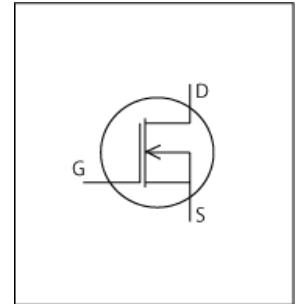


# LTspice Model

## NMOS

## STM

## STFW3N150



### Model Information

**Model** A macro model based on BSIM3 model  
**Call Name** MDC\_STFW3N150\_LT  
**Pin Assign** 1:G 2:D 3:S  
**File List** Model Library MDC\_STFW3N150\_LT01.lib  
 Model Report MDC\_STFW3N150\_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 12 - May 2020
- Product name STFW3N150
- Company name STMicroelectronics N.V.
- Characteristics IdVds[Vgs], IdVgs[Temp], BvTemp[ir], Rds(on)Id[Vgs], VgsQg[Vdd], CapacitanceVds[Cname], Vsdls[Temp], SwitchingIdd[Tname], Trrlf[ir], Qrrlf[ir], SwitchingWaveform, TrWaveform

### Simulation Range

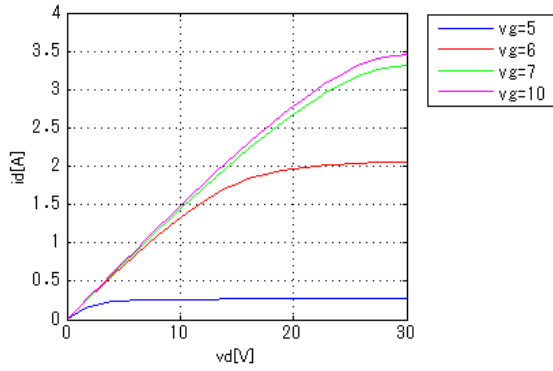
This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

Item	Range			Unit
	Min.		Max.	
Drain-source voltage (DC)	0	to	1,500	V
Gate-source voltage (DC)	-30	to	30	V
Temperature	-55	to	150	deg C

Simulation results are following.  
 Explanatory notes — : simulated

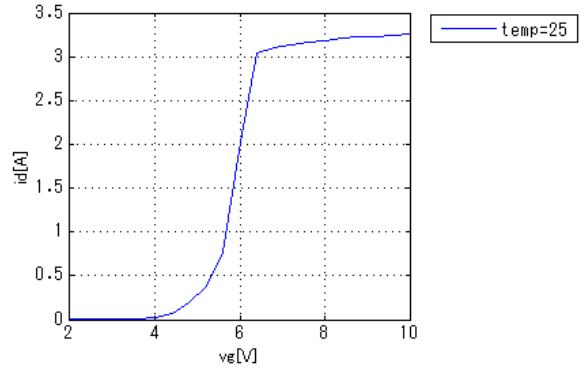
**IdVds[Vgs]**

Temp. = 25degC

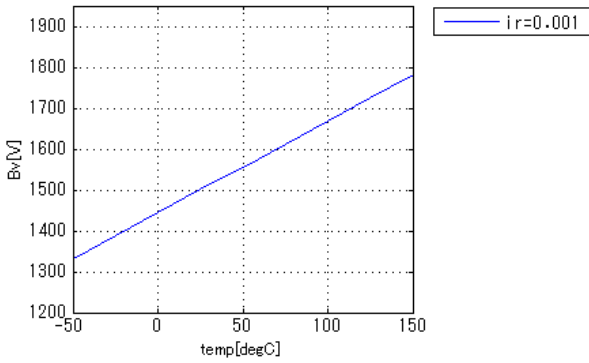


**IdVgs[Temp]**

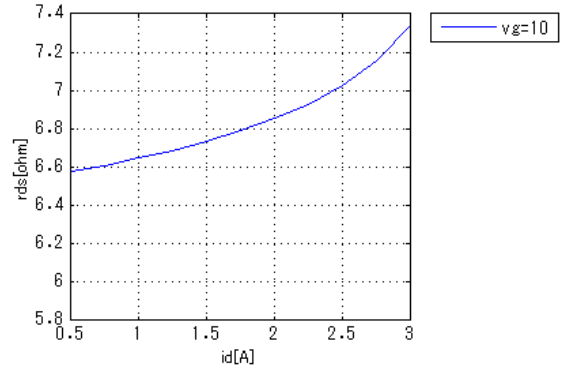
Vds = 25V



**BvTemp[ir]**

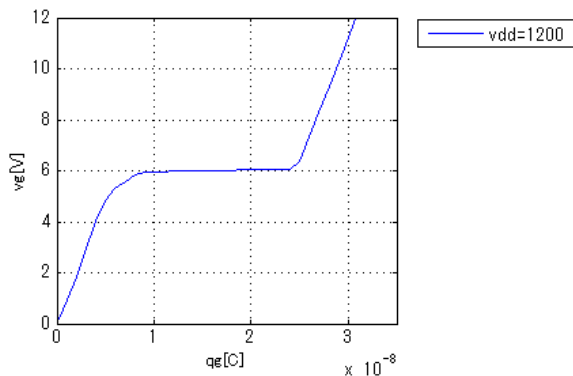


**Rds(on)Id[Vgs]**



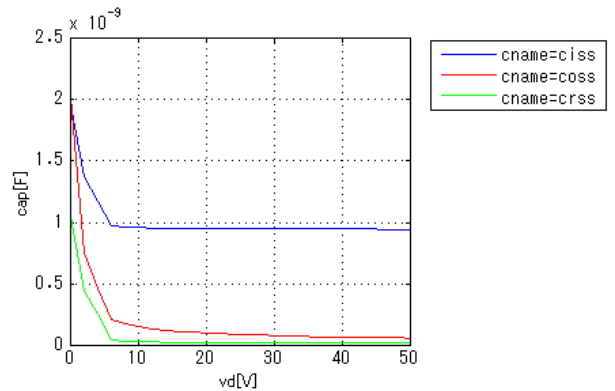
**VgsQg[Vdd]**

Id = 2.5A



**CapacitanceVds[Cname]**

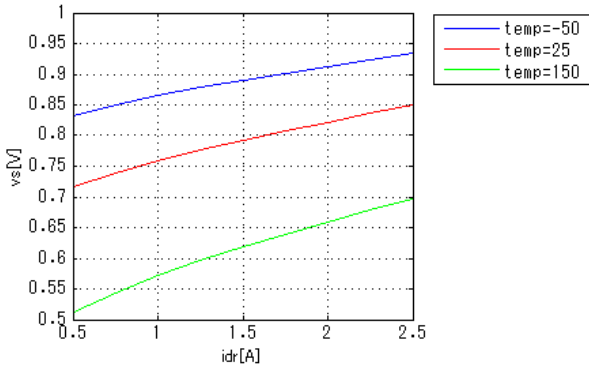
freq = 1000000Hz



Simulation results are following.  
 Explanatory notes — : simulated

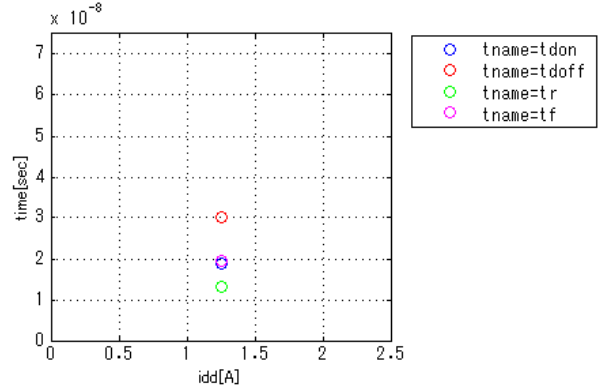
**VsdlS[Temp]**

vg = 0V



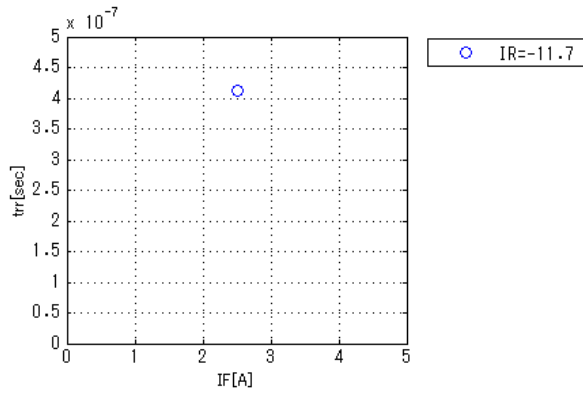
**SwitchingIdd[Tname]**

v<sub>gg</sub> = 10V, v<sub>dd</sub> = 750V, R<sub>GG</sub> = 4.7ohm



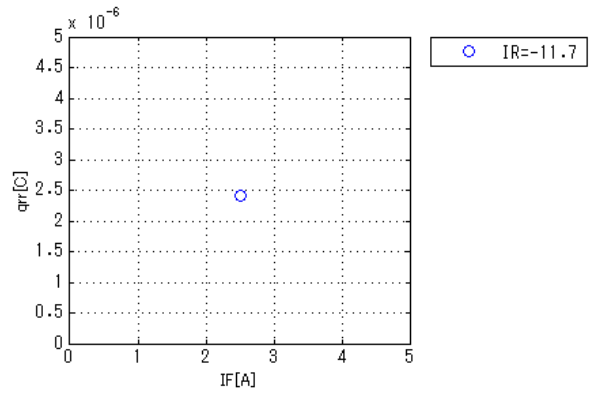
**Trrlf[Ir]**

v<sub>dd</sub> = 60V, didt = 100A/us, Temp = 25degC



**Qrrlf[Ir]**

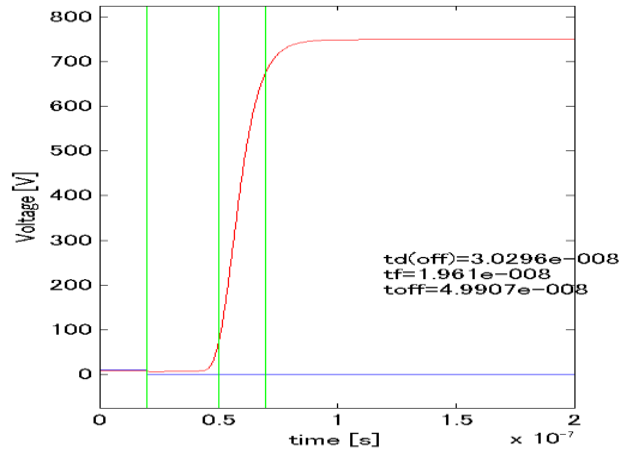
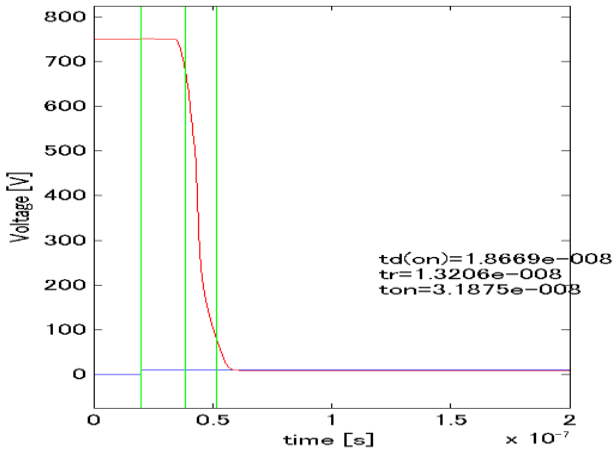
v<sub>dd</sub> = 60V, didt = 100A/us, Temp = 25degC



Simulation results are following.  
 Explanatory notes — : simulated

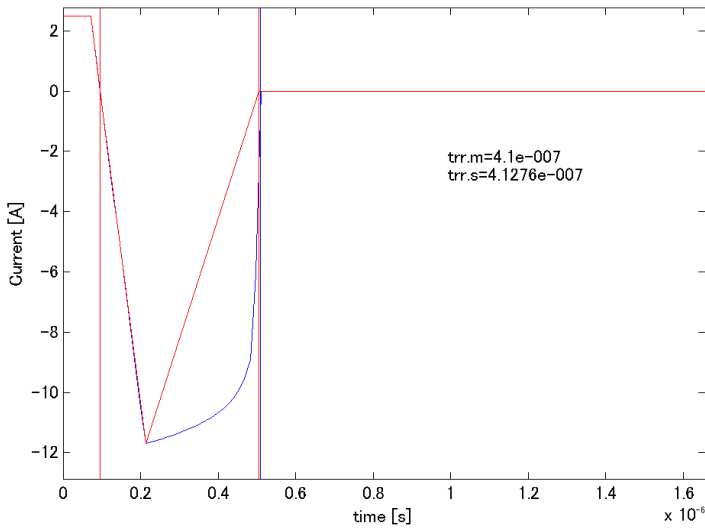
**Switching Waveform ( Blue : INPUT Red : OUTPUT**

v<sub>gg</sub> = 10V, v<sub>dd</sub> = 750V, R<sub>GG</sub> = 4.7ohm, i<sub>dd</sub> = 1.25A



**Trr Waveform ( Red : Datasheet Blue : Simulation )**

v<sub>dd</sub> = 60V, di<sub>dt</sub> = 100A/us, Temp = 25degC



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MoDeCH Inc.

Head Office

Location: Taiju-Seimei-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](mailto:model-on-support@modech.co.jp)

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