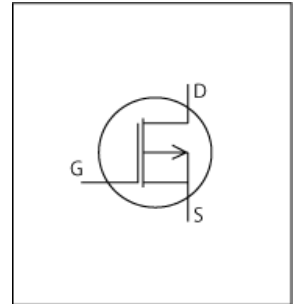


LTspice Model

PMOS

ROHM

RSD140P06



Model Information

Model A macro model based on BSIM3 model
Call Name MDC_RSD140P06_LT
Pin Assign 1:G 2:D 3:S
File List Model Library MDC_RSD140P06_LT01.lib
 Model Report MDC_RSD140P06_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 2011.08 - Rev.A
- Product name RSD140P06
- Company name ROHM Co., Ltd.
- Characteristics IdVds[Vgs], IdVds[Vgs]2, Rds(on)Id[Vgs], Rds(on)Id[Temp], Rds(on)Id[Temp]2, Rds(on)Id[Temp]3, YfsId[Temp], IdVgs[Temp], IsVsd[Temp], Rds(on)Vgs[Id], SwitchingIdd[Tname], VgsQg[Vd d], CapacitanceVds[Cname], SwitchingWaveform

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)	20	to	-20	V
Temperature	-55	to	150	deg C

MOSFET

○ : Implemented
× : Not Implemented
— : Not applicable

Model Functions Table

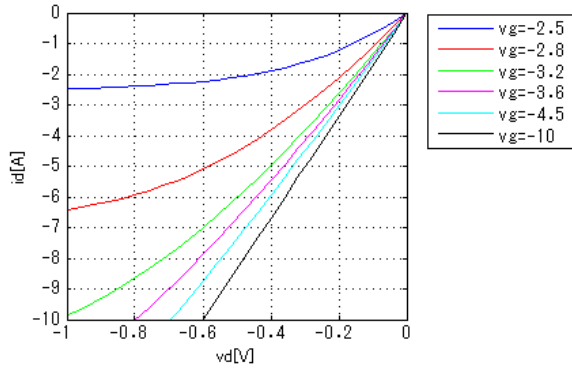
RANK=1

Functions	RANK	Implemented
ID-VDS-VGS	1	○
ID-VGS(Temp)	1	○
RDS(on)	1	○
Capacitance	1	○
Gate Charge	1	○
IS-VSD(Forward)	1	○
Reverse recovery	1	—
Switching(Typ.)	1	○
Bv	1	—
Yfs	1	○
Vth	1	—

Simulation results are following.
 Explanatory notes — : simulated

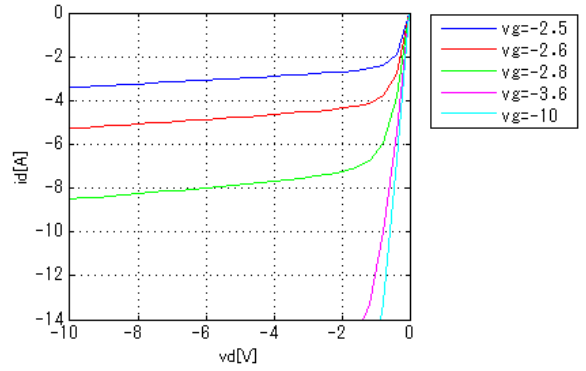
IdVds[Vgs]

Temp = 25degC



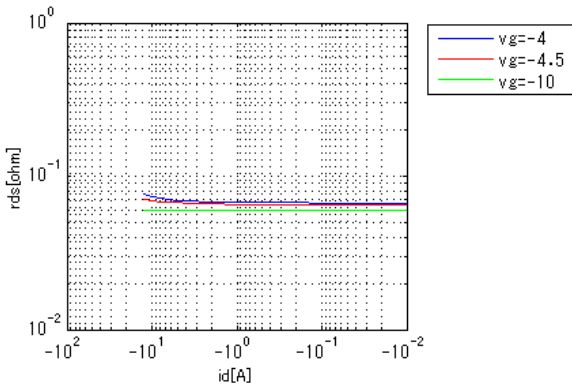
IdVds[Vgs]2

Temp = 25degC



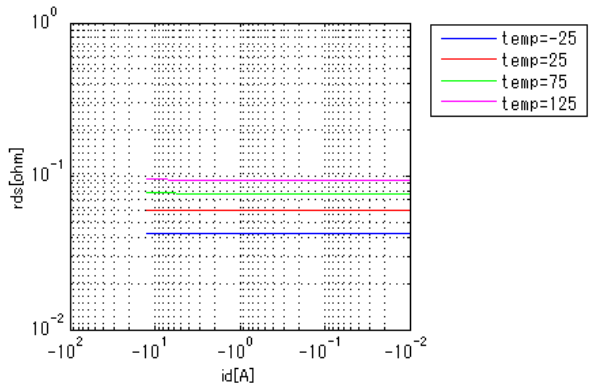
Rds(on)Id[Vgs]

Temp = 25degC



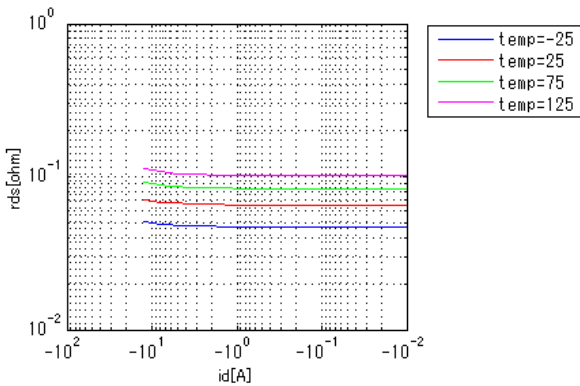
Rds(on)Id[Temp]

Vgs = -10V



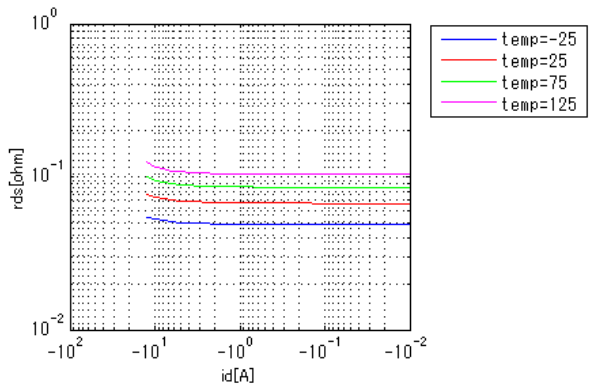
Rds(on)Id[Temp]2

Vgs = -4.5V



Rds(on)Id[Temp]3

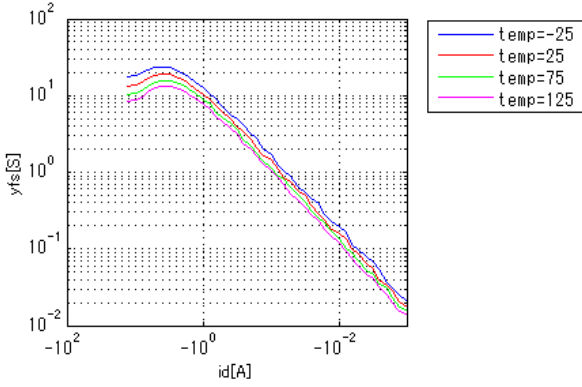
Vgs = -4V



Simulation results are following.
 Explanatory notes — : simulated

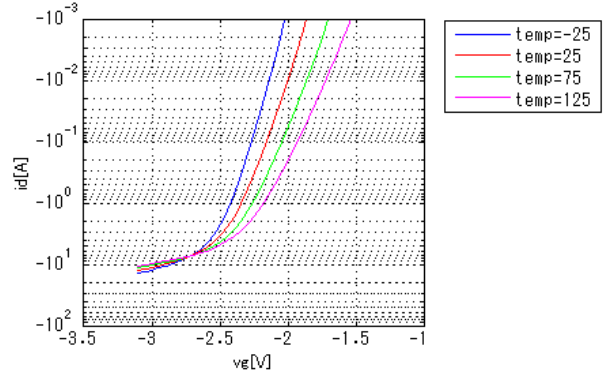
YfsId[Temp]

Vds = -10V



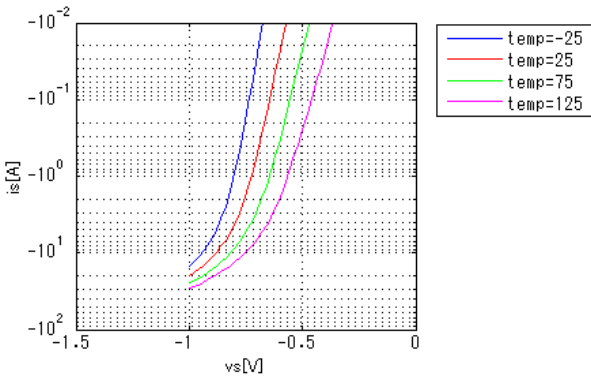
IdVgs[Temp]

Vds = -10V



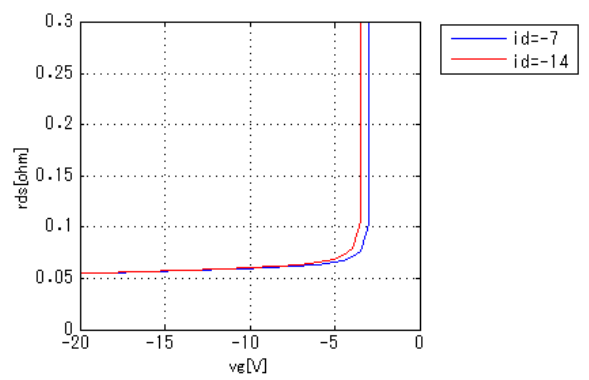
IsVsd[Temp]

vg = 0V



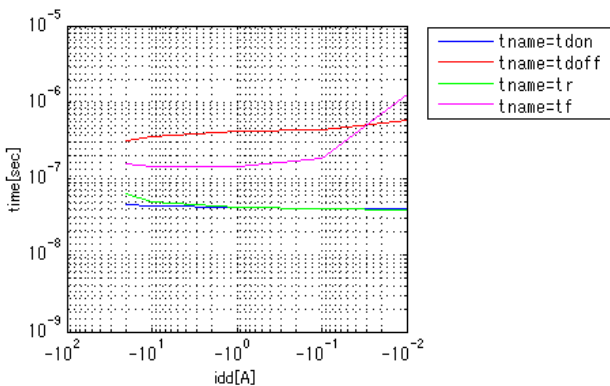
Rds(on)Vgs[Id]

Temp = 25degC



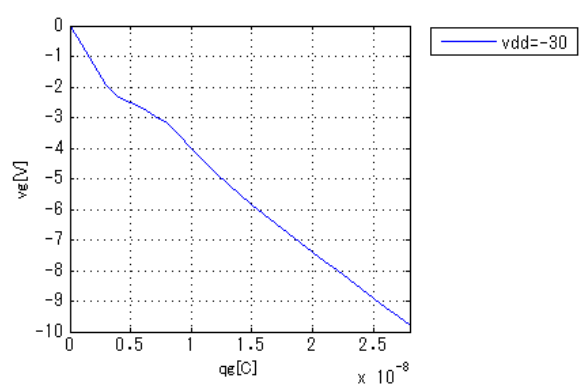
SwitchingIdd[Tname]

vgs = -10V, vdd = -30V, RGG = 100ohm



VgsQg[Vdd]

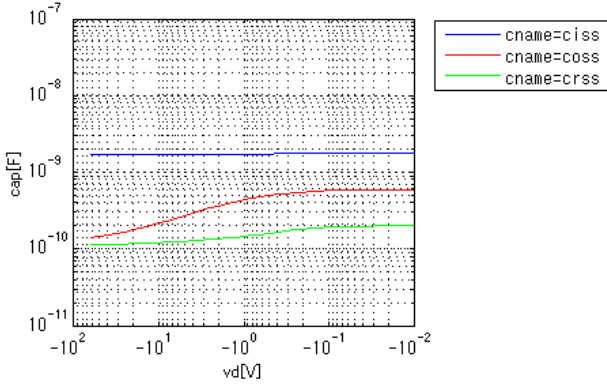
Id = -14A



Simulation results are following.
 Explanatory notes — : simulated

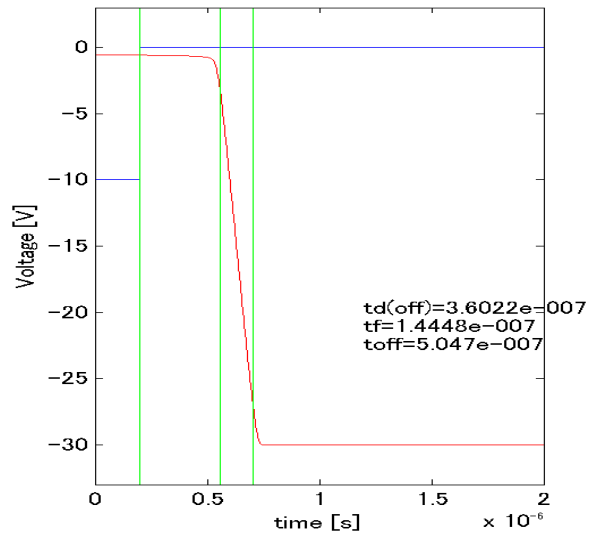
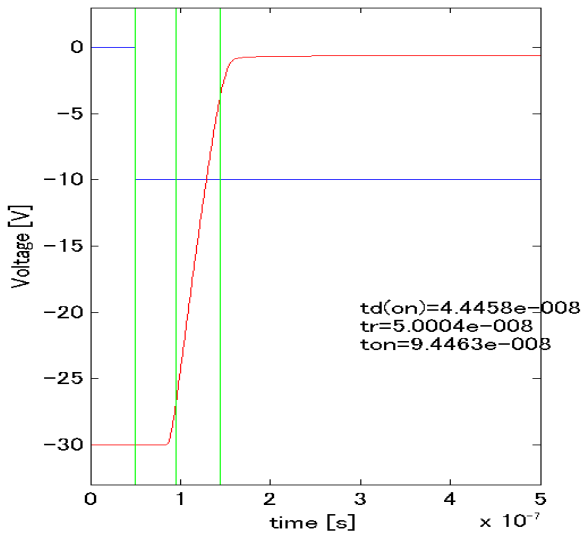
CapacitanceVds[Cname]

freq = 1000000Hz



Switching Waveform (Blue : INPUT Red : OUTPUT)

v_{gg} = -10V, v_{cc} = -30V, R_{GG} = 100ohm, Temp = 25degC, I_c = -10A



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