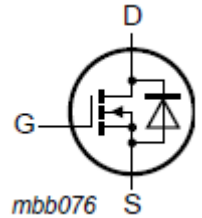
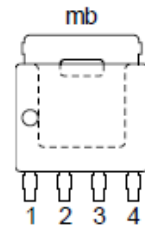


## PSpice Model NMOS Nexperia BUK9Y4R8-60E

Pin	Symbol	Description
1	S	source
2	S	source
3	S	source
4	G	gate
mb	D	mounting base; connected drain



### Model Information

<b>Model</b>	A macro model based on BSIM3 model		
<b>Call Name</b>	MDC_BUK9Y4R8-60E_PS		
<b>Pin Assign</b>	1:S 2:S 3:S 4:G mb:D		
<b>File List</b>	Model Library	MDC_BUK9Y4R8-60E_PS01.lib	
	Model Report	MDC_BUK9Y4R8-60E_PS.pdf (this file)	
<b>Verified Simulator Version</b>	PSpice version 17.2		
<b>Note</b>			

### References

The information which was used for modeling is as follow:

[Data Sheet]

● Date/Version	7 January 2016
● Product name	BUK9Y4R8-60E
● Company name	Nexperia B.V.
● Characteristics	IdVds[Vgs], Rds(on)Vgs[Temp], IdVgs[Temp], VthTemp[Id], IdVgs[Temp]2, Rds(on)Id[Vgs], NormRds(on)Temp[Id], VgsQg[Vd], CapacitanceVds[Cname], IsVsd[Temp], SwitchingRload[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	60	V
Gate-source voltage (DC)	-10	to	10	V
Temperature	-55	to	175	deg C

## MOSFET

○ : Implemented  
× : Not Implemented  
— : Not applicable

Model Functions Table

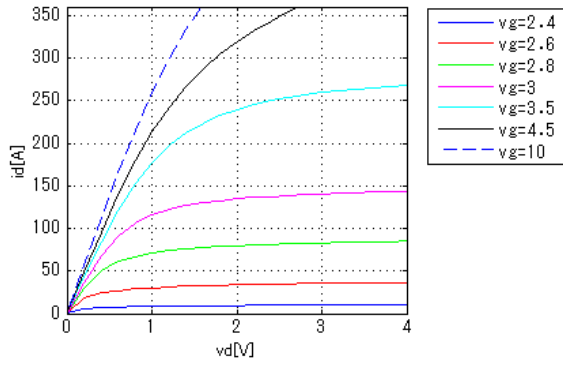
RANK=1

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

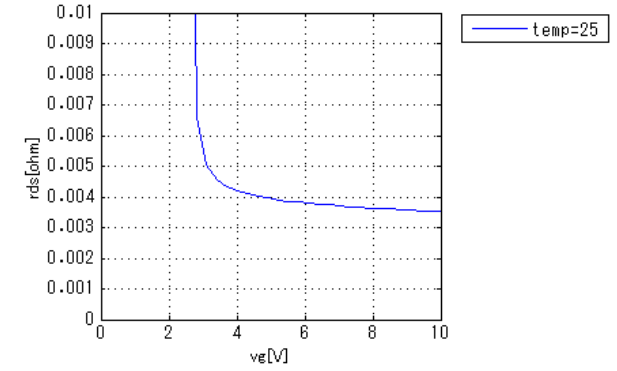
**IdVds[Vgs]**

Temp = 25degC



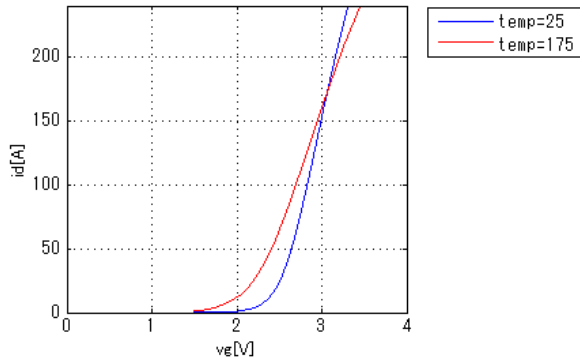
**Rds(on)Vgs[Temp]**

Id = 25A



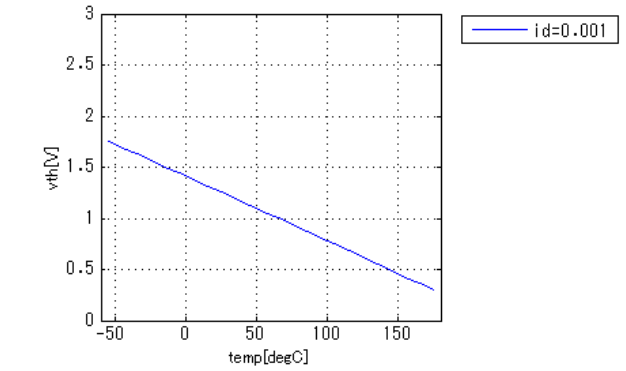
**IdVgs[Temp]**

Vds = 10V



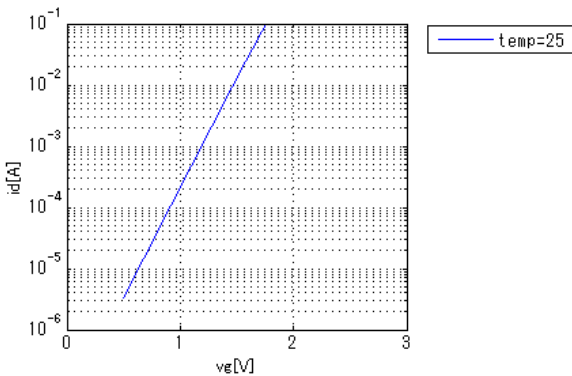
**VthTemp[Id]**

Vd = Vg



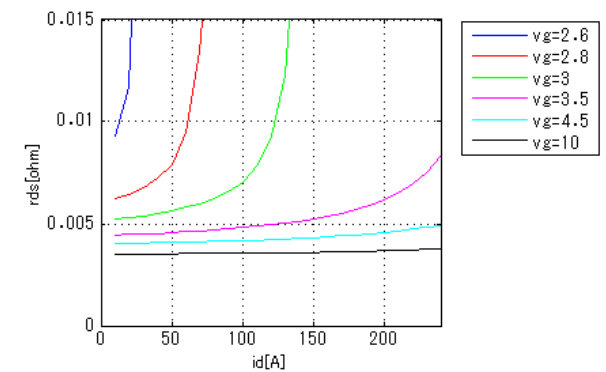
**IdVgs[Temp]2**

Vds = 5V



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

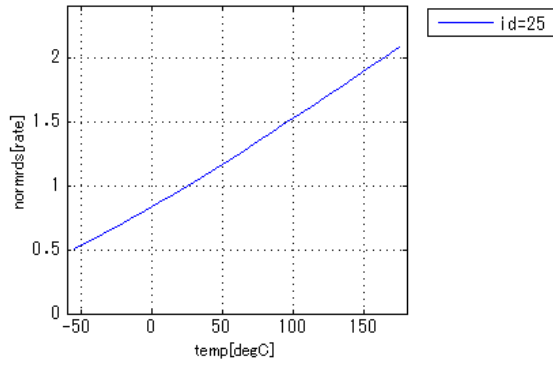
Temp = 25degC



Simulation results are following.  
 Explanatory notes — : simulated

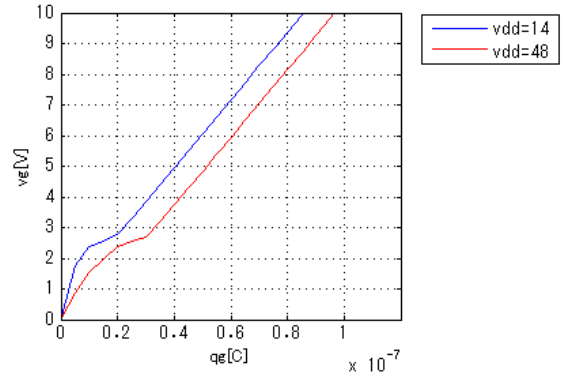
**NormRds(on)Temp[Id]**

Vgs = 0V



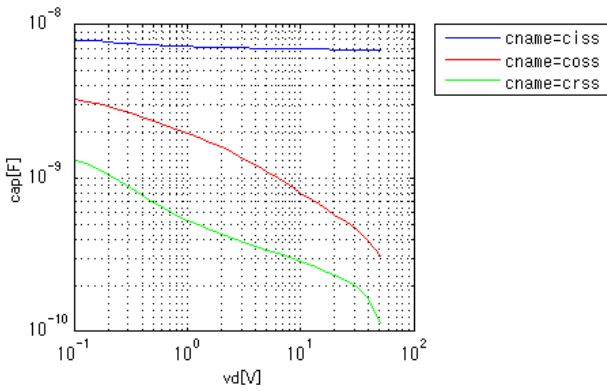
**VgsQg[Vdd]**

Id = 25A



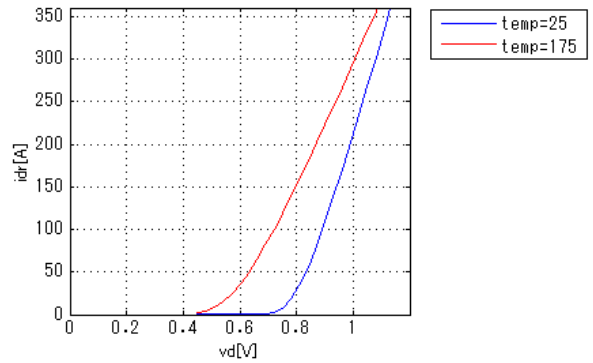
**CapacitanceVds[Cname]**

freq = 1000000Hz



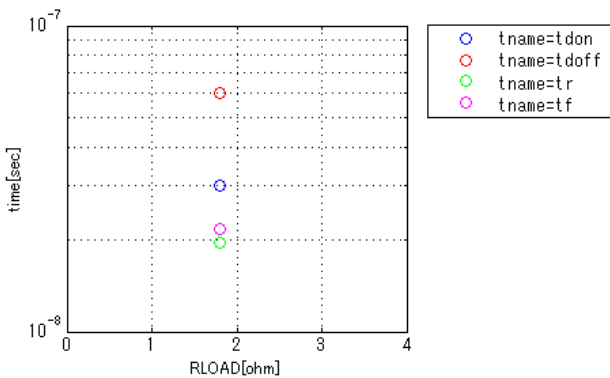
**IsVsd[Temp]**

vg = 0V



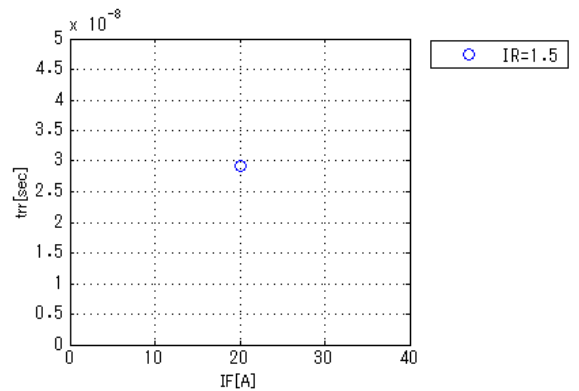
**SwitchingRload[Tname]**

vgs = 5V, vds = 45V, RGG = 5ohm



**TrrIf[Ir]**

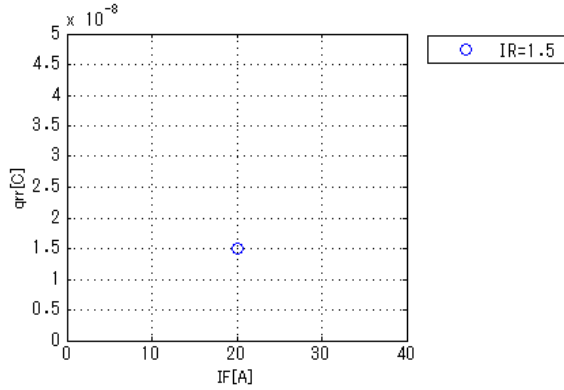
vds = 25V, didt = 100A/us, Temp = 25degC



Simulation results are following.  
 Explanatory notes — : simulated

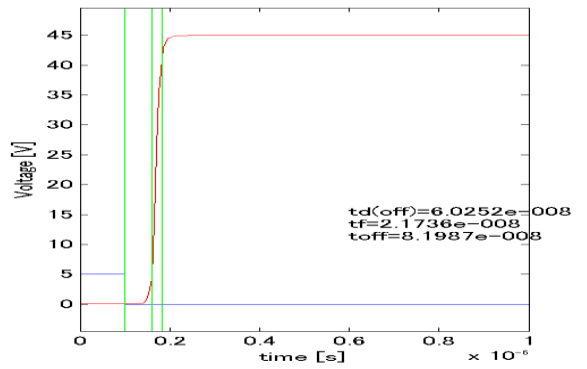
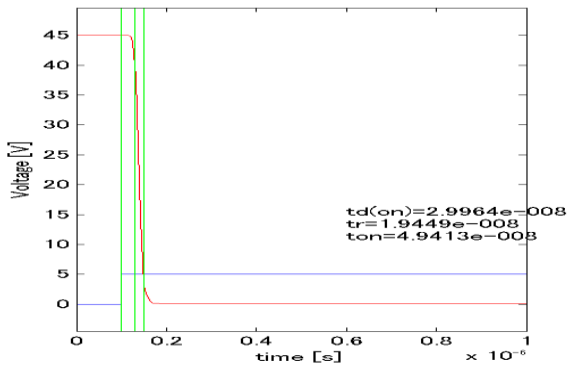
**Qrrlf[Ir]**

vdd = 25V, didt = 100A/us, Temp = 25degC



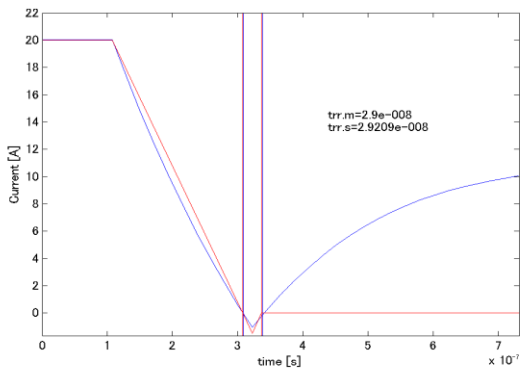
**Switching Waveform ( Blue : INPUT Red : OUTPUT )**

v<sub>gg</sub> = 5V, v<sub>dd</sub> = 45V, R<sub>GG</sub> = 5ohm, Temp = 25degC, R<sub>load</sub> = 1.8ohm



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

didt = 100A/us, v<sub>dd</sub> = 25V, if = 20A, ir = 1.5A



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MoDeCH Inc.

Head Office

Location: 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/>