

LTspice Model

NMOS+NMOS

RENESAS

UPA3753GR-E1-AX

Model Information

Model A macro model based on BSIM3 model
Call Name MDC_UPA3753GR-E1-AX_LT
Pin Assign 1:S 2:G 3:S 4:G 5:D 6:D 7:D 8:D
File List Model Library MDC_UPA3753GR-E1-AX_LT01.lib
 Model Report MDC_UPA3753GR-E1-AX_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 Rev. 1.00
- Product name UPA3753GR-E1-AX
- Company name Renesas Electronics Corporation
- Characteristics IdVds[Vgs], IdVgs[Temp], VthTemp[Id], Rds(on)Id[Vgs], Rds(on) Vgs[Id], Rds(on)Temp[Vgs], Crss, Coss, Ciss, VdsQg[Vdd], Vgs Qg[Vdd], IsVsd[Vgs], tdon, tdoff, tf, tr

Simulation Range

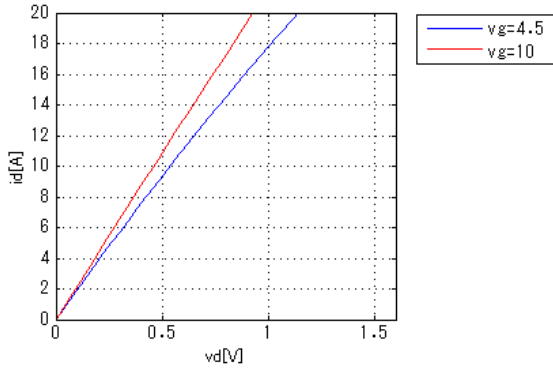
This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

Item	Range			Unit
	Min.		Max.	
Drain-source voltage (DC)	0	to	60	V
Gate-source voltage (DC)	0	to	20	V
Temperature	-55	to	150	deg C

Simulation results are following.
 Explanatory notes — : simulated

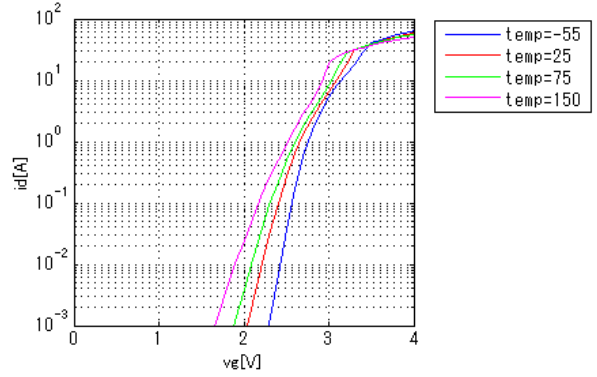
IdVds[Vgs]

Temp. = 25deg C



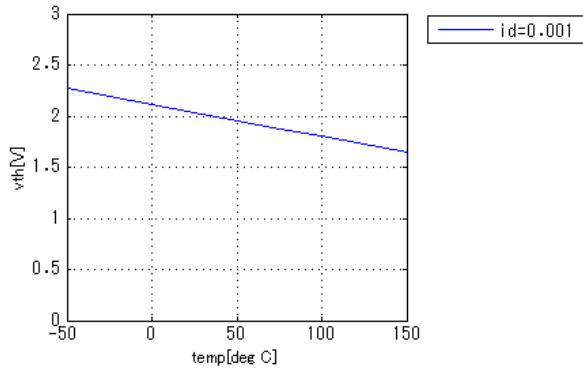
IdVgs[Temp]

$V_{ds} = 10V$

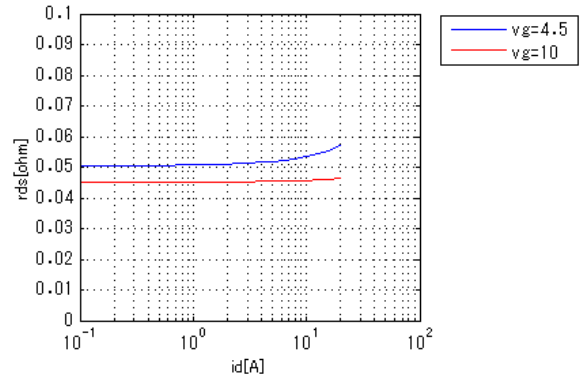


VthTemp[Id]

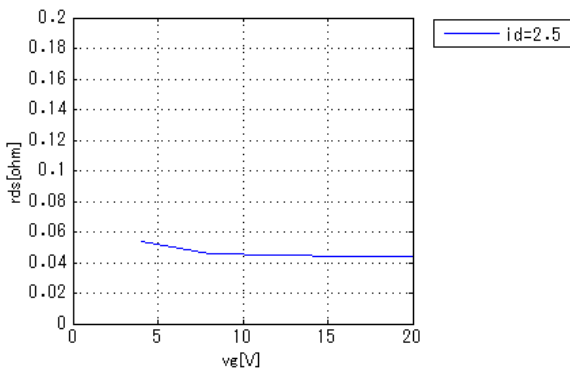
$V_{ds} = 10V$



Rds(on)Id[Vgs]

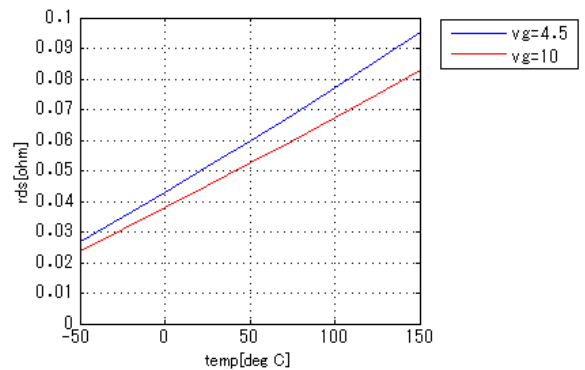


Rds(on)Vgs[Id]



Rds(on)Temp[Vgs]

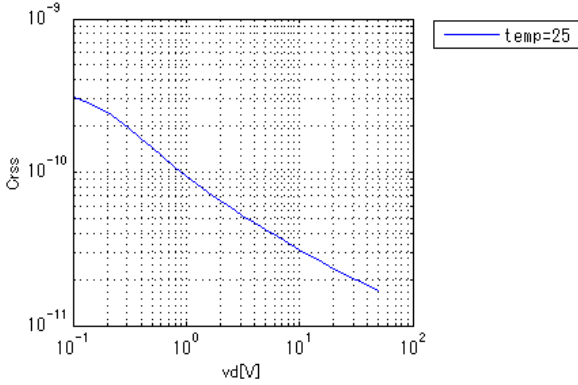
$I_d = 2.5A$



Simulation results are following.
 Explanatory notes — : simulated

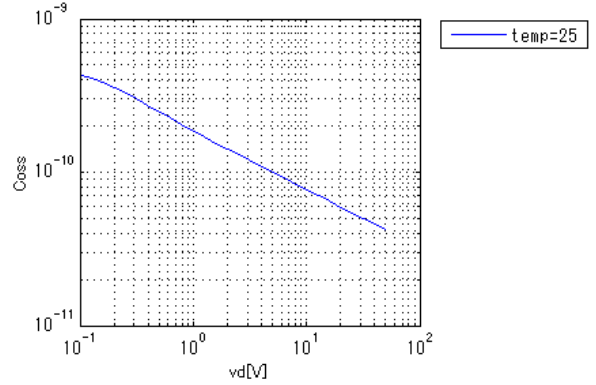
Crss

Freq. = 1MHz



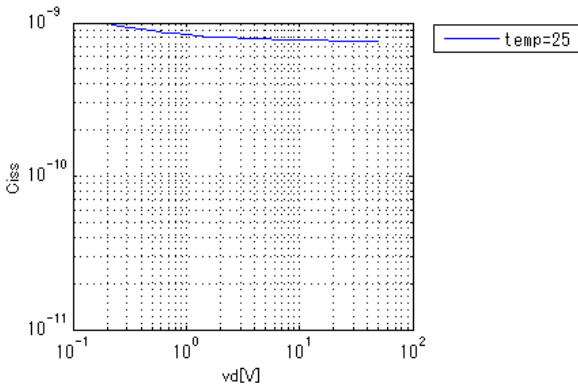
Coss

Freq. = 1MHz



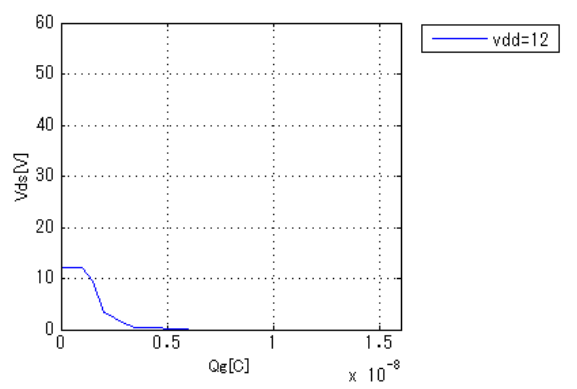
Ciss

Freq. = 1MHz



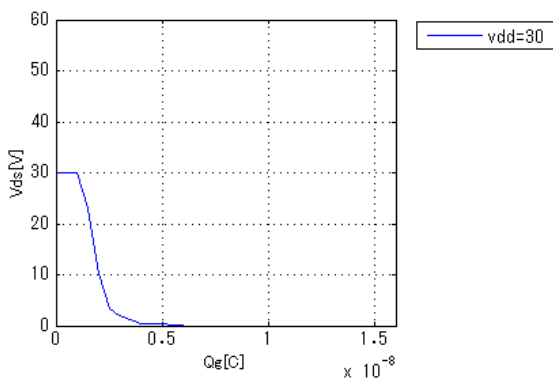
VdsQg[Vdd]

Id = 5A



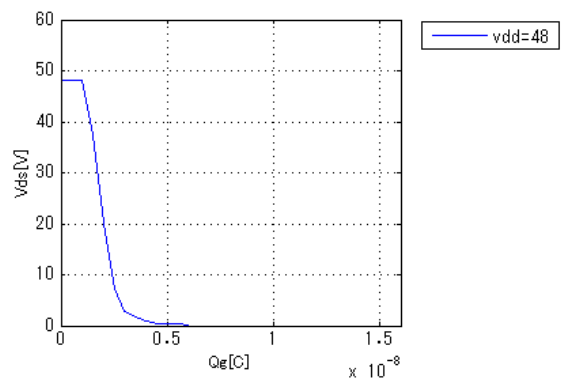
VdsQg[Vdd]

Id = 5A



VdsQg[Vdd]

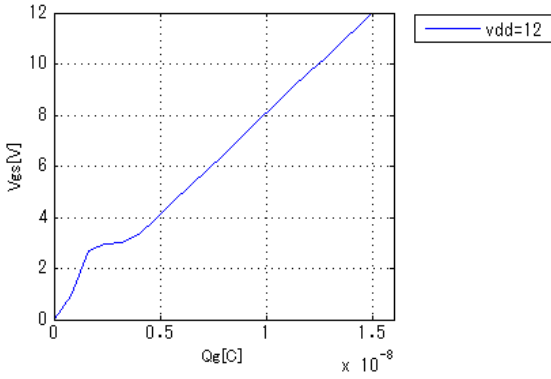
Id = 5A



Simulation results are following.
 Explanatory notes — : simulated

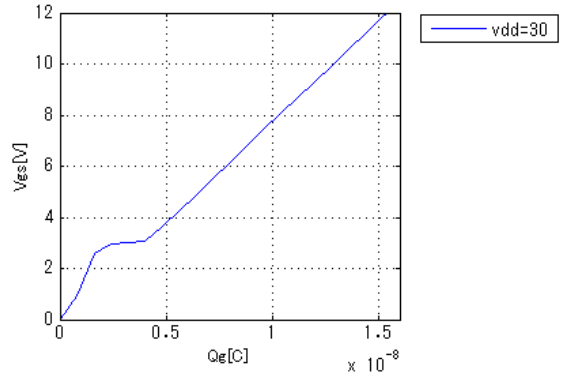
VgsQg[Vdd]

Id = 5A



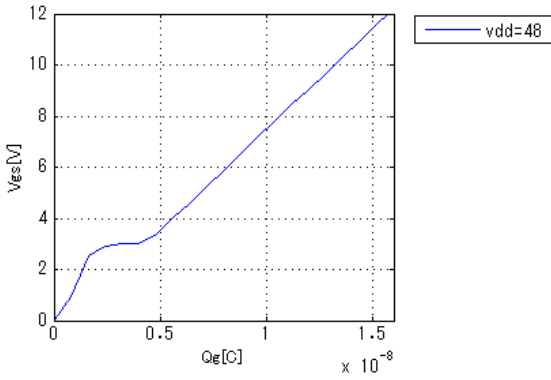
VgsQg[Vdd]

Id = 5A

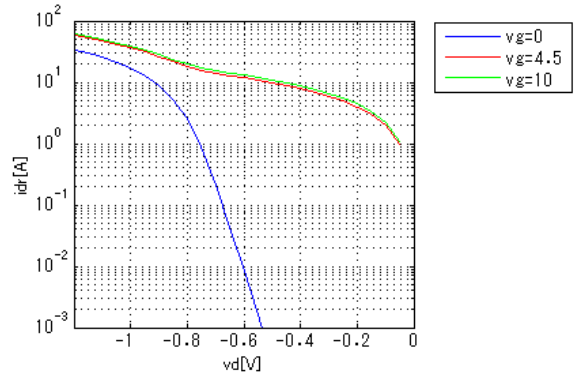


VgsQg[Vdd]

Id = 5A

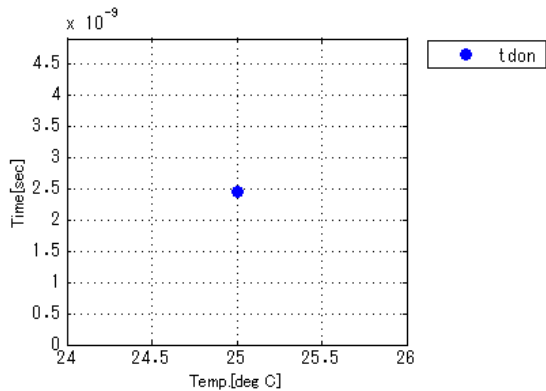


IsVsd[Vgs]



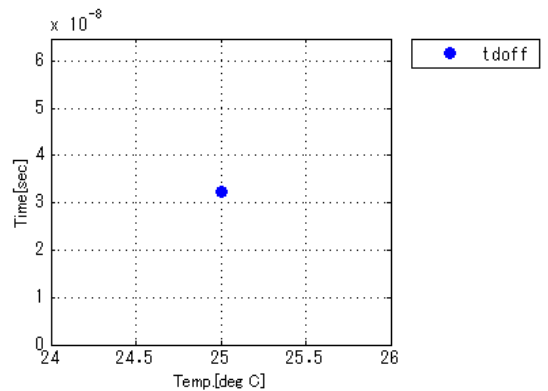
tdon

Vdd = 30V, Id = 2.5A, +Vg = 10V, -Vg = 0V, Rg = 10ohm



tdoff

Vdd = 30V, Id = 2.5A, +Vg = 10V, -Vg = 0V, Rg = 10ohm

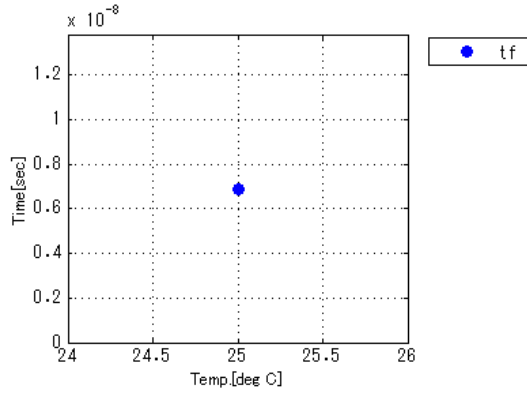


Simulation results are following.

Explanatory notes — : simulated

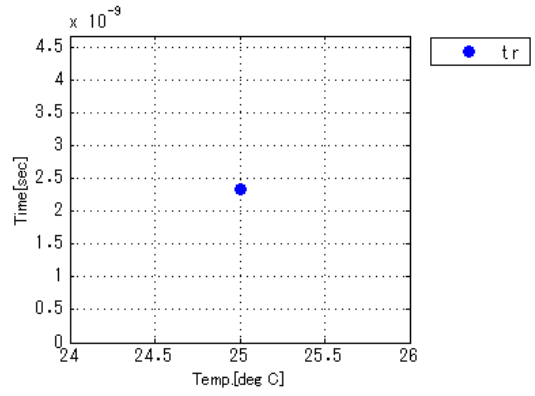
tf

Vdd = 30V, Id = 2.5A, +Vg = 10V, -Vg = 0V, Rg = 10ohm



tr

Vdd = 30V, Id = 2.5A, +Vg = 10V, -Vg = 0V, Rg = 10ohm



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MoDeCH Inc.

Head Office

Location: Taijuseimei 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/>