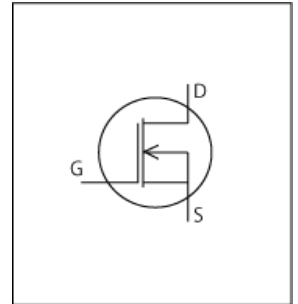


LTspice Model

NMOS

ON

BSS138



Model Information

Model A macro model based on BSIM3 model
Call Name MDC_BSS138_LT
Pin Assign 1:D 2:G 3:S
File List Model Library MDC_BSS138_LT01.lib
 Model Report MDC_BSS138_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 September-2017, Rev.3
- Product name BSS138
- Company name ON Semiconductor.
- Characteristics IdVds[Vgs], Rds(on)Id[Vgs], Rds(on)Temp[Id], Rds(on)Vgs[Temp], IdVgs[Temp], IsVsd[Temp], VgsQg[Vdd], CapacitanceVds[Cname], YfsId[Temp], SwitchingIdd[Tname], SwitchingWaveform

Simulation Range

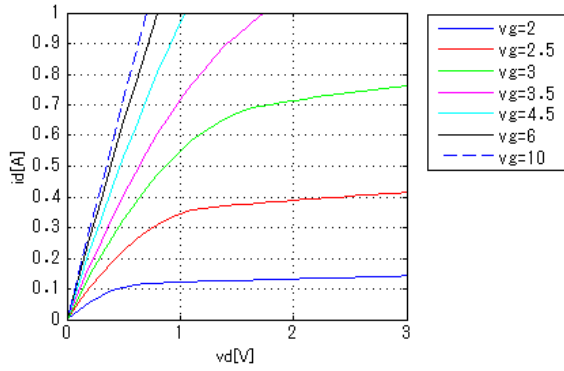
This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

Item	Range			Unit
	Min.		Max.	
Drain-source voltage (DC)	0	to	50	V
Gate-source voltage (DC)	-20	to	20	V
Temperature	-55	to	150	deg C

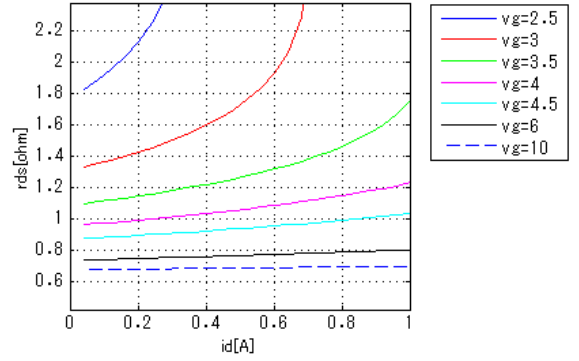
Simulation results are following.
 Explanatory notes — : simulated

IdVds[Vgs]

Temp. = 25degC

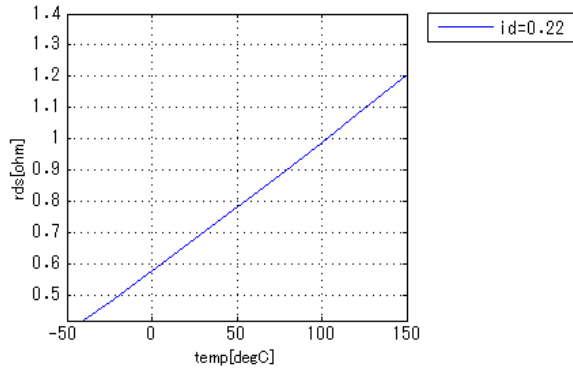


Rds(on)Id[Vgs]



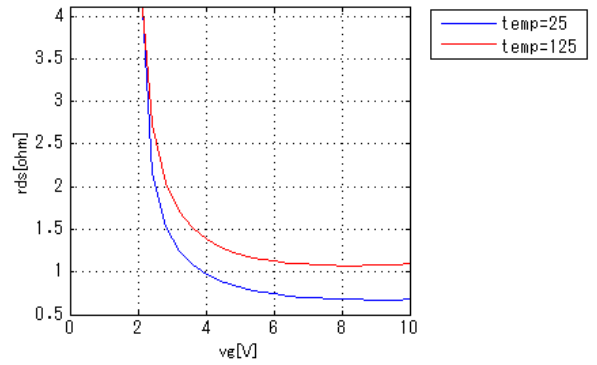
Rds(on)Temp[Id]

Vgs = 10V



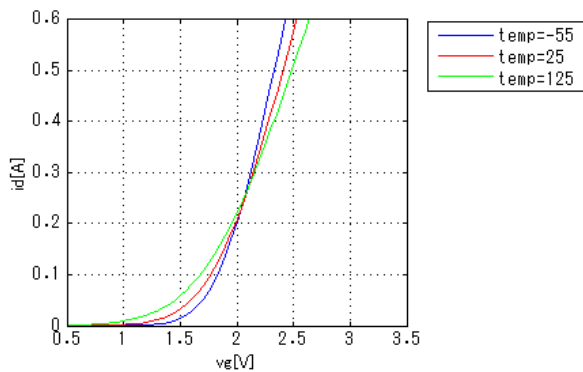
Rds(on)Vgs[Temp]

Id = 0.11A

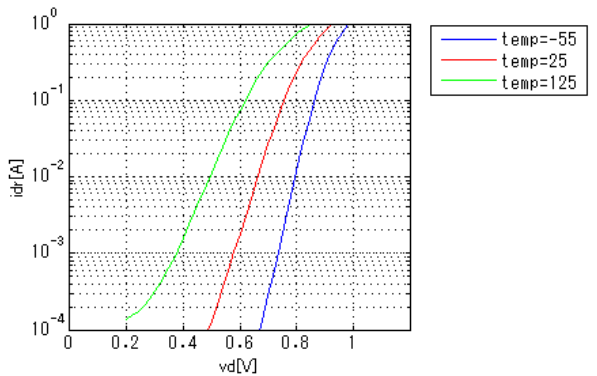


IdVgs[Temp]

Vds = 10V



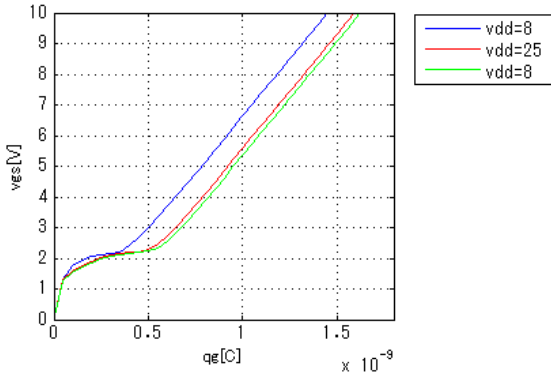
IsVsd[Temp]



Simulation results are following.
 Explanatory notes — : simulated

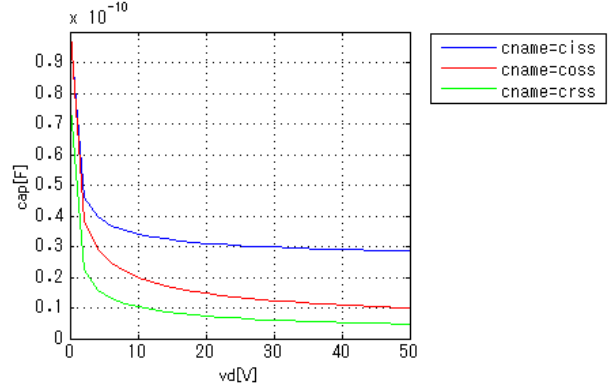
VgsQg[Vdd]

Id = 0.22A



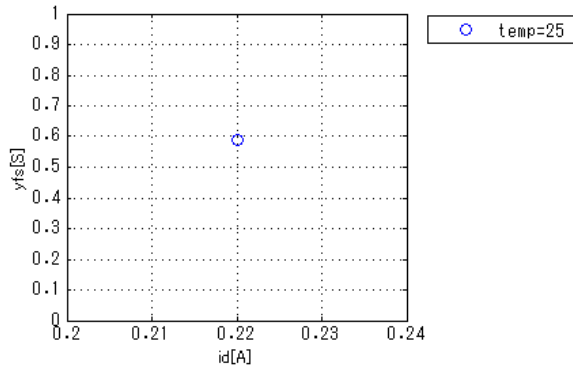
CapacitanceVds[Cname]

freq = 1000000Hz

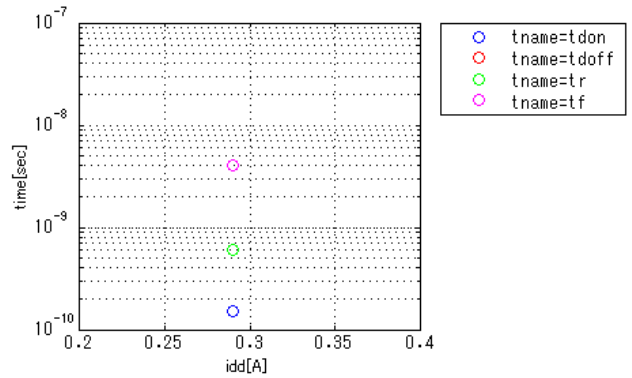


YfslId[Temp]

Vds = 10V

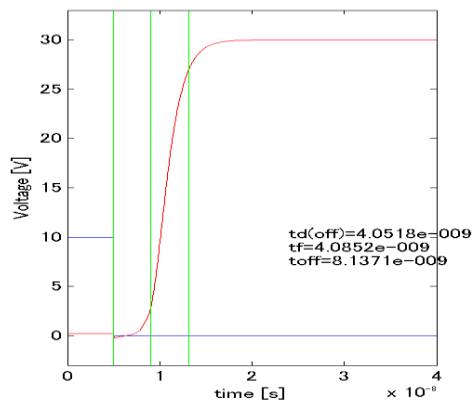
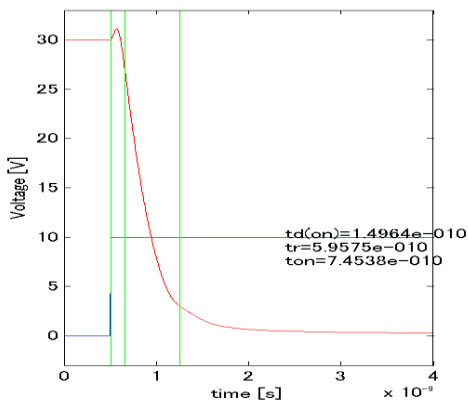


SwitchingIdd[Tname]



Switching Waveform

Blue : INPUT Red : OUTPUT



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