INK021AAP1

High Speed Switching
Silicon N-channel MOSFET

DESCRIPTION

INK021AAP1 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

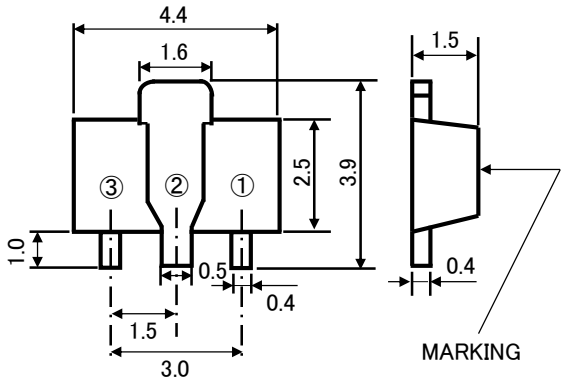
・Input impedance is high, and not necessary to consider a drive electric current.
・High drain current I_D=2A
・Drive voltage 4V
・Low on Resistance. $R_{DS(on)}$=0.20Ω(TYP).
・High speed switching.
・Small package for easy mounting.

FEATURE

Switching

OUTLINE DRAWING

UNIT:mm



TERMINAL CONNECTOR
①:GATE
②:DRAIN
③:SOURCE

JEITA:SC-62
JEDEC:SOT-89

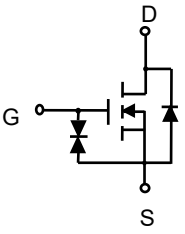
MAXIMUM RATINGS(Ta=25℃)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	100	V
Gate-Source Voltage	V_{GSS}	±20	V
Drain Current(DC)	I_D	2	A
Drain Current(Pulse) (※1)	I_{DP}	8	A
Total Power Dissipation (※2)	P_D	1.5	W
Channel Temperature	T_{ch}	+150	℃
Storage Temperature	T_{stg}	−55～+150	℃

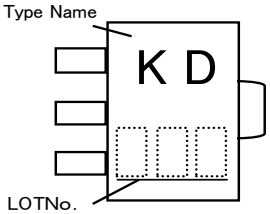
※1:Single pulse, Pw≦1ms

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

EQUIVALENT CIRCUIT



MARKING

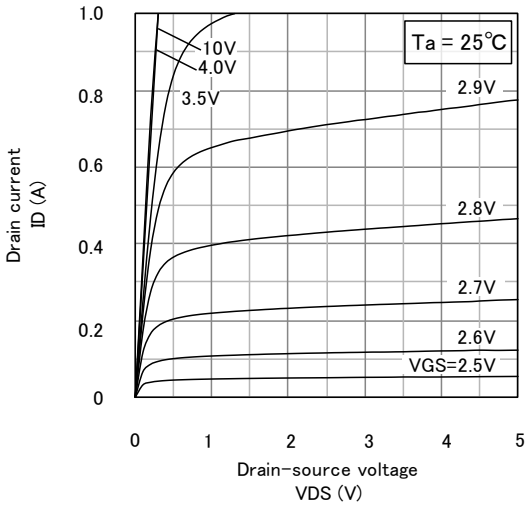


ELECTRICAL CHARACTERISTICS(Ta=25℃)

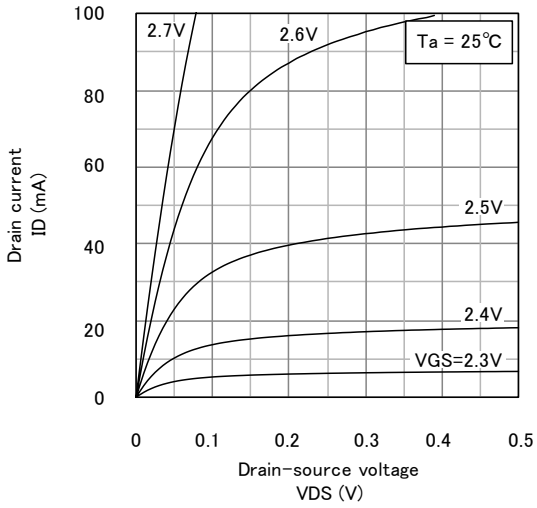
Parameter	Symbol	Test Condition	Limit			Unit
			MIN	TYP	MAX	
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=100μA, V_{GS}=0V	100	−	−	V
Gate-Source Leak current	I_{GSS}	V_{GS}=±16V, V_{DS}=0V	−	−	±10	μA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=100V ,V_{GS}=0V	−	−	1	μA
Gate Threshold Voltage	V_{th}	I_D=250μA, V_{DS}= V_{GS}	1.0	−	2.5	V
Forward Transfer Admittance	|Yfs|	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	−	0.2	−	Ω
Input Capacitance	C_{iss}	V_{DS}=10V, V_{GS}=0V,f=1MHz	−	780	−	pF
Output Capacitance	C_{oss}		−	65	−	
Switching Time	t_{on}	V_{DD}=30V , I_D=1A V_{GS}=0～5V	−	40	−	ns
	t_{off}		−	55	−	

TYPICAL CHARACTERISTICS

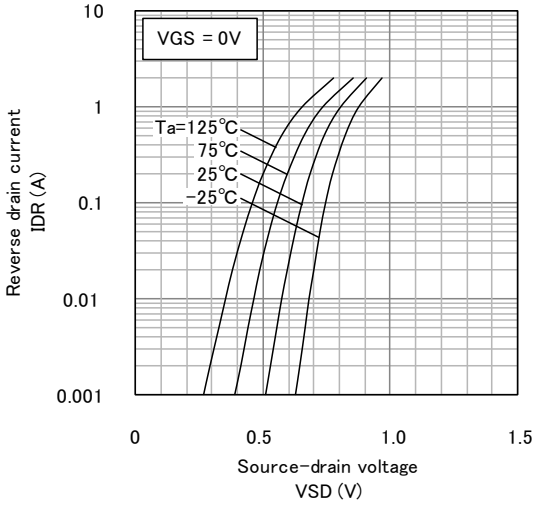
ID – VDS



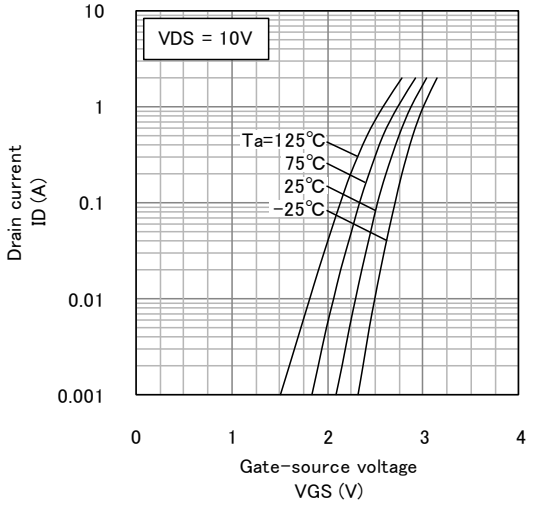
ID – VDS (Low voltage region)



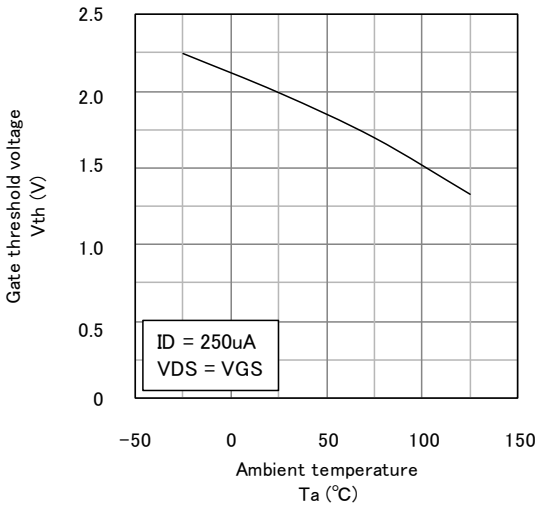
IDR – VSD



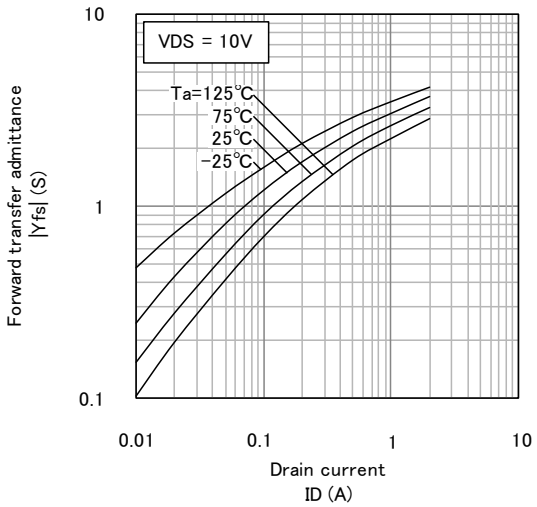
ID – VGS



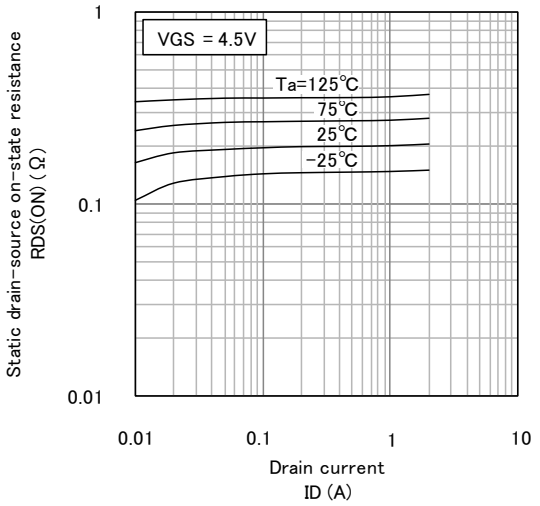
Vth – Ta



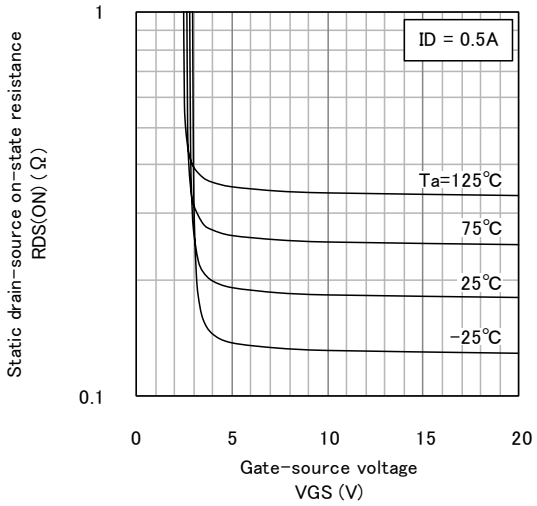
|Yfs| – ID



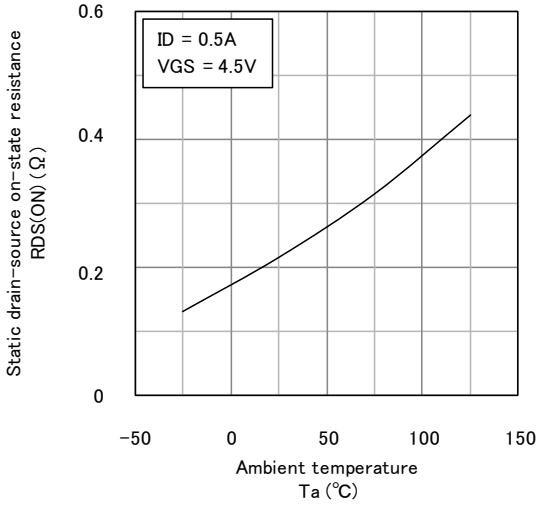
RDS(ON) – ID



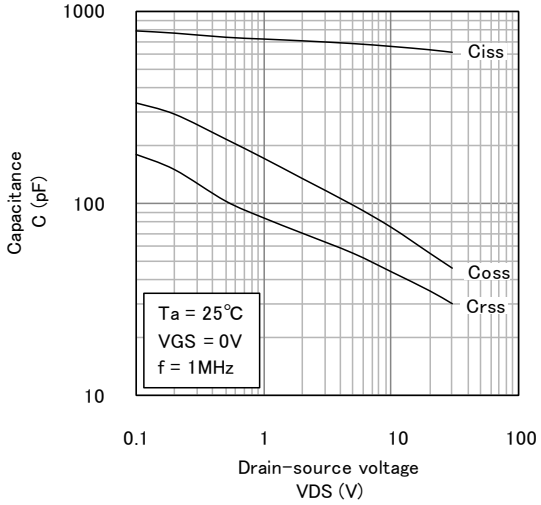
RDS(ON) – VGS



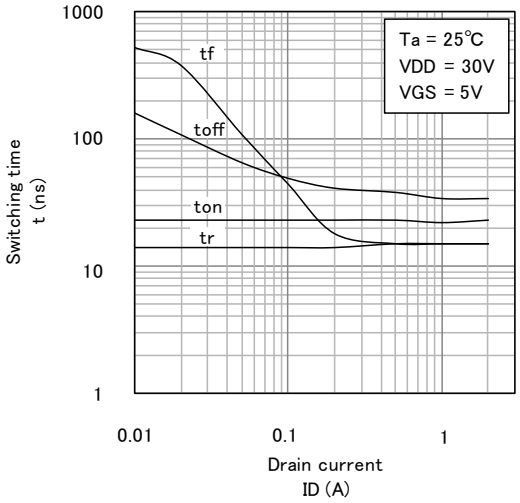
RDS(ON) – Ta



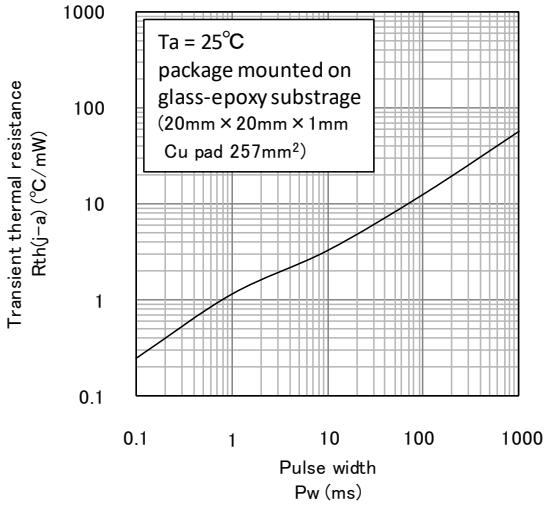
C – VDS



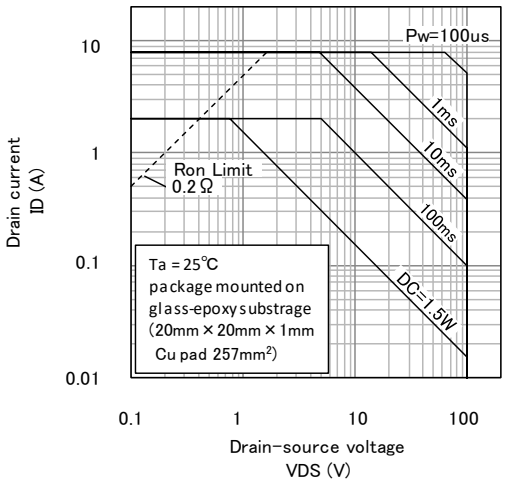
t – ID



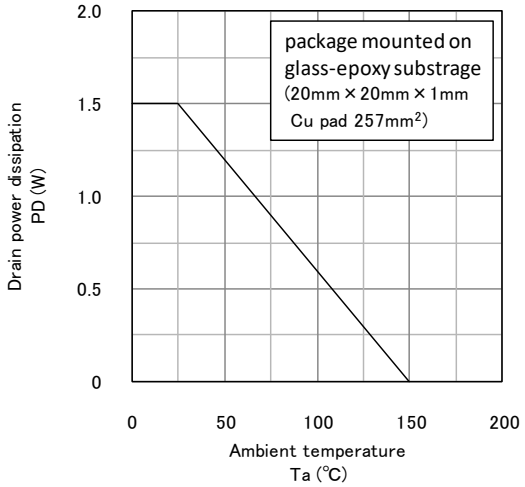
Rth(j-a) – Pw



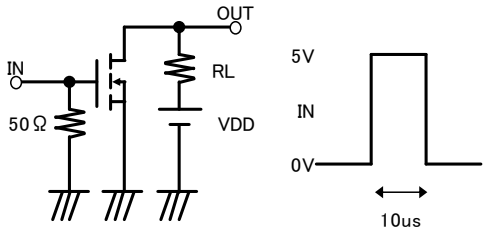
ASO



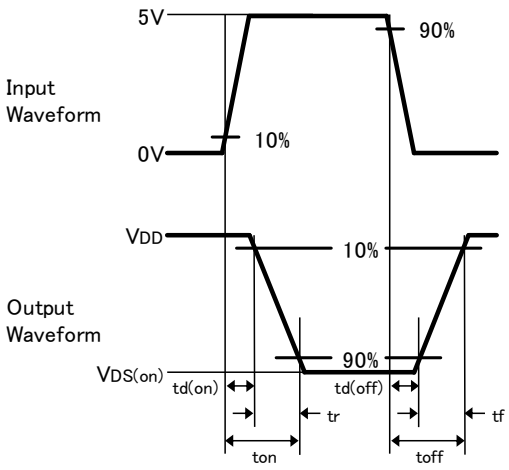
PD – Ta



Switching time test circuit



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



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