

INK0102AC1-T150

High speed switching
Silicon N-channel MOSFET

AEC-Q101 Compliance

DESCRIPTION

INK0102AC1 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

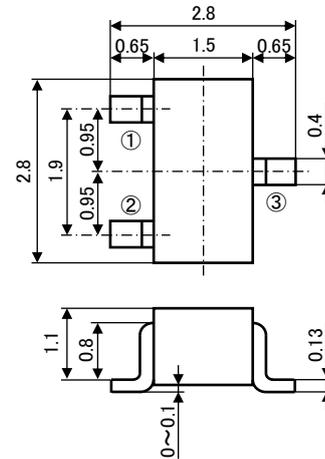
- Input impedance is high, and not necessary to consider a drive electric current.
- Drive voltage 2.5V
- Low on Resistance.
 $R_{DS(ON)}=0.35\ \Omega$ (TYP) @ $I_D=0.2A, V_{GS}=4.5V$
 $R_{DS(ON)}=0.48\ \Omega$ (TYP) @ $I_D=0.1A, V_{GS}=2.5V$
- High speed switching.
- Small packing for easy mounting.

APPLICATION

Inductive loads switching

OUTLINE DRAWING

Unit: mm



TERMINAL CONNECTOR

JEITA: SC-59

JEDEC: Similar to TO-236

①: GATE

②: SOURCE

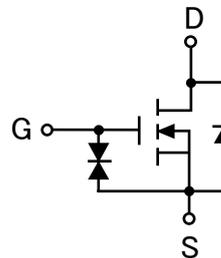
③: DRAIN

MAXIMUM RATINGS (Ta=25°C)

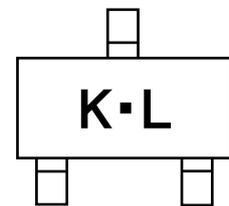
Parameter	Symbol	Rating	Unit
Drain-Source voltage	V _{DSS}	30	V
Gate-Source voltage	V _{GSS}	±8	V
Drain current(DC)	I _D	0.68	A
Drain current(Pulse)	I _{DP}	2(※1)	A
Total power dissipation	P _D	200	mW
Channel temperature	T _{ch}	+150	°C
Storage temperature	T _{stg}	-55~+150	°C

※1: Pw ≤ 10 μs, Duty cycle ≤ 1%

EQUIVALENT CIRCUIT



MARKING



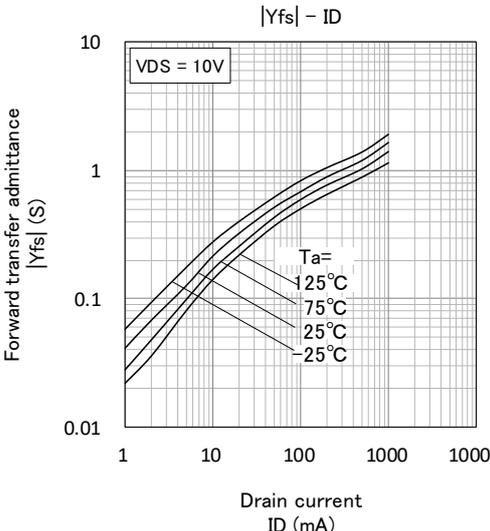
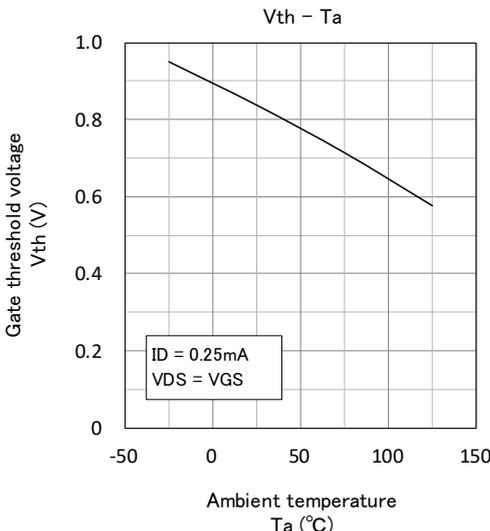
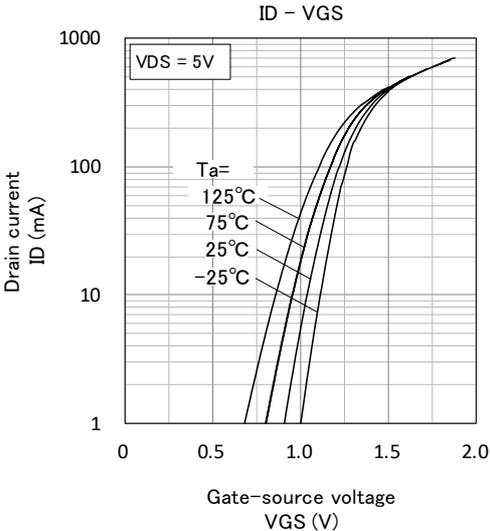
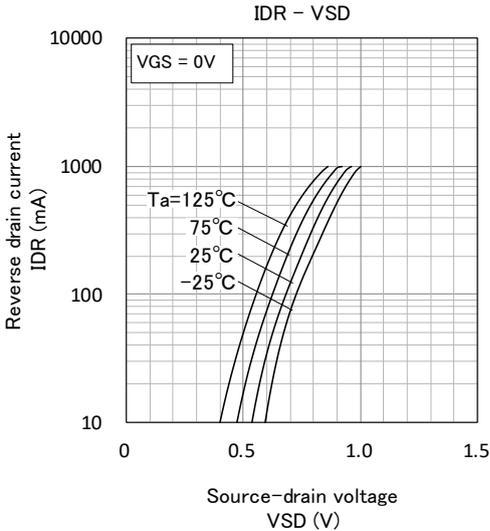
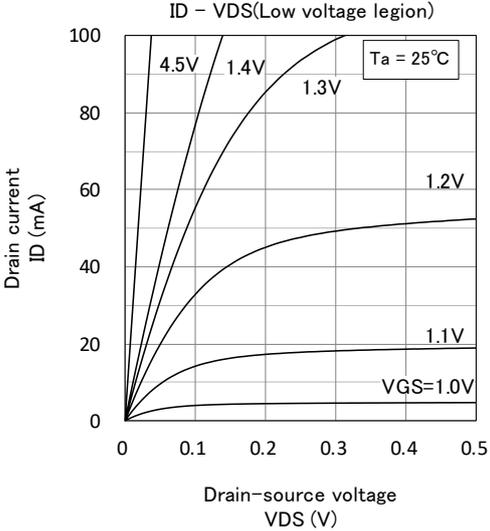
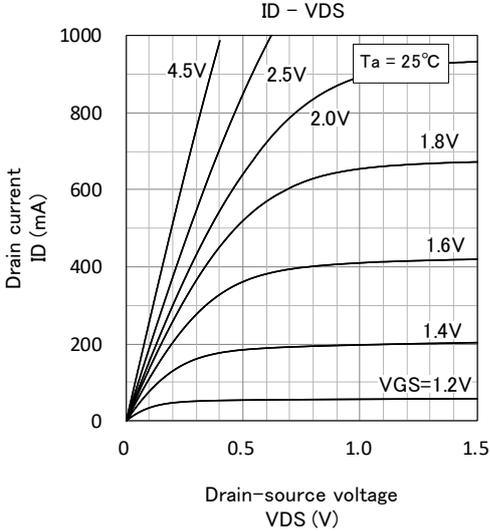
ELECTRICAL CHARACTERISTICS (Ta=25°C)

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	-	

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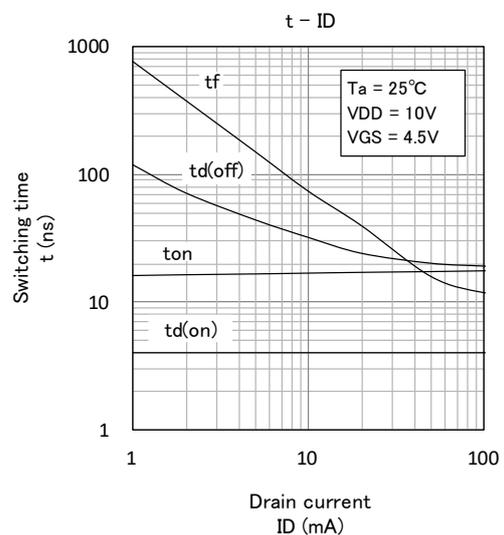
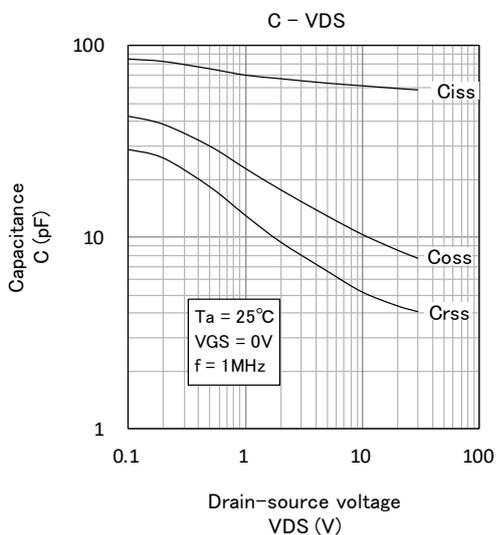
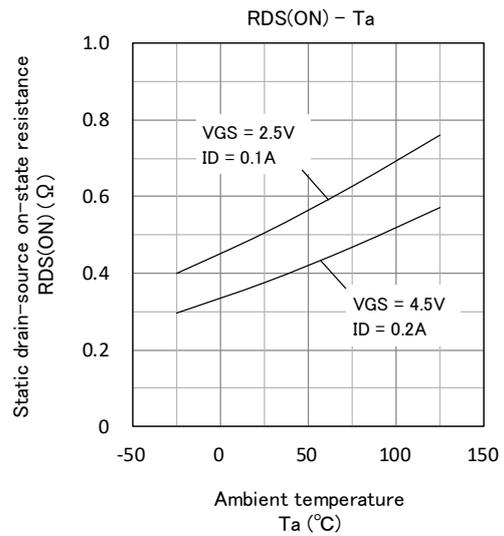
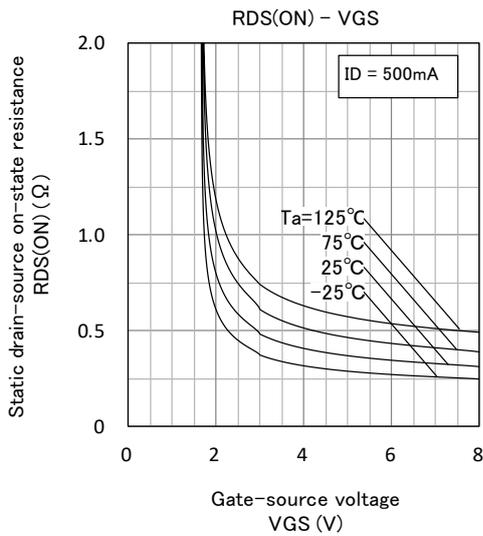
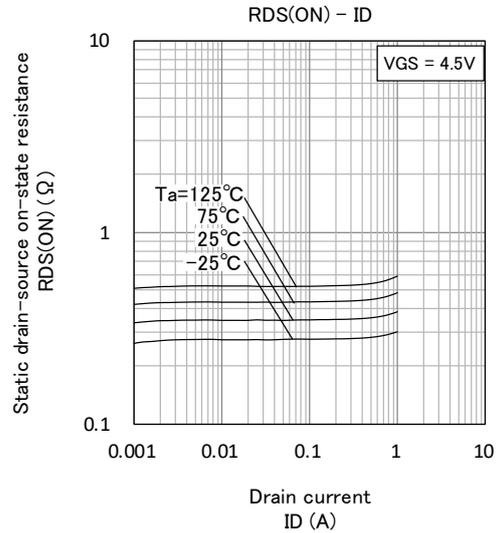
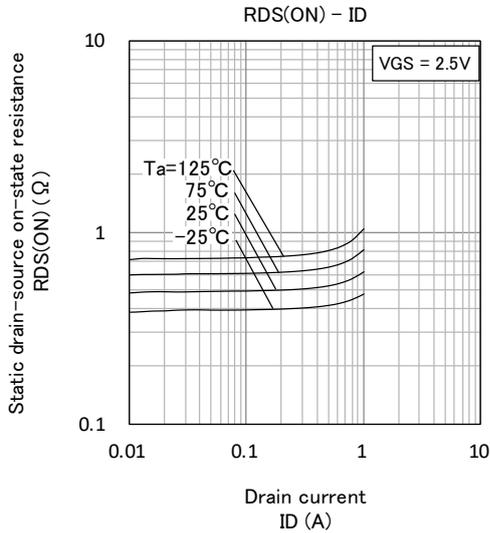
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TYPICAL CHARACTERISTICS



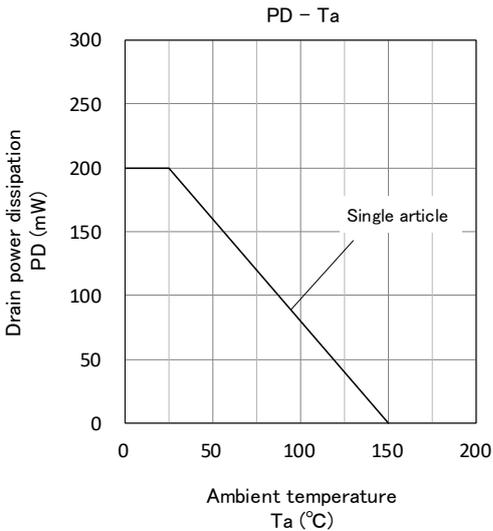
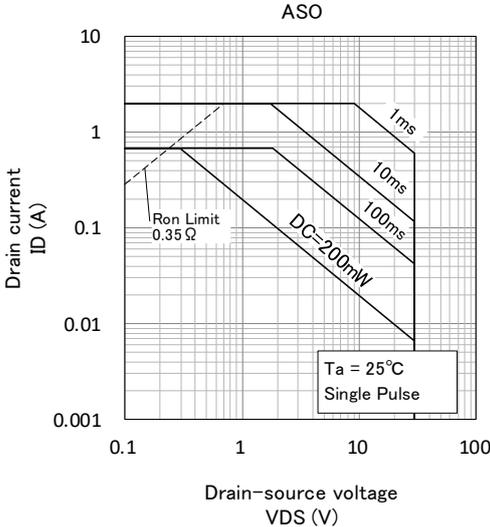
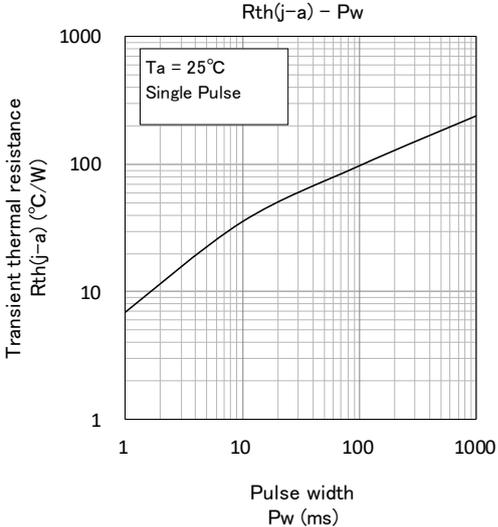
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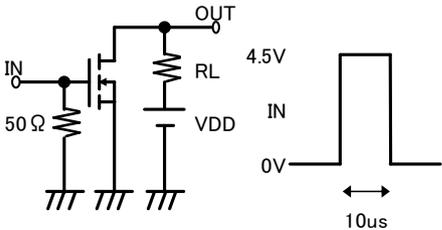


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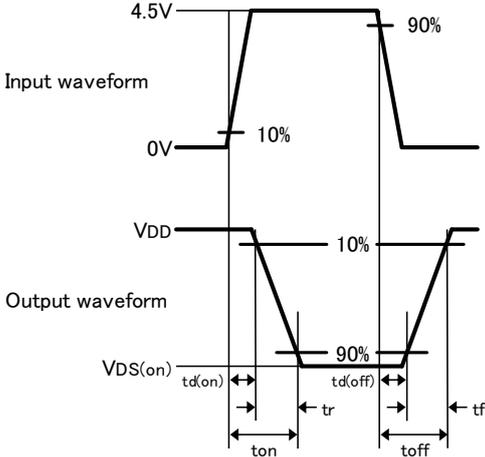
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Switching time test condition



Duty $\leq 1\%$
Input: $t_r, t_f < 10\text{ns}$
VDD = 10V
Common source
 $T_a = 25^\circ\text{C}$



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