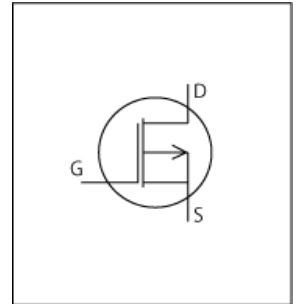


# PSpice Model

## PMOS

## ROHM

## RSD140P06



### Model Information

**Model** A macro model based on BSIM3 model  
**Call Name** MDC\_RSD140P06\_PS  
**Pin Assign** 1:G 2:D 3:S  
**File List** Model Library MDC\_RSD140P06\_PS01.lib  
 Model Report MDC\_RSD140P06\_PS.pdf (this file)

**Verified Simulator Version** PSpice version 17.2  
**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

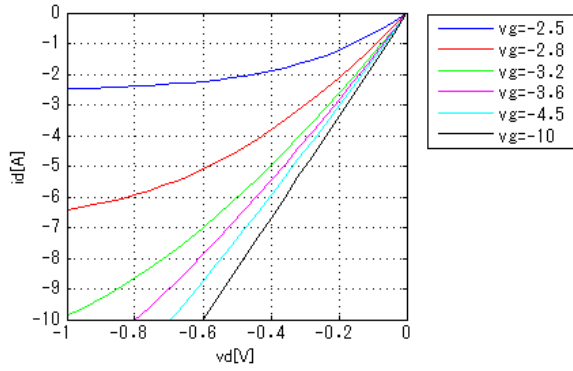
RANK=1

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

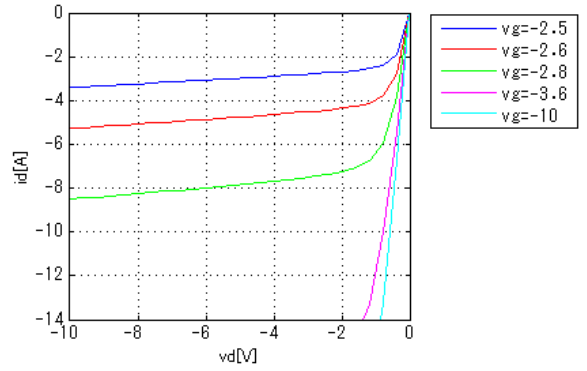
**IdVds[Vgs]**

Temp = 25degC



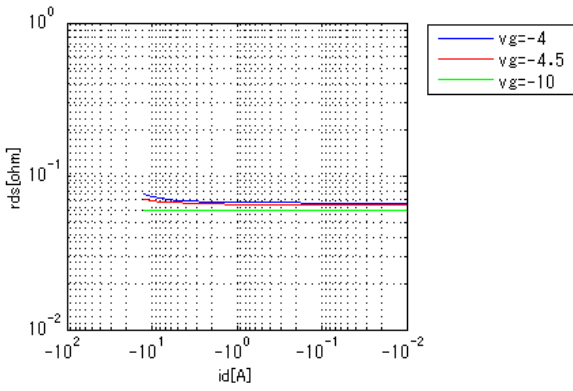
**IdVds[Vgs]2**

Temp = 25degC



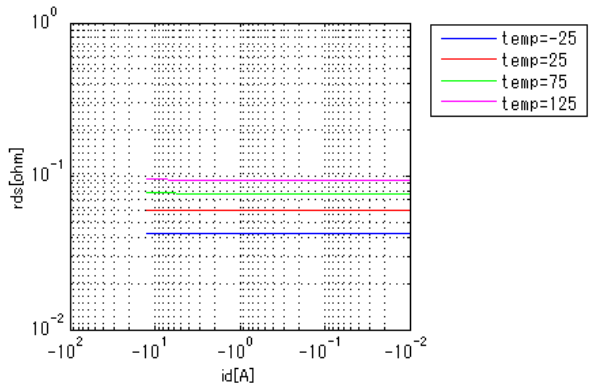
**Rds(on)Id[Vgs]**

Temp = 25degC



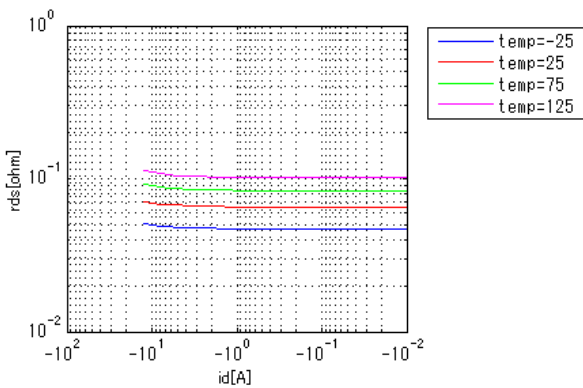
**Rds(on)Id[Temp]**

Vgs = -10V



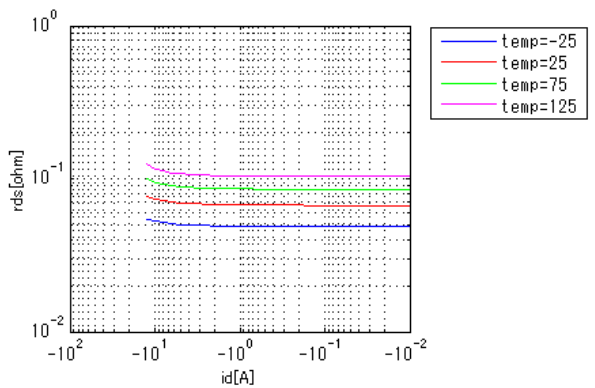
**Rds(on)Id[Temp]2**

Vgs = -4.5V



**Rds(on)Id[Temp]3**

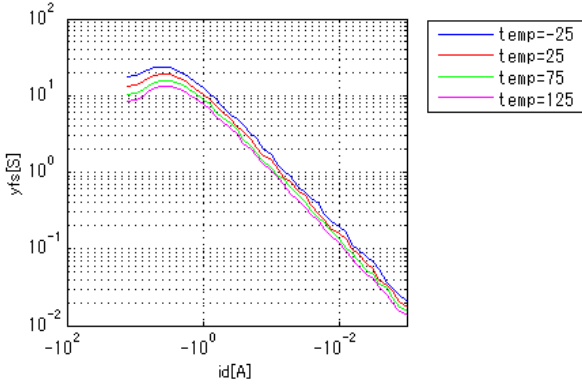
Vgs = -4V



Simulation results are following.  
 Explanatory notes — : simulated

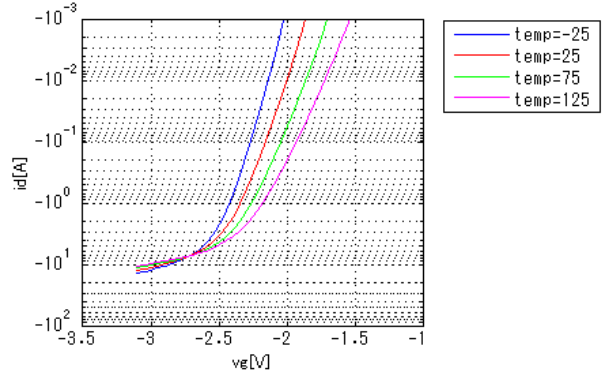
**YfsId[Temp]**

Vds = -10V



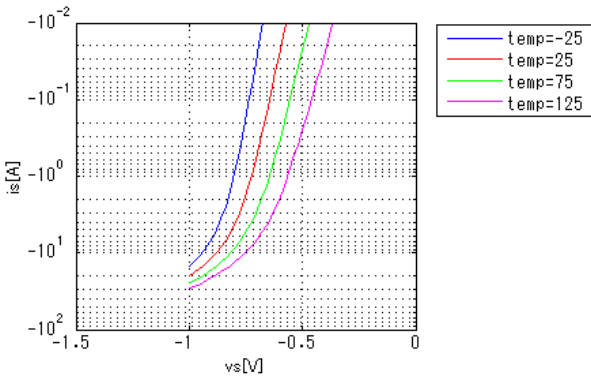
**IdVgs[Temp]**

Vds = -10V



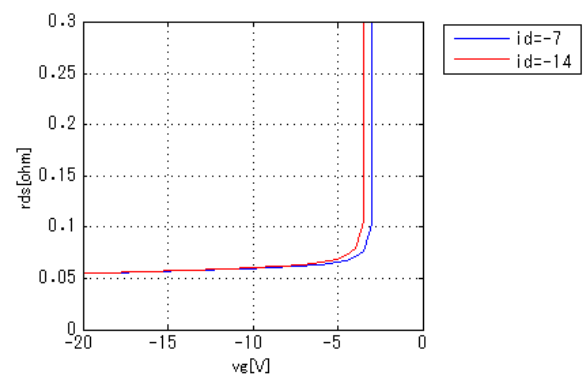
**IsVsd[Temp]**

vg = 0V



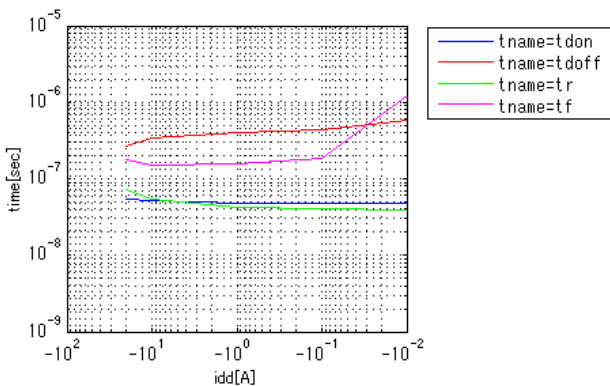
**Rds(on)Vgs[Id]**

Temp = 25degC



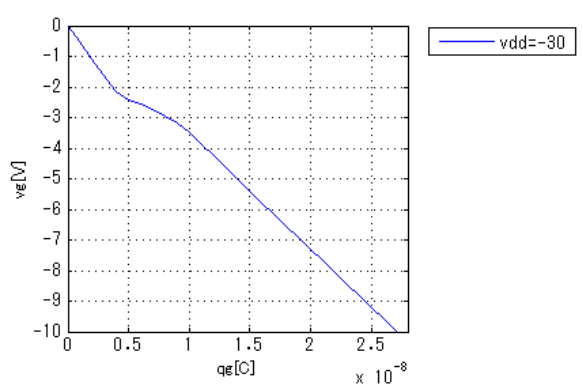
**SwitchingIdd[Tname]**

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



**VgsQg[Vdd]**

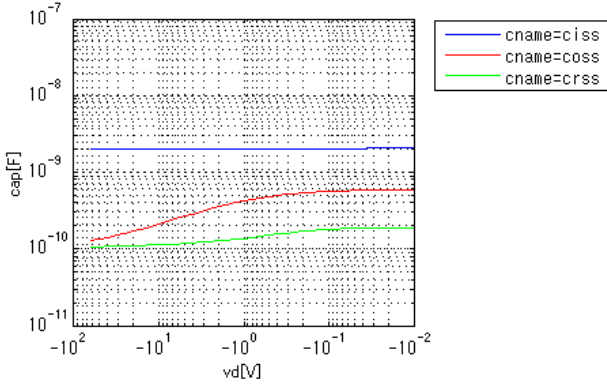
Id = -14A



Simulation results are following.  
 Explanatory notes — : simulated

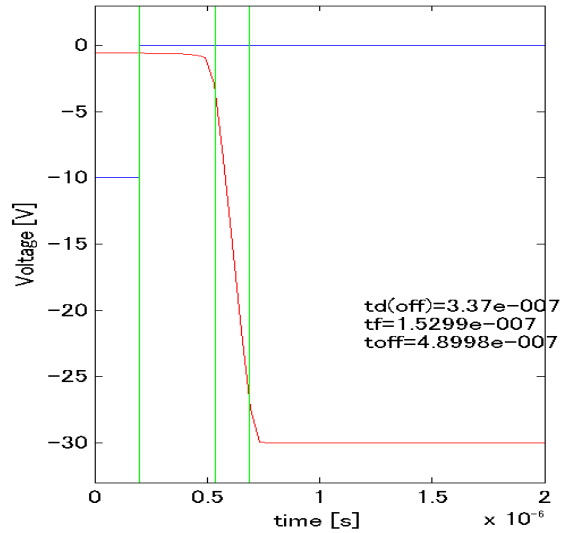
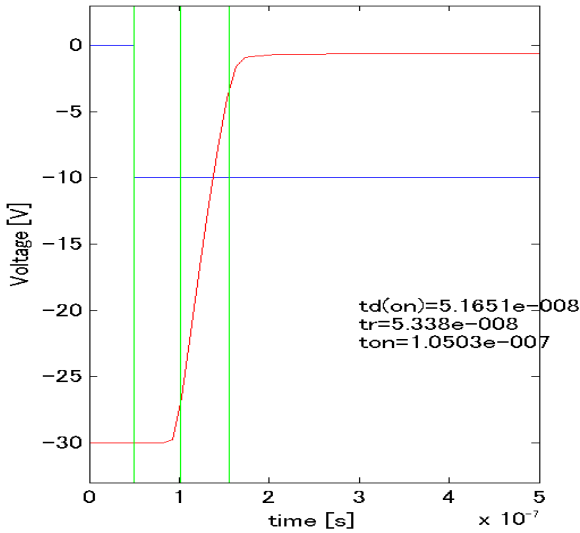
**CapacitanceVds[Cname]**

freq = 1000000Hz



**Switching Waveform ( Blue : INPUT Red : OUTPUT )**

v<sub>gg</sub> = -10V, v<sub>cc</sub> = -30V, R<sub>GG</sub> = 100ohm, Temp = 25degC, I<sub>c</sub> = -10A



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