INK0103AM1

High Speed Switching
Silicon N-channel MOSFET

DESCRIPTION

INK0103AM1 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

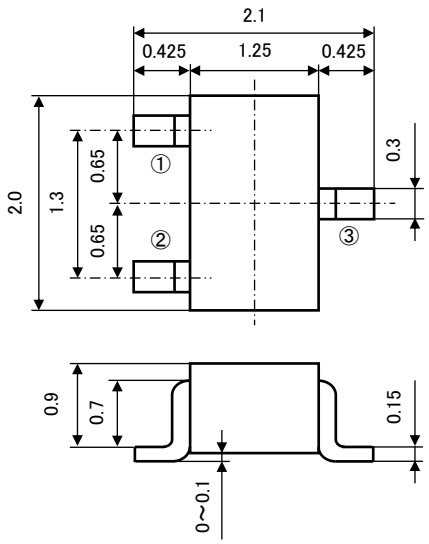
●Input impedance is high, and not necessary to consider a drive electric current.
●Drive voltage 1.8V
●Low on Resistance.
$R_{DS(on)}$=0.33Ω(TYP) @I_D=0.5A,V_{GS}=4.5V
$R_{DS(on)}$=0.46Ω(TYP) @I_D=0.5A,V_{GS}=2.5V
$R_{DS(on)}$=0.64Ω(TYP) @I_D=0.3A,V_{GS}=1.8V
・High speed switching.
・Small package for easy mounting.

APPLICATION

Inductive loads switchingg

OUTLINE DRAWING

UNIT:mm



JEITA:SC-70
JEDEC:—

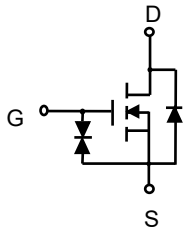
TERMINAL CONNECTOR
①:GATE
②:SOURCE
③:DRAIN

MAXIMUM RATINGS(Ta=25℃)

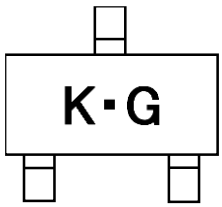
Parameter	Symbol	Rating	Unit
Drain-Source voltage	V_{DSS}	20	V
Gate-Source voltage	V_{GSS}	±8	V
Drain current(DC)	I_D	0.7	A
Drain current(Pulse) ※1	I_{DP}	1.4(※1)	A
Total power dissipation	P_D	200	mW
Channel temperature	T_{ch}	+150	℃
Storage temperature	T_{stg}	−55～+150	℃

※1:Pw≦10μs, Duty cycle≦1%

EQUIVALENT CIRCUIT



MARKING

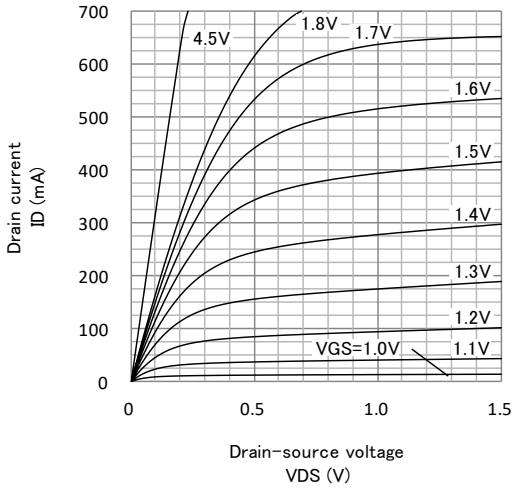


ELECTRICAL CHARACTERISTICS(Ta=25℃)

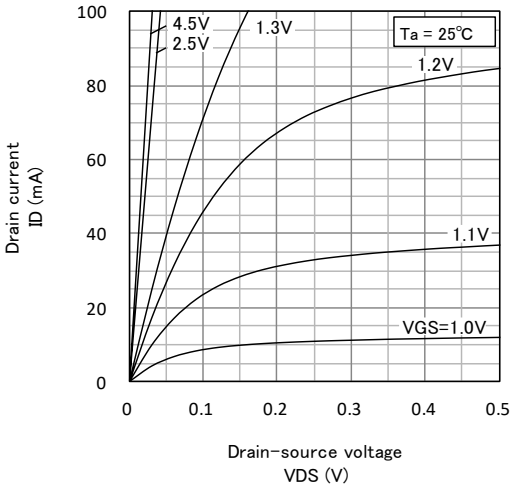
Parameter	Symbol	Test Condition	Limit			Unit
			MIN	TYP	MAX	
Drain-Source breakdown voltage	$V_{(BR)DSS}$	I_D=100μA, V_{GS}=0V	20	−	−	V
Gate-Source leak current	I_{GSS}	V_{GS}=±8V, V_{DS}=0V	−	−	±10	μA
Zero Gate voltage drain current	I_{DSS}	V_{DS}=20V, V_{GS}=0V	−	−	1.0	μA
Gate threshold voltage	V_{th}	I_D=250μA, V_{DS}= V_{GS}	0.5	−	1.0	V
Static Drain-Source on-state resistance	$R_{DS(ON)}$	I_D=0.5A, V_{GS}=4.5V	−	0.33	−	Ω
		I_D=0.5A, V_{GS}=2.5V	−	0.46	−	
		I_D=0.5A, V_{GS}=1.8V	−	0.64	−	
Input capacitance	C_{iss}	V_{DS}=5V, V_{GS}=0V, f=1MHz	−	64	−	pF
Output capacitance	C_{oss}		−	16	−	pF
Switching time	t_{on}	V_{DD}=5V, I_D=0.5A	−	22	−	ns
	t_{off}	V_{GS}=5V	−	30	−	ns

TYPICAL CHARACTERISTICS

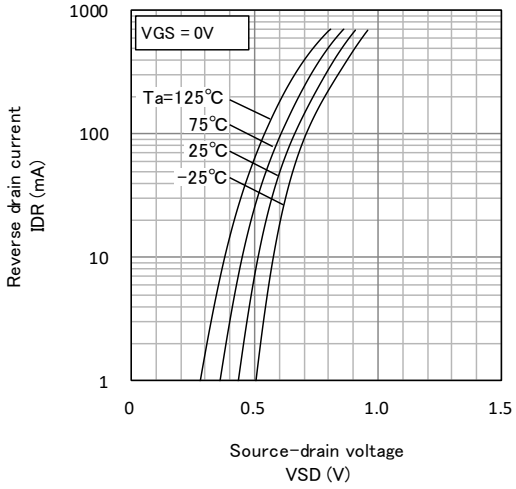
ID – VDS (Ta=25℃)



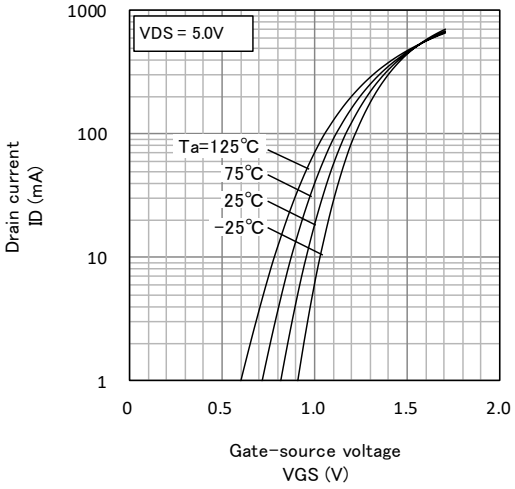
ID – VDS (Low voltage legion)



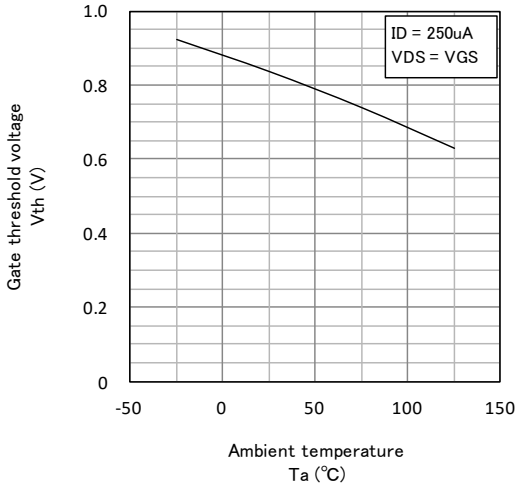
IDR – VSD



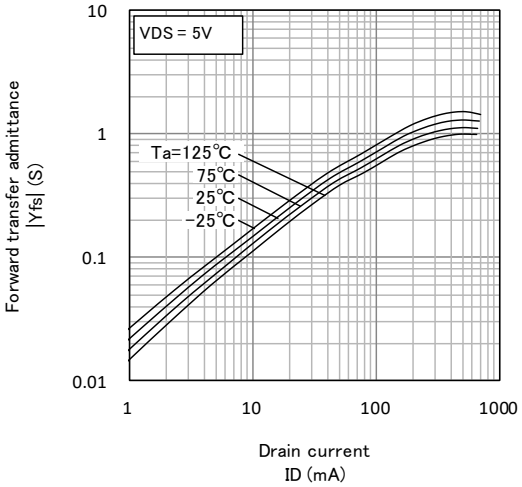
ID – VGS



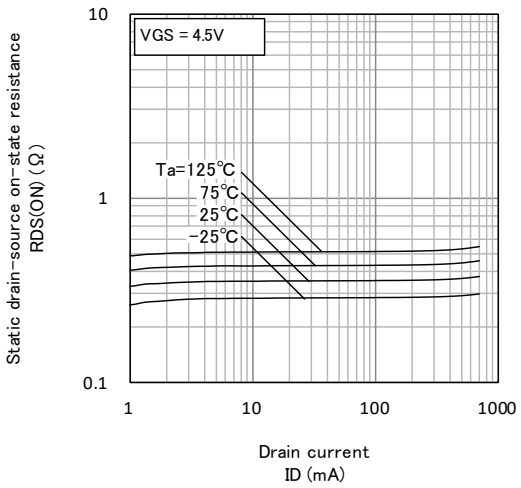
Vth – Ta



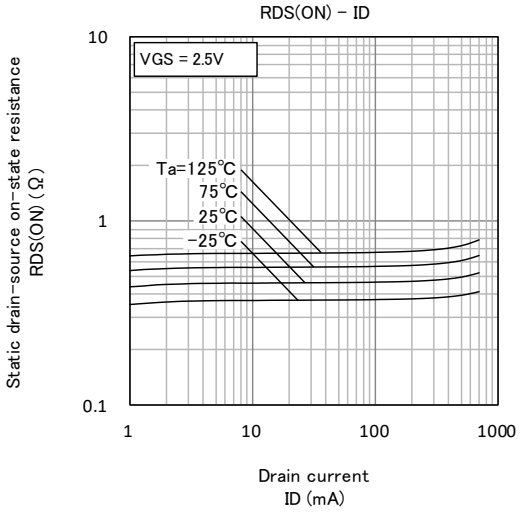
|Yfs| – ID



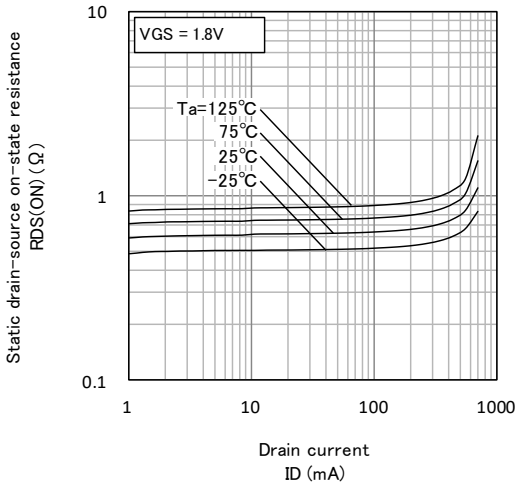
RDS(ON) – ID



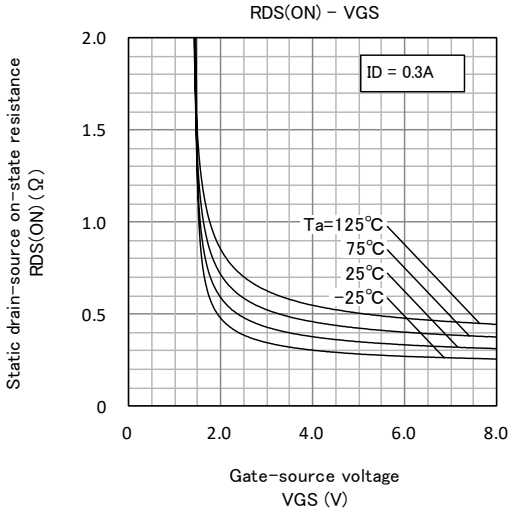
RDS(ON) – ID



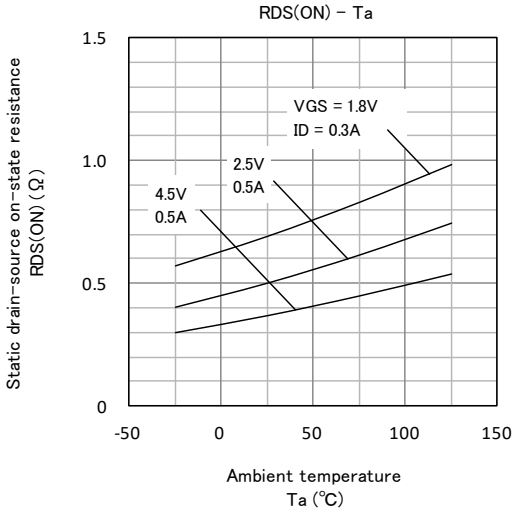
RDS(ON) – ID



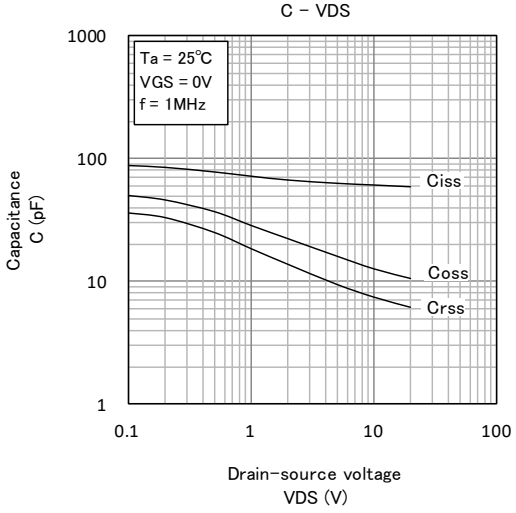
RDS(ON) – VGS



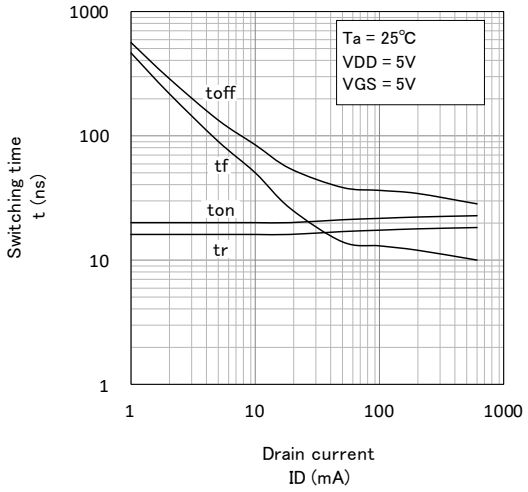
RDS(ON) – Ta



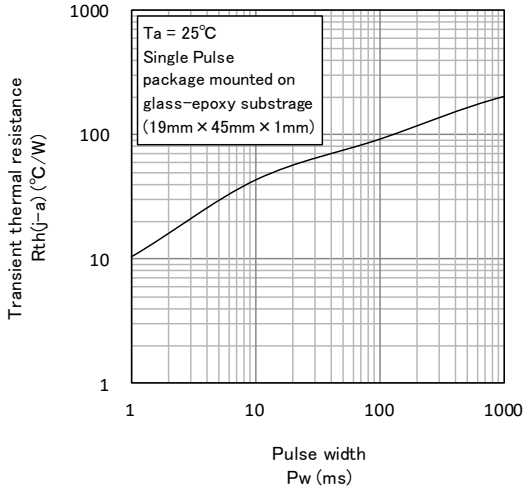
C – VDS



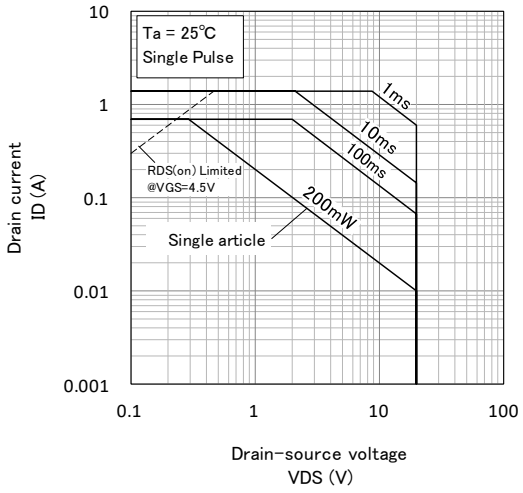
t – ID



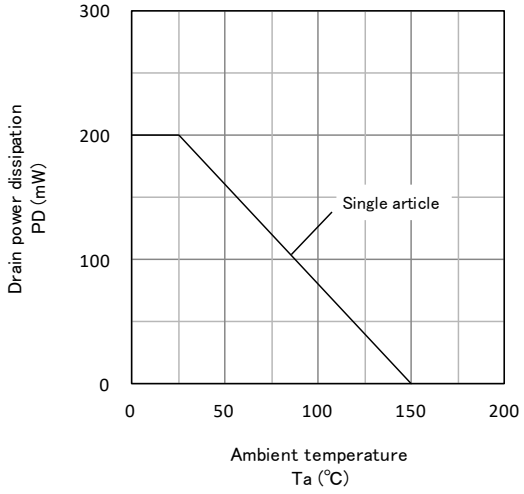
Rth(j-a) – Pw



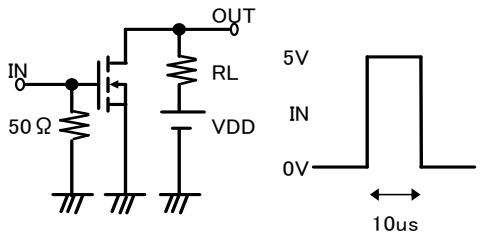
ASO



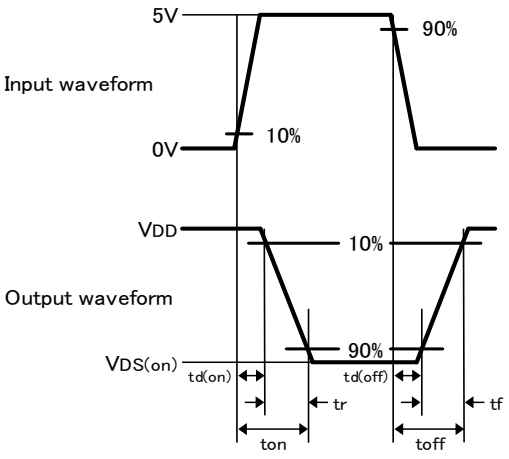
PD – Ta



Switching time test condition



Duty ≦ 1%
Input : tr, tf < 10ns
VDD = 5V
Common source
Ta = 25℃



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