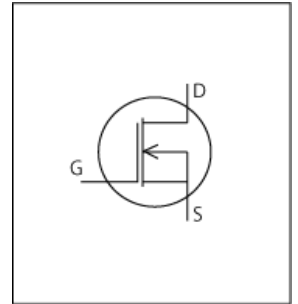


LTspice Model

NMOS

Renesas Electronics Corporation

2SK1516



Model Information

Model A macro model based on BSIM3 model
Call Name MDC_2SK1516_LT
Pin Assign 1:G 2:D 3:S
File List Model Library MDC_2SK1516_LT01.lib
 Model Report MDC_2SK1516_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 Unknown
- Product name 2SK1516
- Company name Renesas Electronics Corporation
- Characteristics IdVgs[Temp], IdVds[Vgs], VdsVgs[Id], Rds(on)Id[Vgs], Rds(on)Temp[Id], Crss, Ciss, Coss, VgsQg[Vdd], VdsQg[Vdd], IsVsd[Vgs], tdon, tdoff, tf, tr

Simulation Range

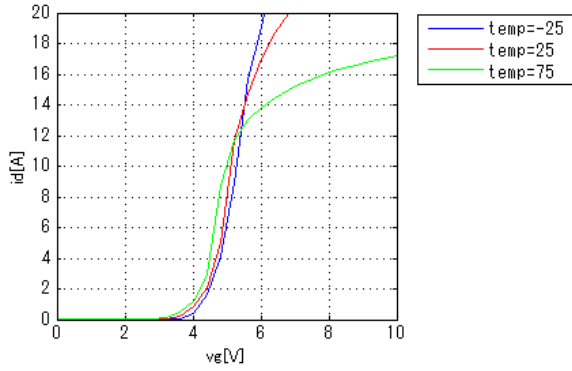
This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

Item	Range			Unit
	Min.		Max.	
Drain-source voltage (DC)	0	to	500	V
Gate-source voltage (DC)	0	to	30	V
Temperature	-55	to	150	deg C

Simulation results are following.
 Explanatory notes — : simulated

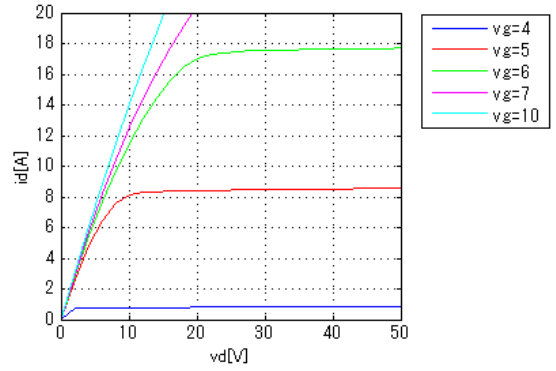
IdVgs[Temp]

Vds = 20V

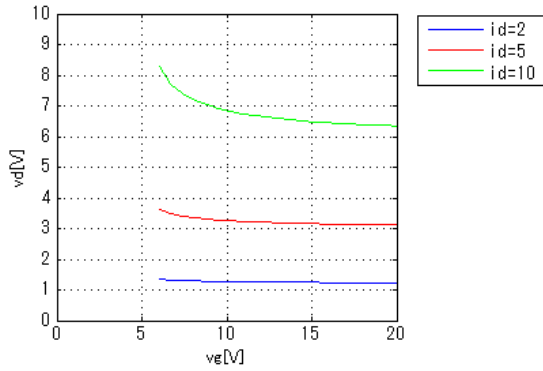


IdVds[Vgs]

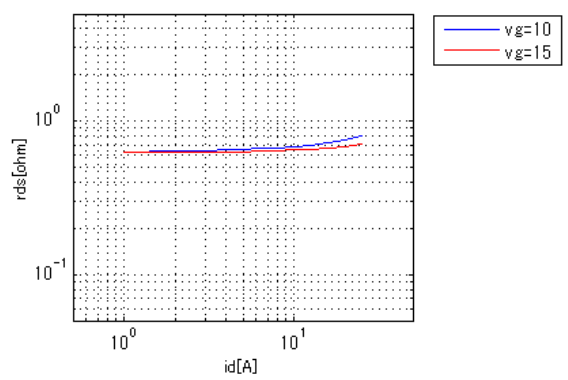
Temp. = 25deg C



VdsVgs[Id]

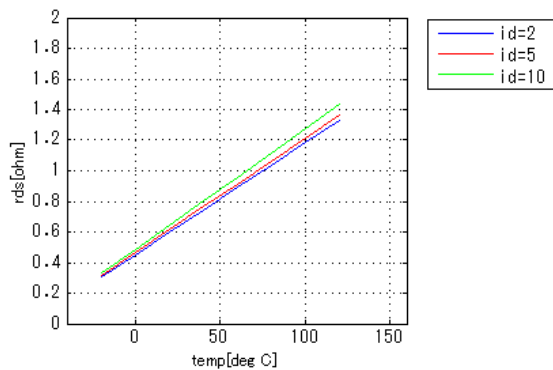


Rds(on)Id[Vgs]



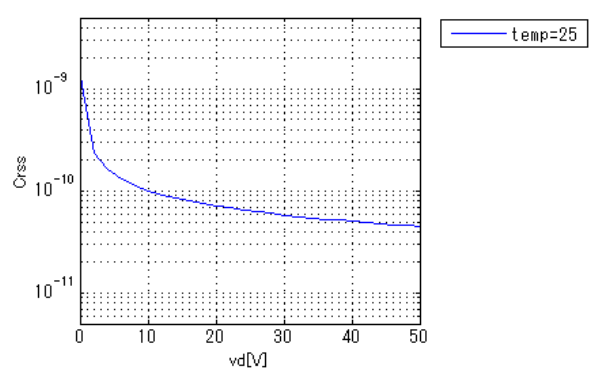
Rds(on)Temp[Id]

Vgs = 10V



Crss

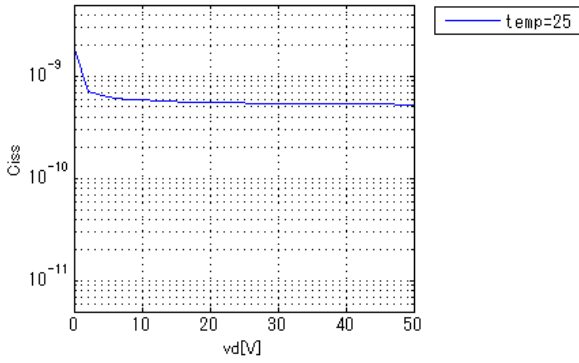
Freq. = 1MHz



Simulation results are following.
 Explanatory notes — : simulated

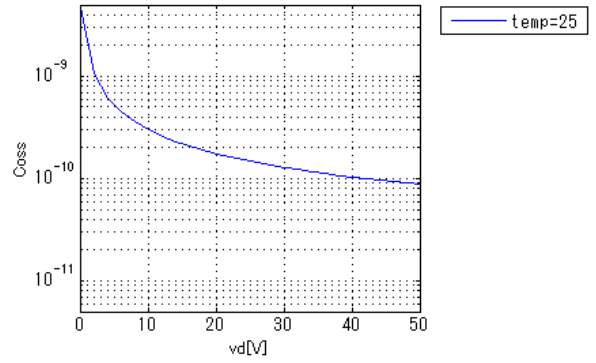
Ciss

Freq. = 1MHz



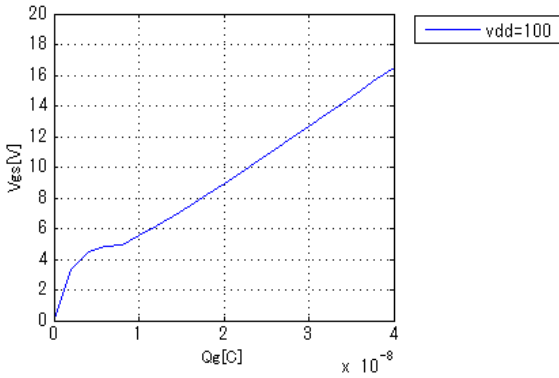
Coss

Freq. = 1MHz



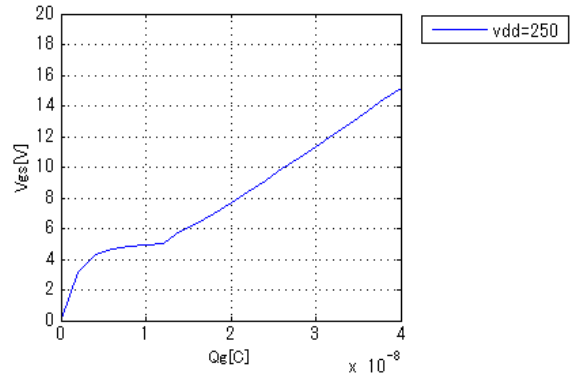
VgsQg[Vdd]

Id = 7A



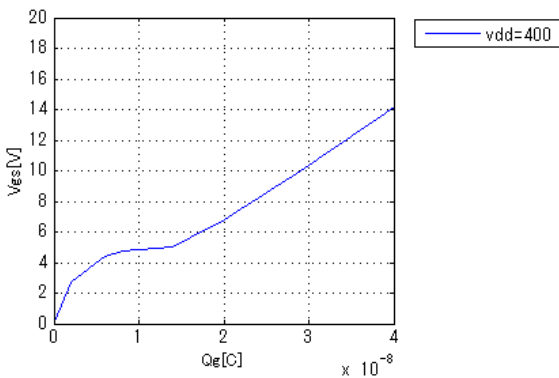
VgsQg[Vdd]

Id = 7A



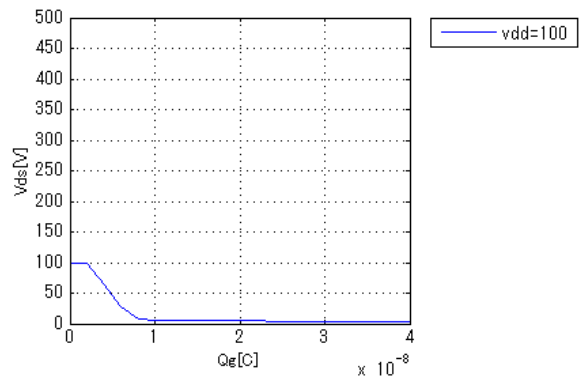
VgsQg[Vdd]

Id = 7A



VdsQg[Vdd]

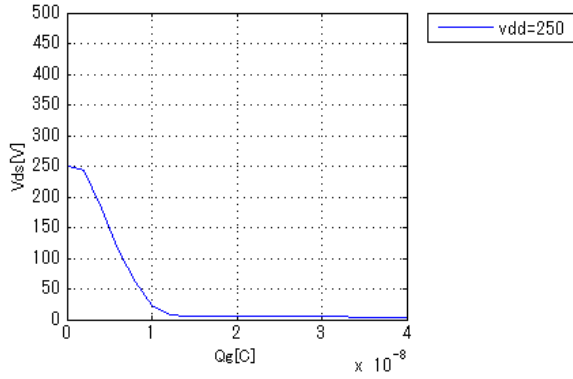
Id = 7A



Simulation results are following.
 Explanatory notes — : simulated

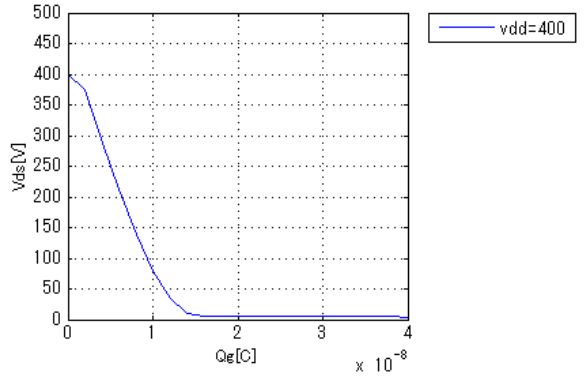
VdsQg[Vdd]

Id = 7A

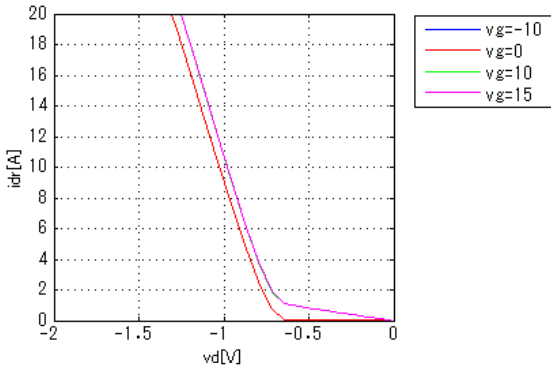


VdsQg[Vdd]

Id = 7A

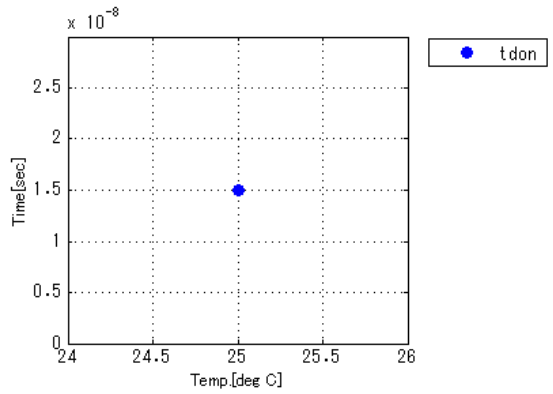


IsVsd[Vgs]



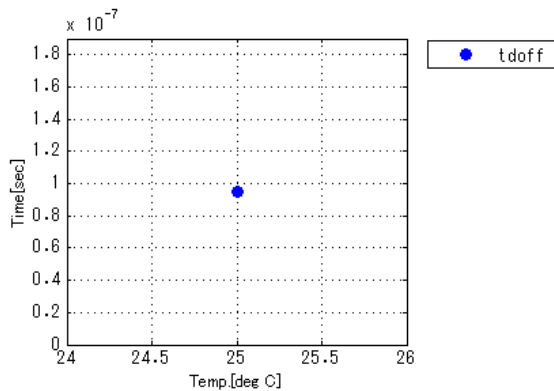
tdon

Vdd = 30V, Id = 5A, +Vg = 10V, -Vg = 0V, Rg = 0.001ohm



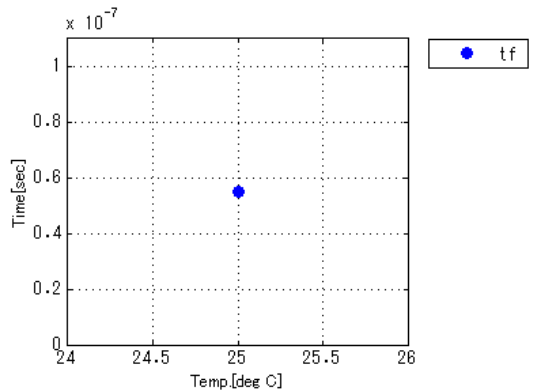
tdoff

Vdd = 30V, Id = 5A, +Vg = 10V, -Vg = 0V, Rg = 0.001ohm



tf

Vdd = 30V, Id = 5A, +Vg = 10V, -Vg = 0V, Rg = 0.001ohm

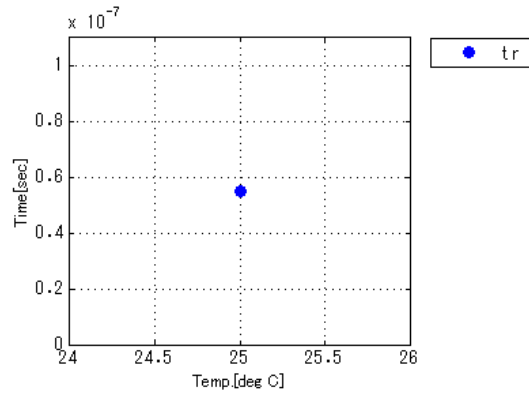


Simulation results are following.

Explanatory notes — : simulated

tr

Vdd = 30V, Id = 5A, +Vg = 10V, -Vg = 0V, Rg = 0.001ohm



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