PRELIMINARY

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

INK0612AC1

High Speed Switching
Silicon N-channel MOSFET

DESCRIPTION

INK0612AC1 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

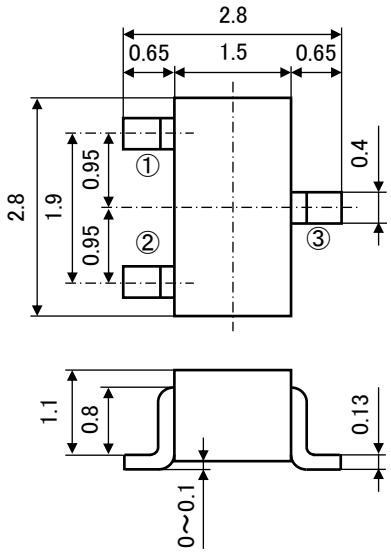
・Input impedance is high, and not necessary to consider a drive electric current.
・High drain current ID=6A
・Drive voltage 4V
・Low on Resistance. RDS(ON)=22mΩtyp(@VGS=10V).
RDS(ON)=24mΩtyp(@VGS=4.5V).
・High speed switching.

APPLICATION

High speed switching, Analog switching

OUTLINE DRAWING

Unit : mm



TERMINAL CONNECTOR

①:GATE
②:SOURCE
③:DRAIN

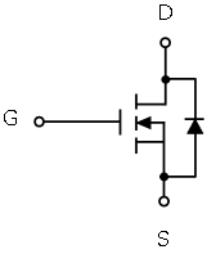
JEITA:SC-59
JEDEC:Similar to TO-236

MAXIMUM RATINGS (Ta=25℃)

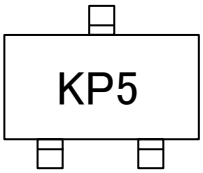
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GSS}	±20	V
Drain Current(DC)(※1)	I_D	6	A
Drain Current(Pulse) (※2)	I_{DP}	12	A
Total Power Dissipation (※1)	P_D	0.9	W
Channel Temperature	T_{ch}	+150	℃
Storage Temperature	T_{stg}	−55～+150	℃

※1 package mounted on glass-epoxy substrate.
(39mm×39mm×1.6mm,Cu pad 1500mm^2)
※2 Single pulse Pw≦10ms , Duty cycle≦1%

EQUIVALENT CIRCUIT



MARKING

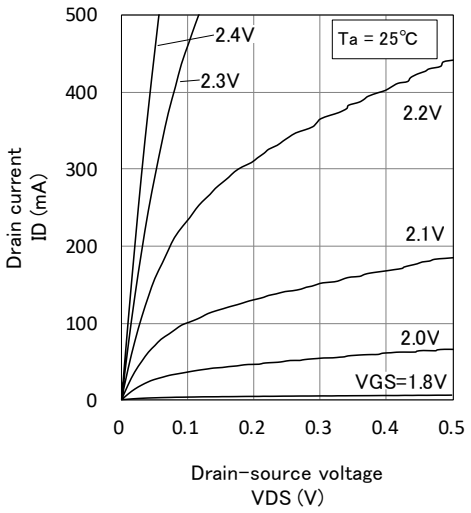


ELECTRICAL CHARACTERISTICS (Ta=25℃)

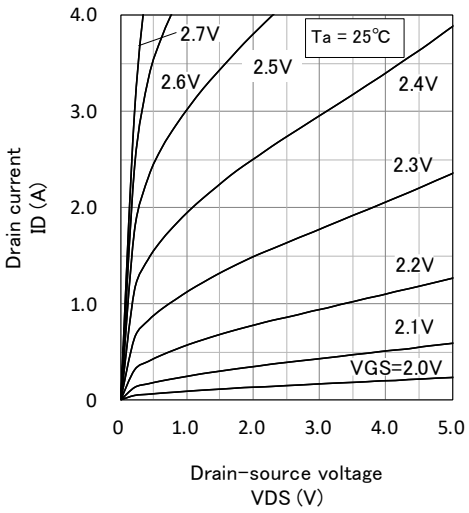
Parameter	Symbol	Test Condition	Limit			Unit
			MIN	TYP	MAX	
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=250μA, V_{GS}=0V	30	−	−	V
Gate-Source Leak Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	−	−	±1.0	μA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V, V_{GS}=0V	−	−	1.0	μA
Gate Threshold Voltage	V_{th}	I_D=250μA, V_{DS}= V_{GS}	1.0	−	2.5	V
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	I_D=6A, V_{GS}=4.5V	−	22	33	mΩ
		I_D=6A, V_{GS}=10V	−	24	40	
Input Capacitance	C_{iss}	V_{DS}=10V, V_{GS}=0V, f=1MHz	−	695	−	pF
Output Capacitance	C_{oss}		−	120	−	
Feedback Capacitance	C_{rss}		−	95	−	
Switching Time	t_{on}	V_{DD}=20V, I_D=200mA, V_{GS}=5V	−	33	−	ns
	t_{off}		−	85	−	

TYPICAL CHARACTERISTICS

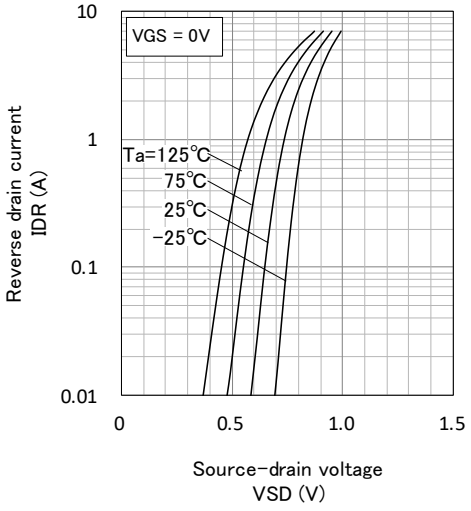
ID – VDS



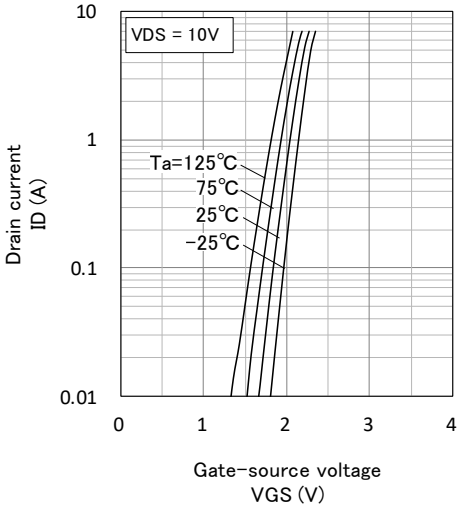
ID – VDS



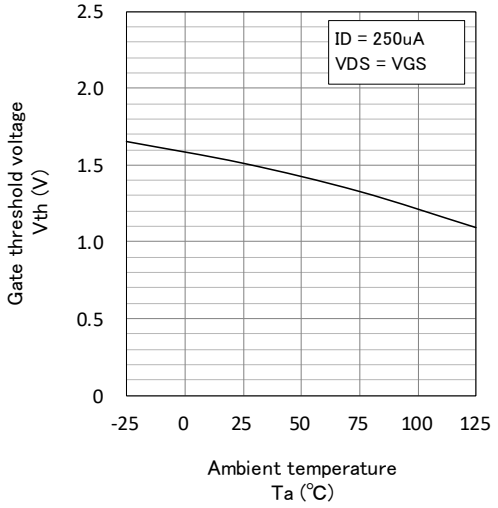
IDR – VSD



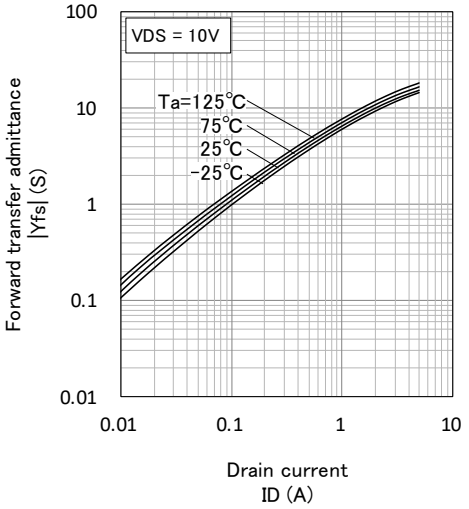
ID – VGS



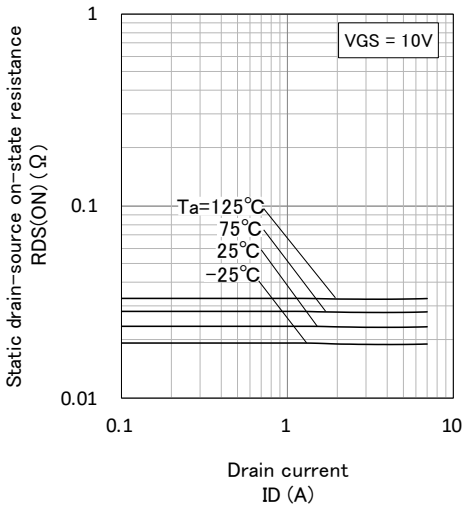
Vth – Ta



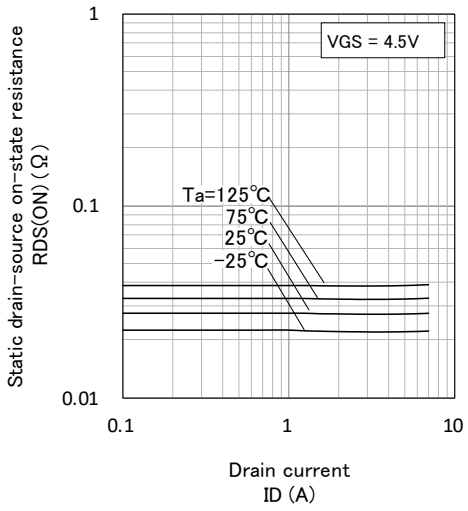
|Yfs| – ID



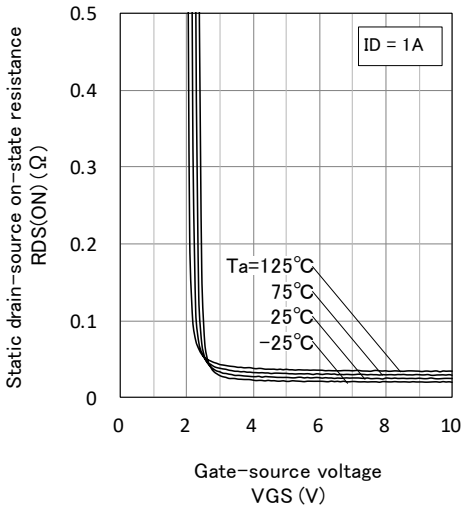
RDS(ON) – ID



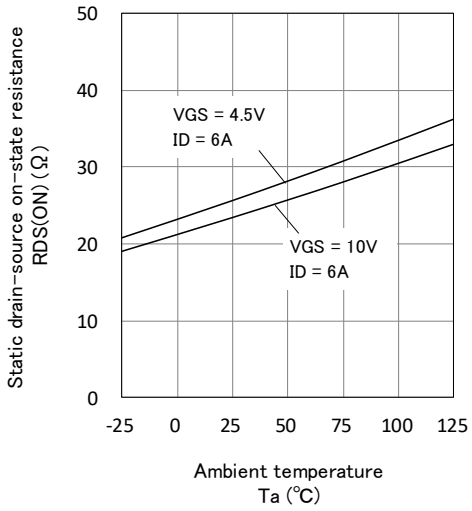
RDS(ON) – ID



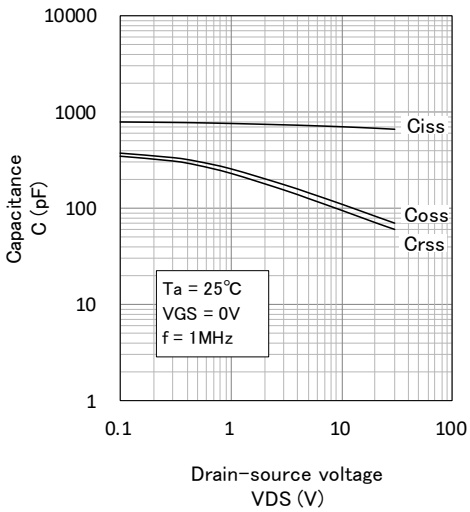
RDS(ON) – VGS



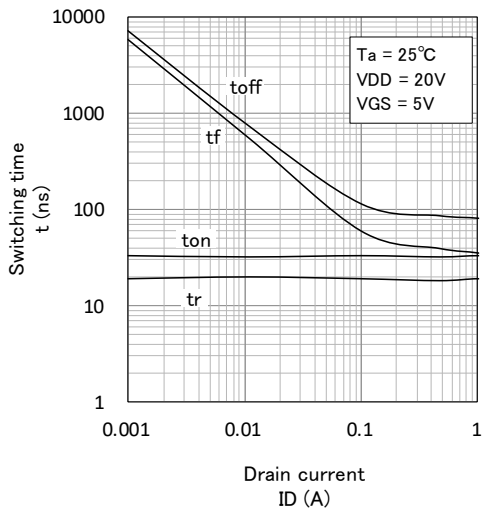
RDS(ON) – Ta



C – VDS



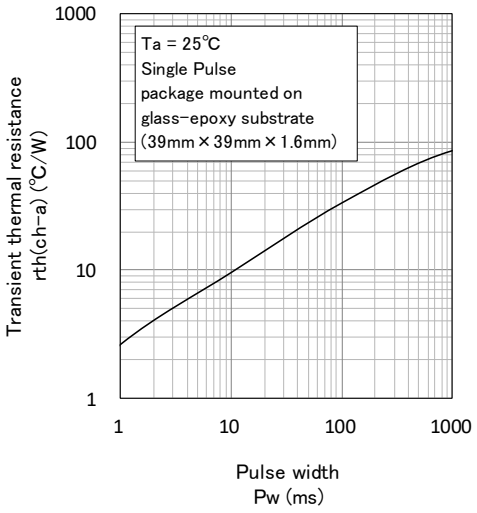
t – ID



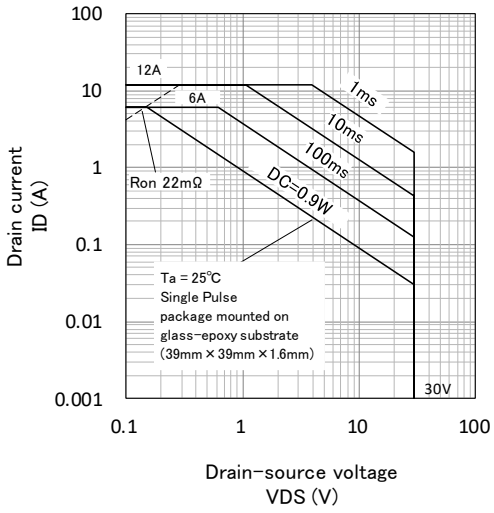
INK0612AC1

High Speed Switching
Silicon N-channel MOSFET

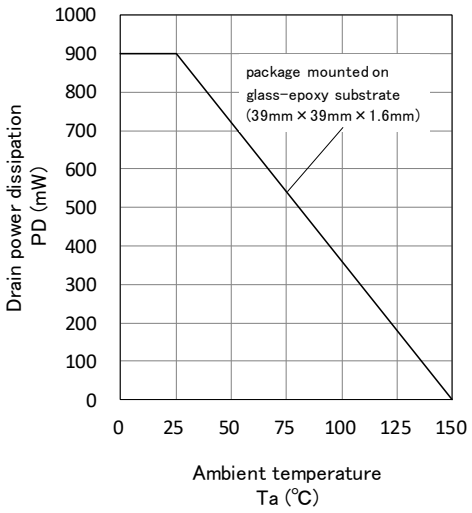
rth(ch-a) – Pw



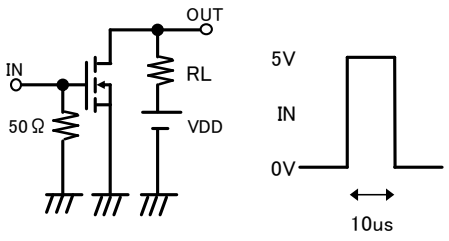
ASO



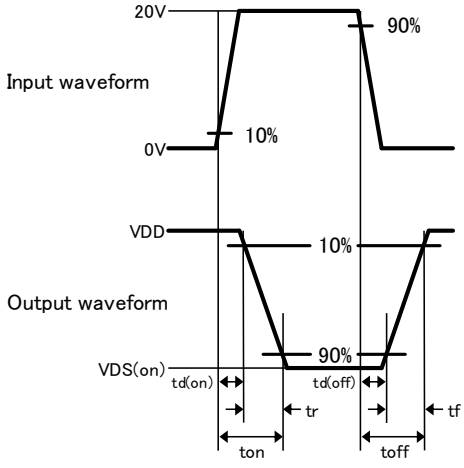
PD – Ta



Switching time test condition



Duty ≦ 1%
Input : tr, tf < 10ns
VDD=20V
Common source
Ta = 25℃



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