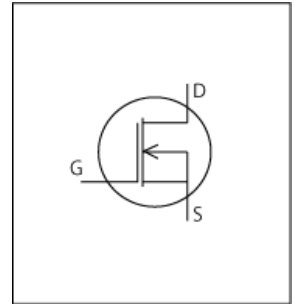


# LTspice Model

## NMOS

### Isahaya

### INK021AAP1



### Model Information

**Model** A macro model based on BSIM3 model  
**Call Name** MDC\_INK021AAP1\_LT  
**Pin Assign** 1:S 2:D 3:G  
**File List** Model Library MDC\_INK021AAP1\_LT01.lib  
 Model Report MDC\_INK021AAP1\_LT.pdf (this file)

**Verified Simulator Version** LTspice version XVII  
**Note**

### References

The information which was used for modeling is as follow:

[Data Sheet]

- Date/Version None
- Product name INK021AAP1
- Company name Isahaya Electronics Corporation
- Characteristics IdVds[Vgs],IsVsd[Temp],IdVgs[Temp],VthTemp[Id],Rds(on)Id[Temp],Rds(on)Vgs[Temp],Rds(on)Temp[Id],Crss,Coss,Ciss,ton,toff,tf,tr

### Simulation Range

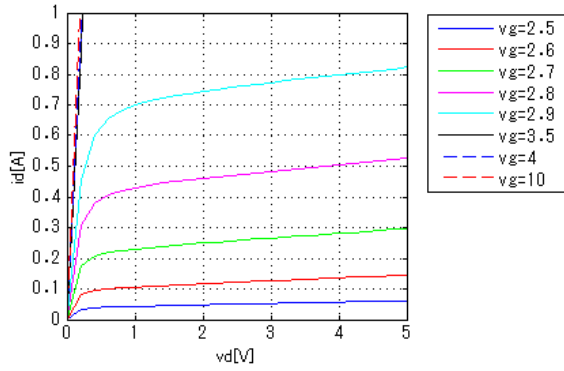
This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

Item	Range			Unit
	Min.		Max.	
Drain-source voltage (DC)	0	to	100	V
Gate-source voltage (DC)	0	to	20	V
Temperature	-55	to	150	deg C

Simulation results are following.  
 Explanatory notes — : simulated

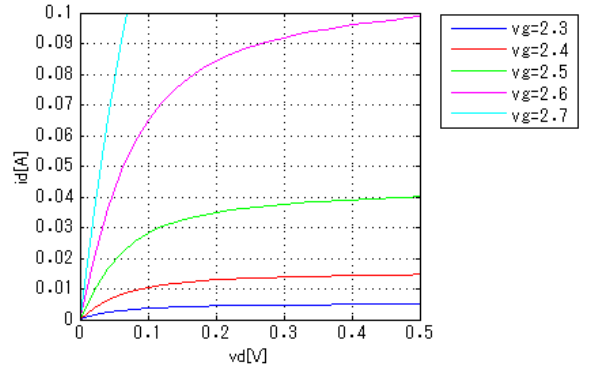
**IdVds[Vgs]**

Temp. = 25deg C

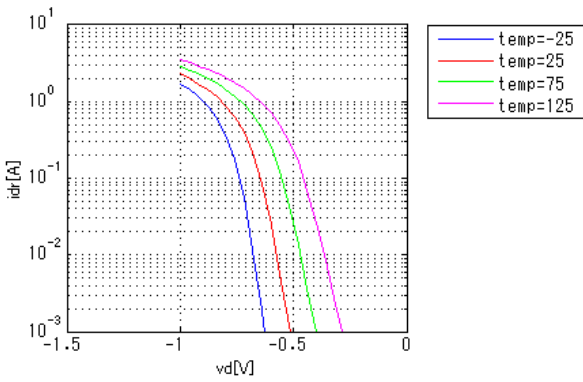


**IdVds[Vgs]**

Temp. = 25deg C

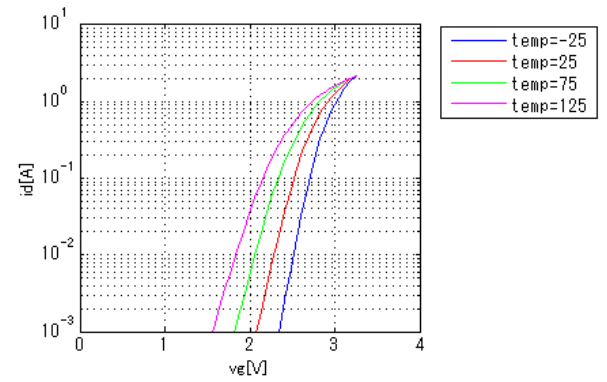


**IsVsd[Temp]**



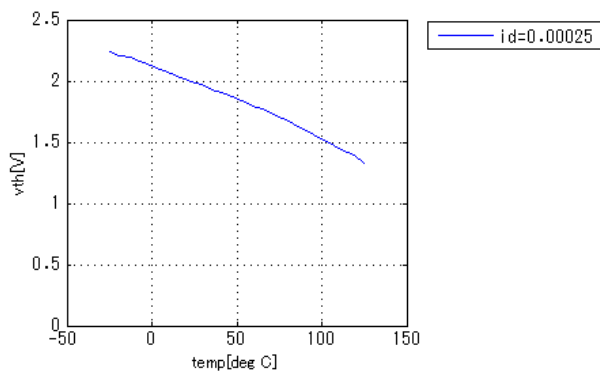
**IdVgs[Temp]**

Vds = 10V



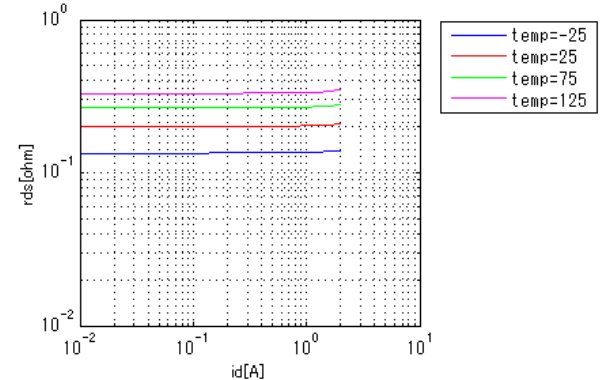
**VthTemp[Id]**

Vd = Vg



**Rds(on)Id[Temp]**

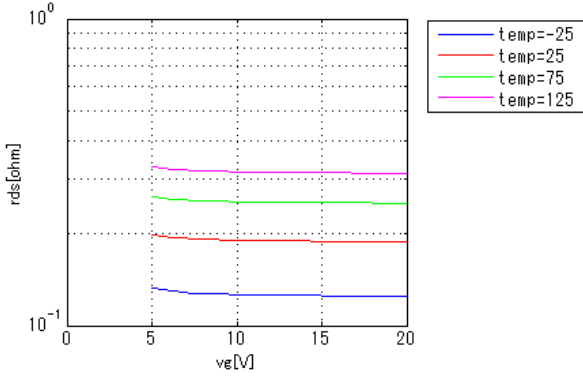
Vgs = 4.5V



Simulation results are following.  
 Explanatory notes — : simulated

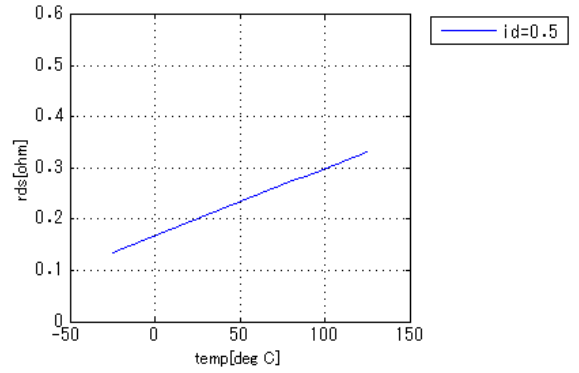
**Rds(on)Vgs[Temp]**

Id = 0.5A



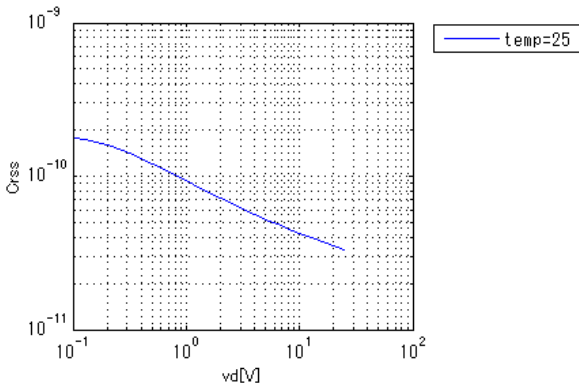
**Rds(on)Temp[Id]**

Vgs = 4.5V



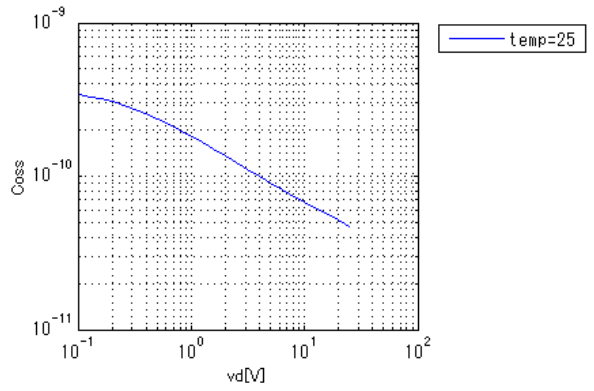
**Crss**

Freq. = 1MHz



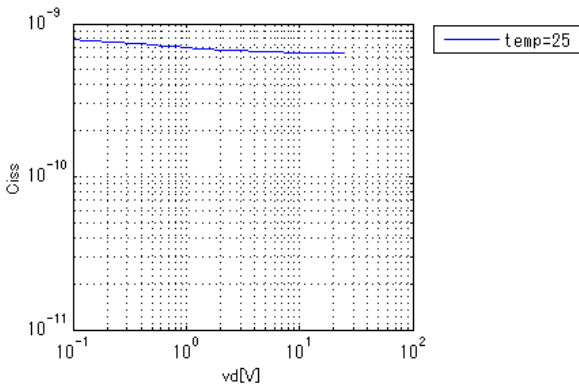
**Coss**

Freq. = 1MHz



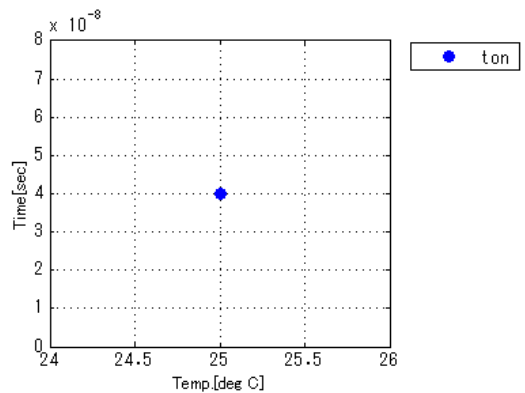
**Ciss**

Freq. = 1MHz



**ton**

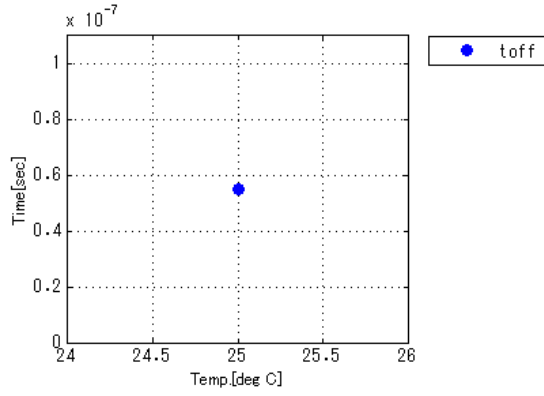
Vdd = 30V, Id = 1A, +Vg = 5V, -Vg = 0V, Rg = 0.001ohm



Simulation results are following.  
 Explanatory notes — : simulated

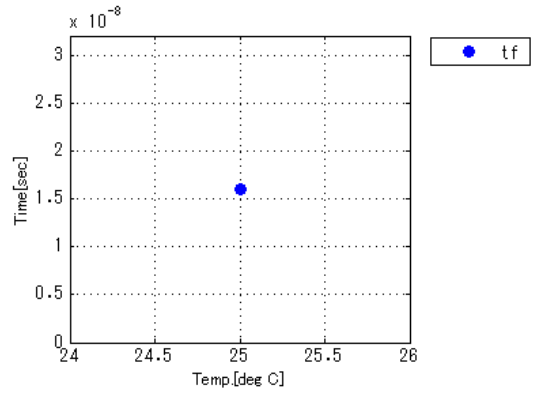
**toff**

Vdd = 30V, Id = 1A, +Vg = 5V, -Vg = 0V, Rg = 0.001ohm



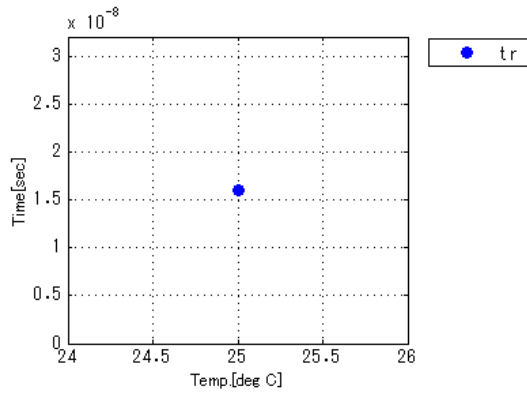
**tf**

Vdd = 30V, Id = 1A, +Vg = 5V, -Vg = 0V, Rg = 0.001ohm



**tr**

Vdd = 30V, Id = 1A, +Vg = 5V, -Vg = 0V, Rg = 0.001ohm



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