

LTspice Model

NMOS

ROHM

SCT3030AL



Model Information

Model A macro model based on BSIM3 model
Call Name MDC_SCT3030AL_LT
Pin Assign 1:G 2:D 3:S
File List Model Library MDC_SCT3030AL_LT01.lib
 Model Report MDC_SCT3030AL_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 14.Jun.2018/Rev.005
- Product name SCT3030AL
- Company name ROHM Co., Ltd.
- Characteristics IdVgs[Temp], IdVds[Vgs], VthTemp[Id], Rds(on)Vgs[Id], Rds(on)Temp[Id], Rds(on)Id[Temp], Crss, Coss, Ciss, VgsQg[Vdd], IsVsd[Temp], tdon, tdoff, tf, tr

Simulation Range

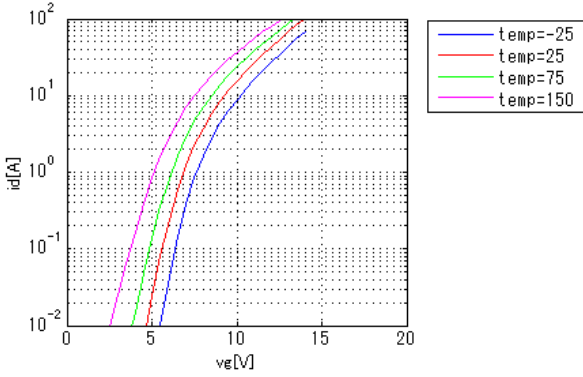
This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

Item	Range			Unit
	Min.		Max.	
Drain-source voltage (DC)	0	to	650	V
Gate-source voltage (DC)	0	to	22	V
Temperature	-55	to	175	deg C

Simulation results are following.
 Explanatory notes — : simulated

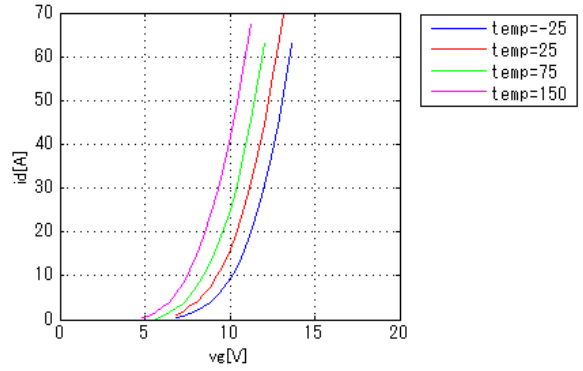
IdVgs[Temp]

Vds = 10V



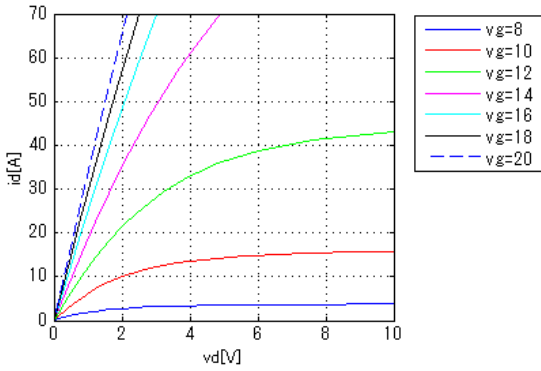
IdVgs[Temp]

Vds = 10V



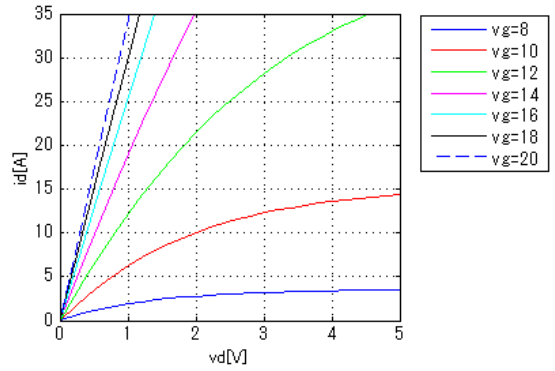
IdVds[Vgs]

Temp. = 25deg C



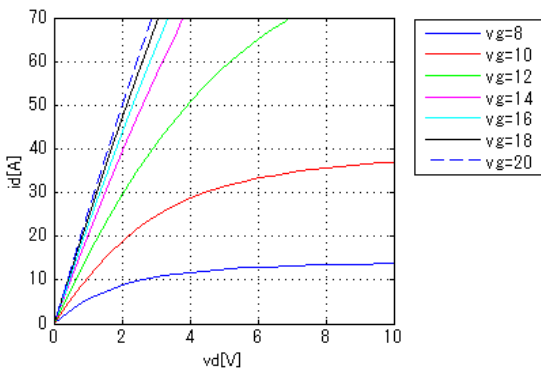
IdVds[Vgs]

Temp. = 25deg C



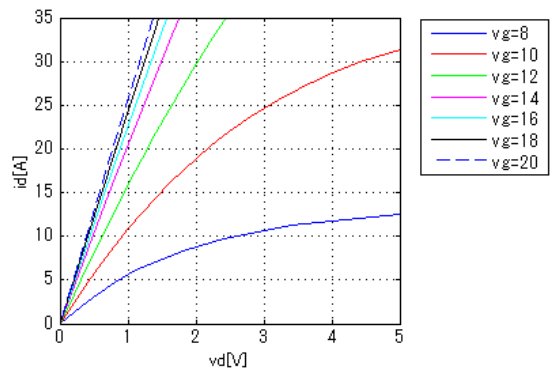
IdVds[Vgs]

Temp. = 150deg C



IdVds[Vgs]

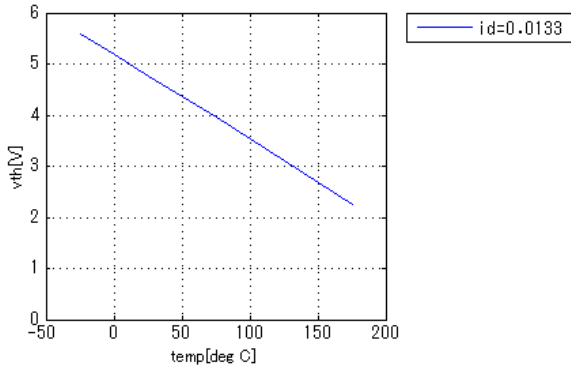
Temp. = 150deg C



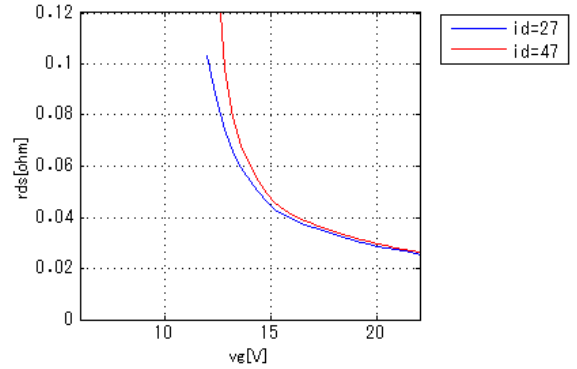
Simulation results are following.
 Explanatory notes — : simulated

VthTemp[Id]

Vds = 10V

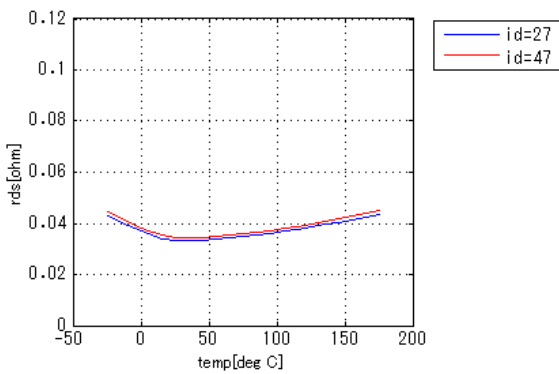


Rds(on)Vgs[Id]



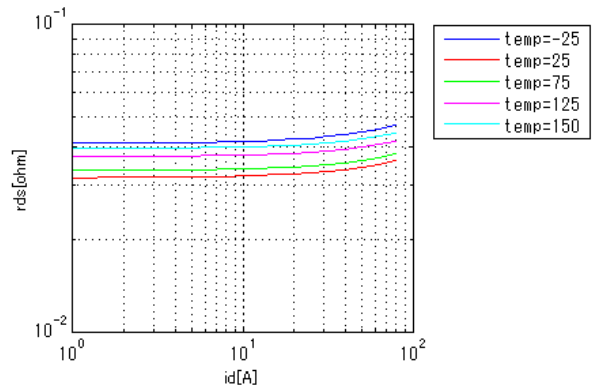
Rds(on)Temp[Id]

Vgs = 18V



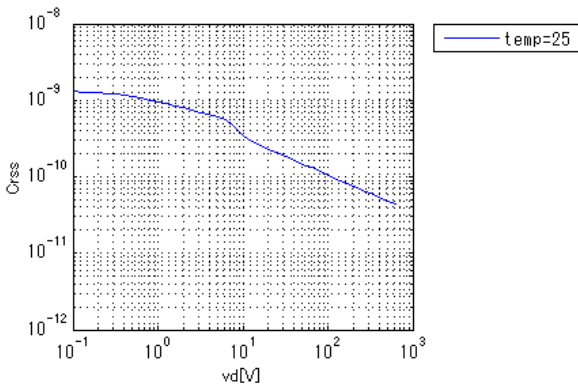
Rds(on)Id[Temp]

Vgs = 18V



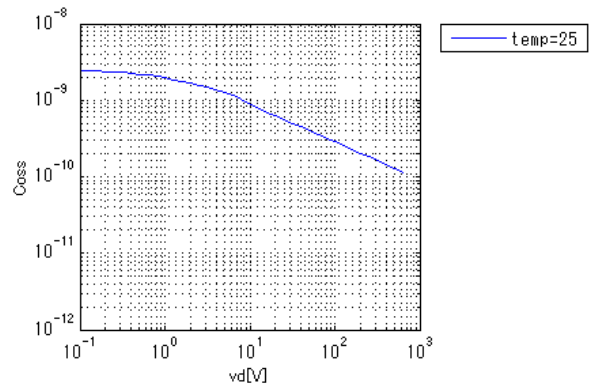
Crss

Freq. = 1MHz



Coss

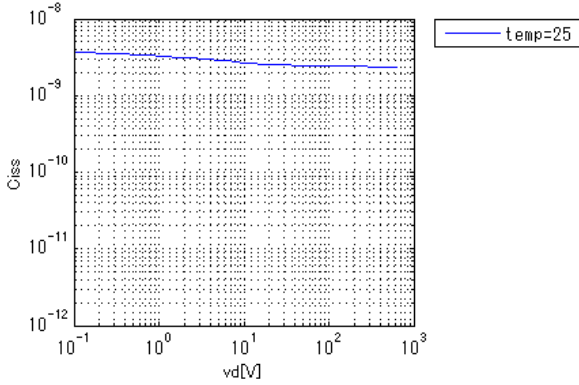
Freq. = 1MHz



Simulation results are following.
 Explanatory notes — : simulated

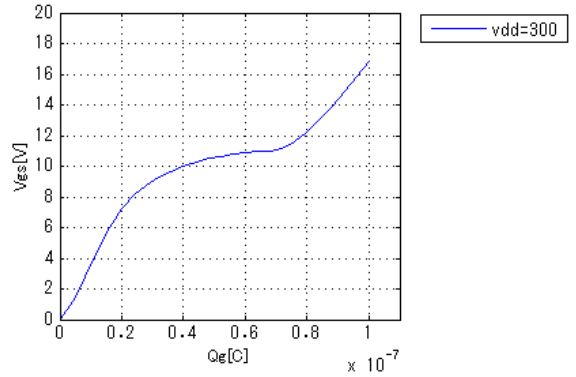
Ciss

Freq. = 1MHz

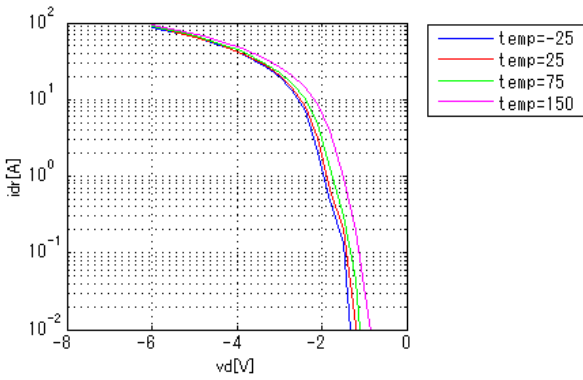


VgsQg[Vdd]

Id = 27A

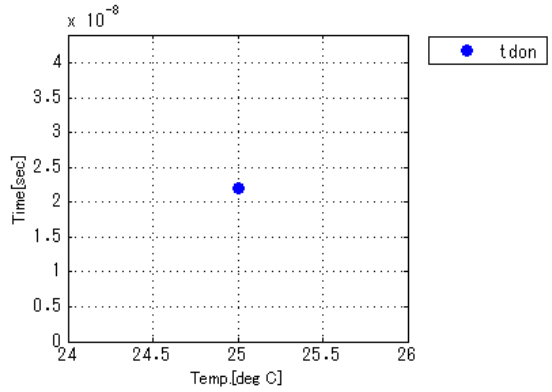


IsVsd[Temp]



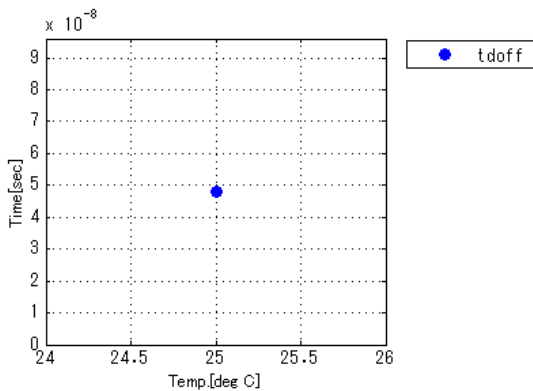
tdon

Vdd = 300V, Id = 18A, +Vg = 18V, -Vg = 0V, Rg = 0ohm



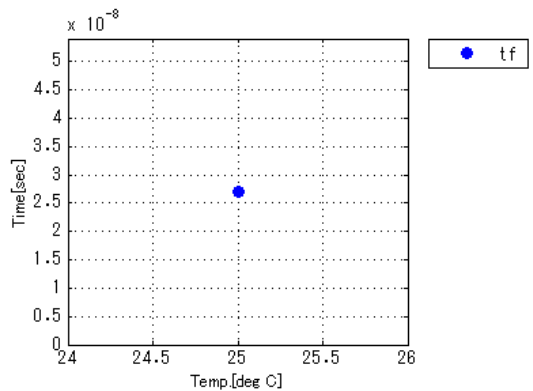
tdoff

Vdd = 300V, Id = 18A, +Vg = 18V, -Vg = 0V, Rg = 0ohm



tf

Vdd = 300V, Id = 18A, +Vg = 18V, -Vg = 0V, Rg = 0ohm

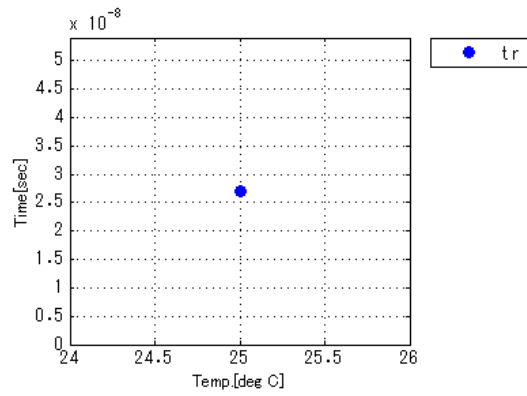


Simulation results are following.

Explanatory notes — : simulated

tr

Vdd = 300V, Id = 18A, +Vg = 18V, -Vg = 0V, Rg = 0ohm



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MoDeCH Inc.

Head Office

Location: Mitsuseimei Hachioji Bldg., 5-15 Yokoyama-cho, Hachioji-Shi, Tokyo 192-0081, Japan

Tel:+81-42-656-3360

E-Mail:model-on-support@modech.co.jp

URL:<http://www.modech.com/en/>