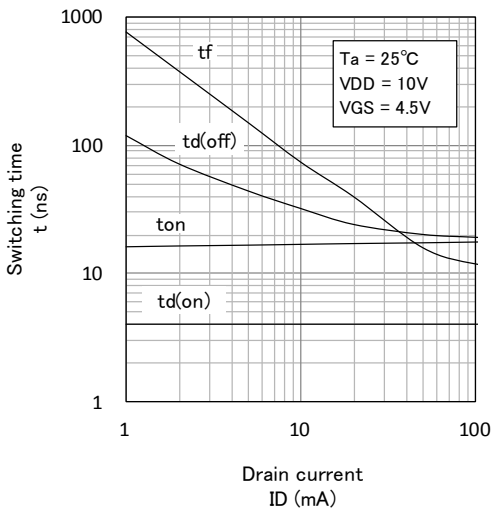
RDS(ON) – Ta

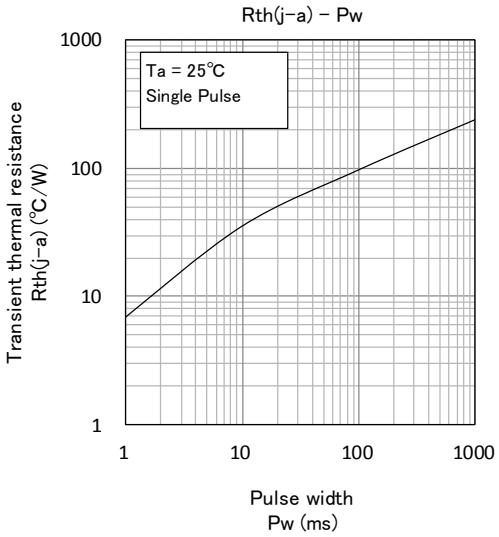


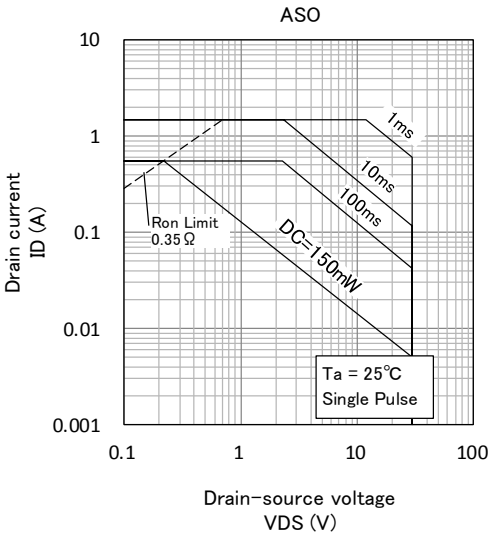
C – VDS

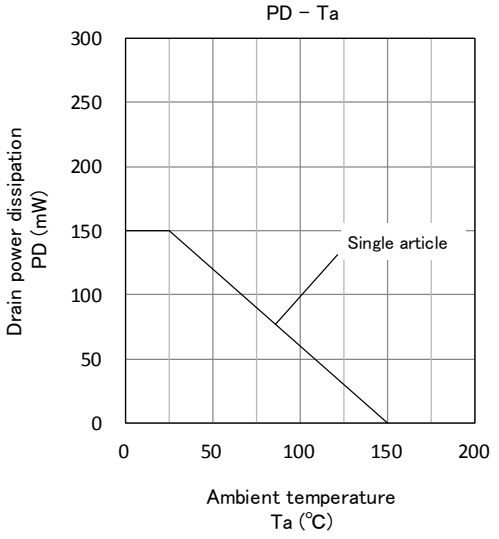


t – ID

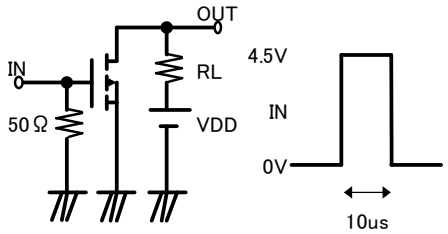




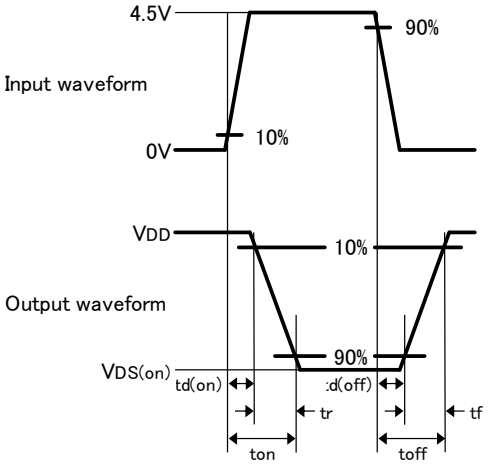




Switching time test condition



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



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