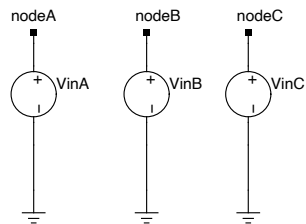


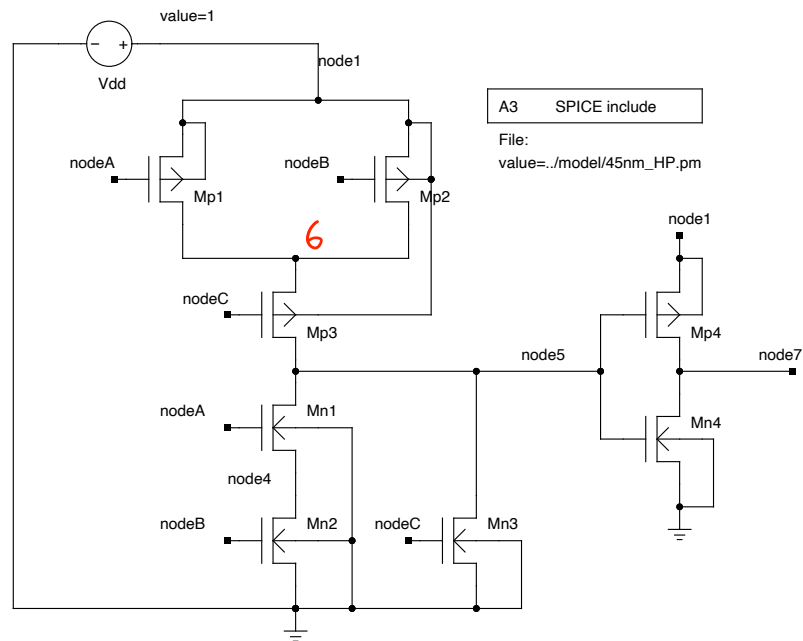
A1 SPICE directive

```
.PARAM Lmin=45n
.PARAM Wmin=45n
.PARAM Coutp=1f
```



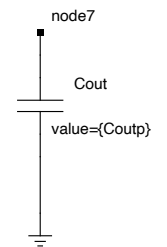
A2 SPICE directive

```
.TRAN 0.1p 3600p
.PRINT tran V(nodeA) V(nodeB) V(nodeC) V(node7)
.meas tran delay_LH trig v(nodeA) val=0.5 rise=1 targ v(node7) val=0.5 rise=1
.meas tran delay_HL trig v(nodeA) val=0.5 fall=1 targ v(node7) val=0.5 fall=1
```



A3 SPICE include

File:  
value=../model/45nm\_HP.pm



## HS65\_GH\_A012.sch

TITLE

FILE:

PAGE

OF

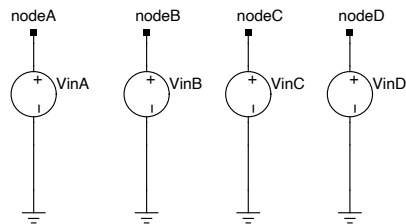
REVISION:

DRAWN BY:

Antonio Mastrandrea

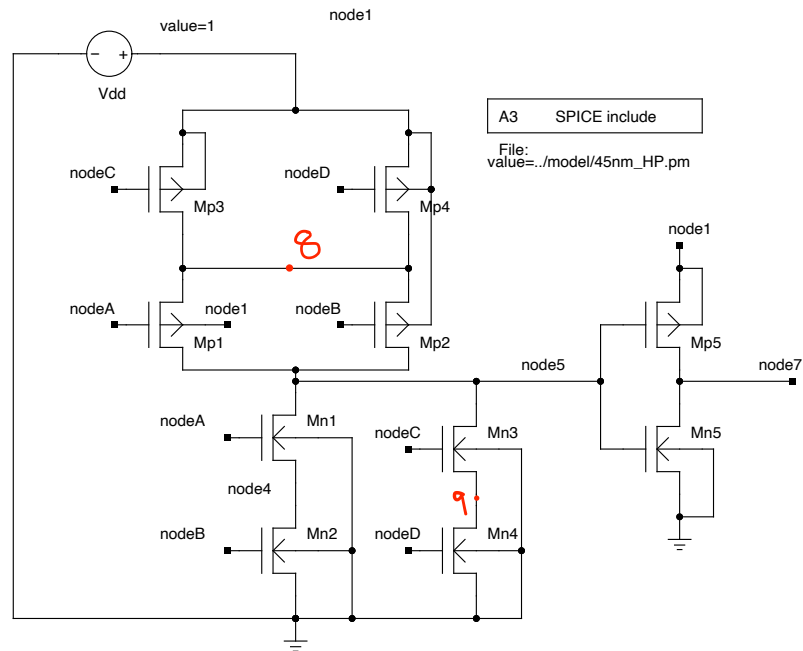
A1 SPICE directive

.PARAM Lmin=45n  
.PARAM Wmin=45n  
.PARAM Coutp=1f



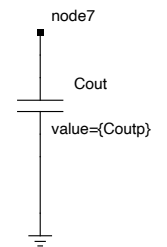
A2 SPICE directive

.TRAN 0.1p 3600p  
.PRINT tran V(nodeA) V(nodeB) V(nodeC) V(nodeD) V(node7)  
.meas tran delay\_LH trig v(nodeA) val=0.5 rise=1 targ v(node7) val=0.5 rise=1  
.meas tran delay\_HL trig v(nodeA) val=0.5 fall=1 targ v(node7) val=0.5 fall=1



A3 SPICE include

File:  
value=../model/45nm\_HP.pm



HS65\_GH\_A022.sch

TITLE

FILE:

PAGE

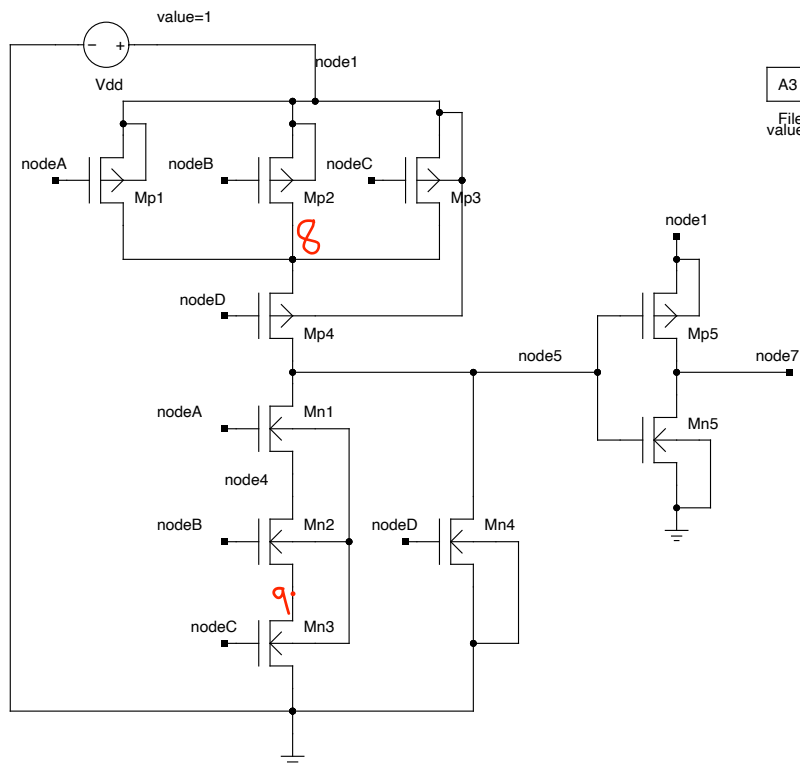
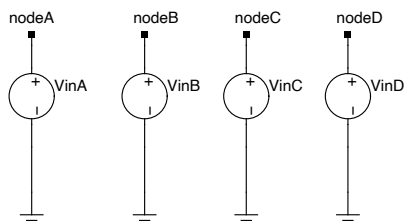
OF

REVISION:

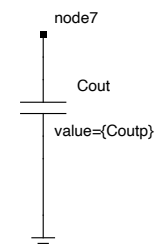
DRAWN BY:

Antonio Mastrandrea

A1 SPICE directive  
 .PARAM Lmin=45n  
 .PARAM Wmin=45n  
 .PARAM Coutp=1f



A3 SPICE include  
 File:  
 value=../model/45nm\_HP.pm



A2 SPICE directive

.TRAN 0.1p 3600p  
 .PRINT tran V(nodeA) V(nodeB) V(nodeC) V(nodeD) V(node7)  
 .meas tran delay\_LH trig v(nodeA) val=0.5 rise=1 targ v(node7) val=0.5 rise=1  
 .meas tran delay\_HL trig v(nodeA) val=0.5 fall=1 targ v(node7) val=0.5 fall=1

HS65\_GH\_A031.sch

TITLE

FILE:

PAGE

OF

REVISION:

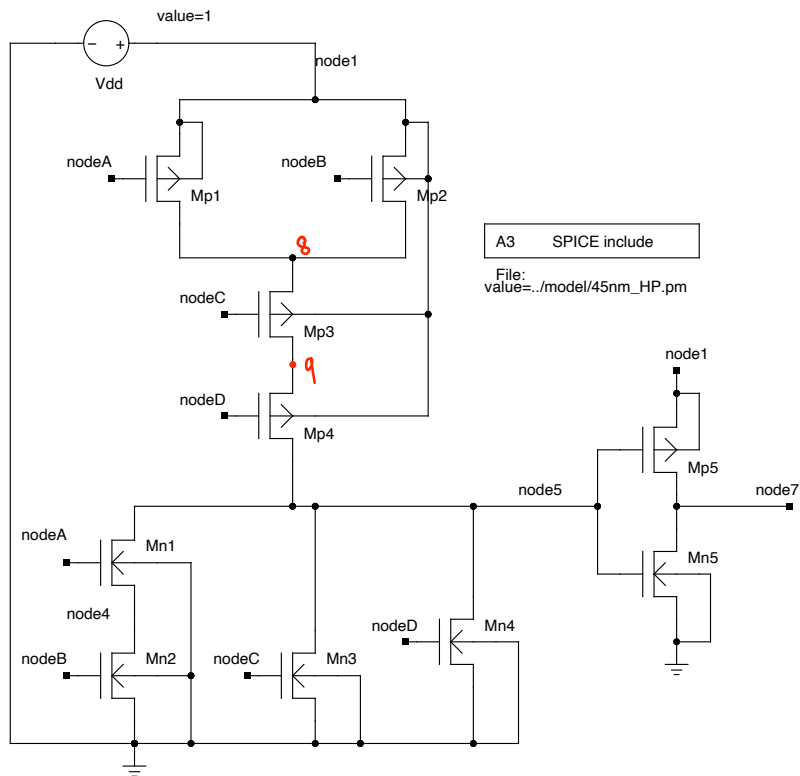
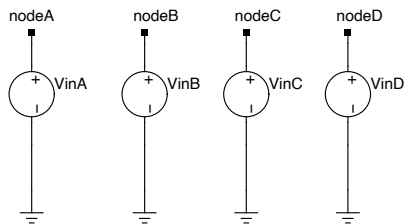
DRAWN BY:

Antonio Mastrandrea

A1 SPICE directive  
PARAM Lmin=45n

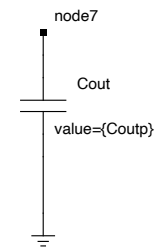
.PARAM Wmin=45n

.PARAM Coutp=1f



A3 SPICE include

File:  
value=../model/45nm\_HP.pm



A2 SPICE directive

.TRAN 0.1p 3600p

.PRINT tran V(nodeA) V(nodeB) V(nodeC) V(nodeD) V(node7)

.meas tran delay\_LH trig v(nodeA) val=0.5 rise=1 targ v(node7) val=0.5 rise=1

.meas tran delay\_HL trig v(nodeA) val=0.5 fall=1 targ v(node7) val=0.5 fall=1

HS65\_GH\_A0112.sch

TITLE

FILE:

PAGE

OF

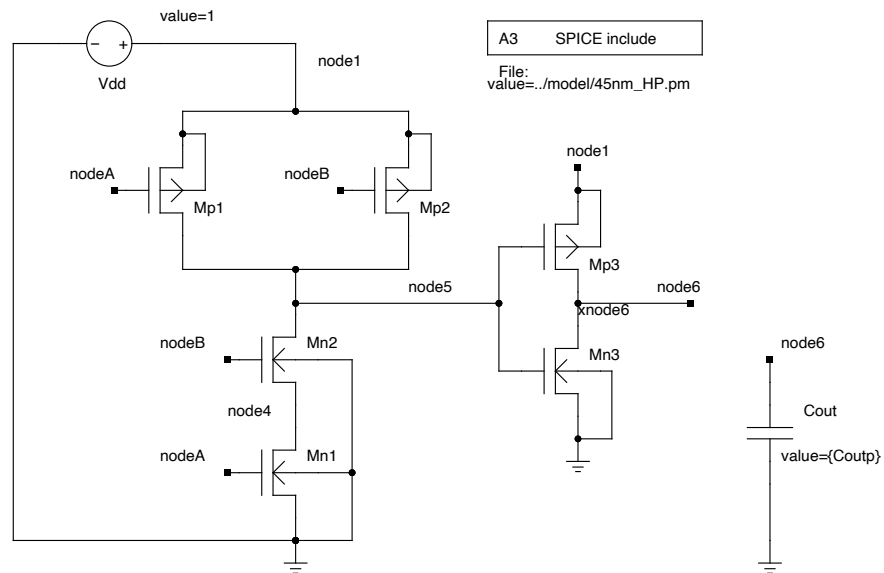
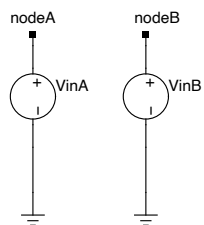
REVISION:

DRAWN BY:

Antonio Mastrandrea

A1 SPICE directive  
PARAM Lmin=45n

.PARAM Wmin=45n  
.PARAM Coutp=1f



A2 SPICE directive

.TRAN 0.1p 3600p  
.PRINT tran V(nodeA) V(nodeB) V(node6)  
.meas tran delay\_LH trig v(nodeB) val=0.5 rise=1 targ v(node6) val=0.5 rise=1  
.meas tran delay\_HL trig v(nodeB) val=0.5 fall=1 targ v(node6) val=0.5 fall=1

HS65\_GH\_AND2.sch

TITLE

FILE:

PAGE

OF

REVISION:

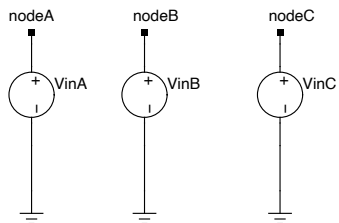
DRAWN BY:

Antonio Mastrandrea

A1 SPICE directive  
PARAM Cmin=45n

.PARAM Wmin=45n

.PARAM Coutp=1f



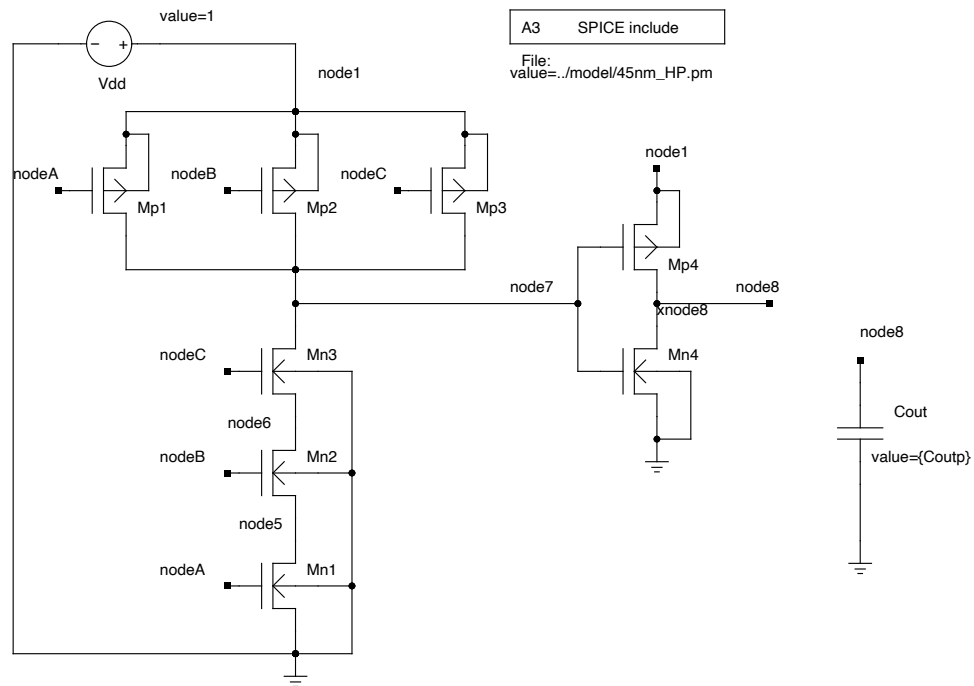
A2 SPICE directive

.TRAN 0.1p 3600p

.PRINT tran V(nodeA) V(nodeB) V(nodeC) V(node8)

.meas tran delay\_LH trig v(nodeA) val=0.5 rise=1 targ v(node8) val=0.5 rise=1

.meas tran delay\_HL trig v(nodeA) val=0.5 fall=1 targ v(node8) val=0.5 fall=1



HS65\_GH\_AND3.sch

TITLE

FILE:

PAGE

OF

REVISION:

DRAWN BY:

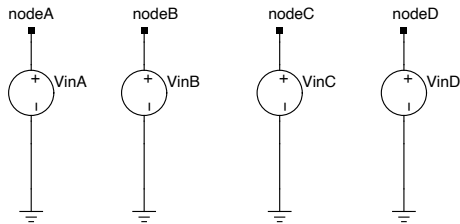
Antonio Mastrandrea

A1 SPICE directive

.PARAM Lmin=45n

.PARAM Wmin=45n

.PARAM Coutp=1f



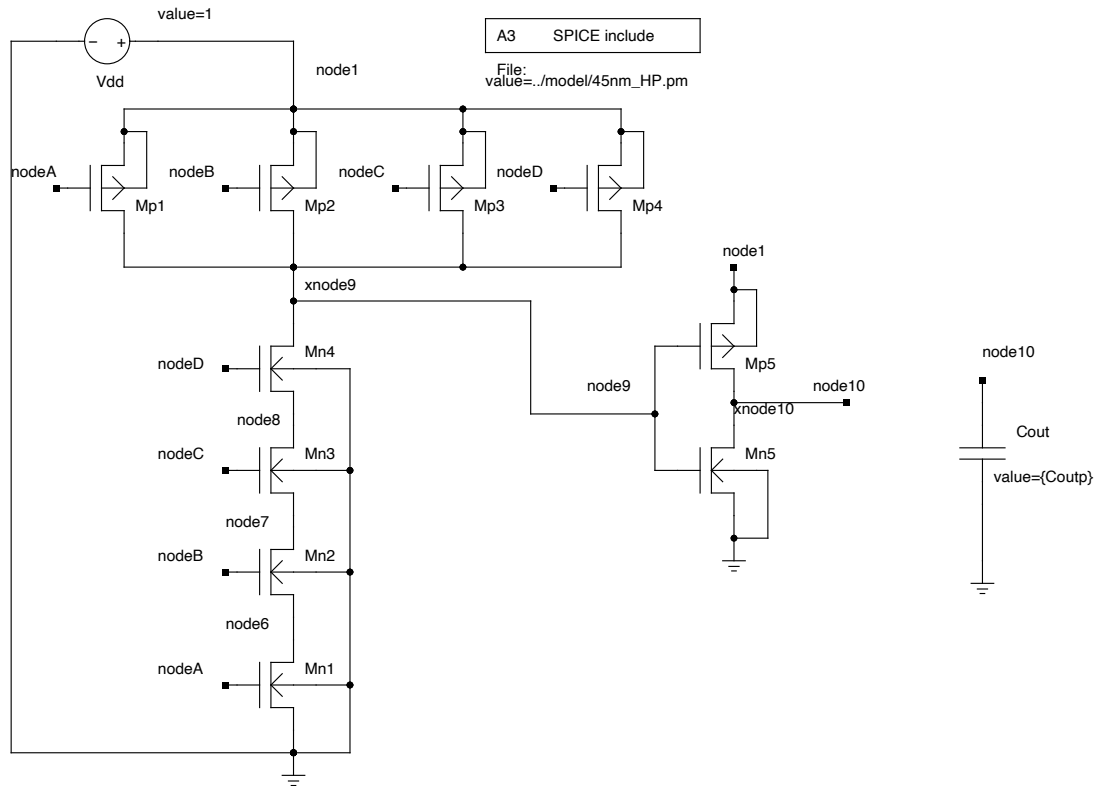
A2 SPICE directive

.TRAN 0.1p 3600p

.PRINT tran V(nodeA) V(nodeB) V(nodeC) V(nodeD) V(node10)

.meas tran delay\_LH trig v(nodeA) val=0.5 rise=1 targ v(node10) val=0.5 rise=1

.meas tran delay\_HL trig v(nodeA) val=0.5 fall=1 targ v(node10) val=0.5 fall=1



## HS65\_GH\_AND4.sch

TITLE

FILE:

PAGE

OF

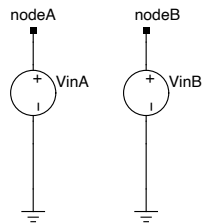
REVISION:

DRAWN BY:

Antonio Mastrandrea

# A1 SPICE directive

```
.PARAM Lmin=45n
.PARAM Wmin=45n
.PARAM Coutp=1f
```

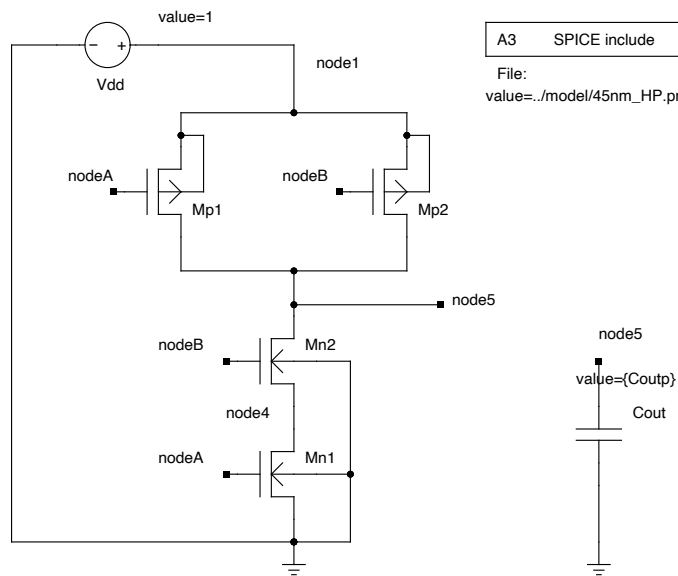


# A2 SPICE directive

```
.TRAN 0.1p 3600p
.PRINT tran V(nodeA) V(nodeB) V(node5)
.meas tran delay_LH trig v(nodeA) val=0.5 fall=1 targ v(node5) val=0.5 rise=1
.meas tran delay_HL trig v(nodeA) val=0.5 rise=1 targ v(node5) val=0.5 fall=1
```

# A3 SPICE include

```
File:
value=../model/45nm_HP.pm
```



## HS65\_GH\_NAND2.sch

TITLE

FILE:

PAGE

OF

REVISION:

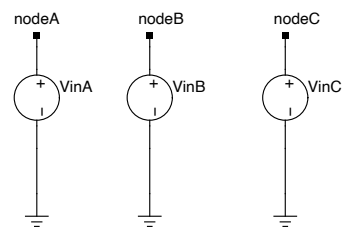
DRAWN BY:

Antonio Mastrandrea



# A1 SPICE directive

```
.PARAM Lmin=45n
.PARAM Wmin=45n
.PARAM Coutp=1f
```

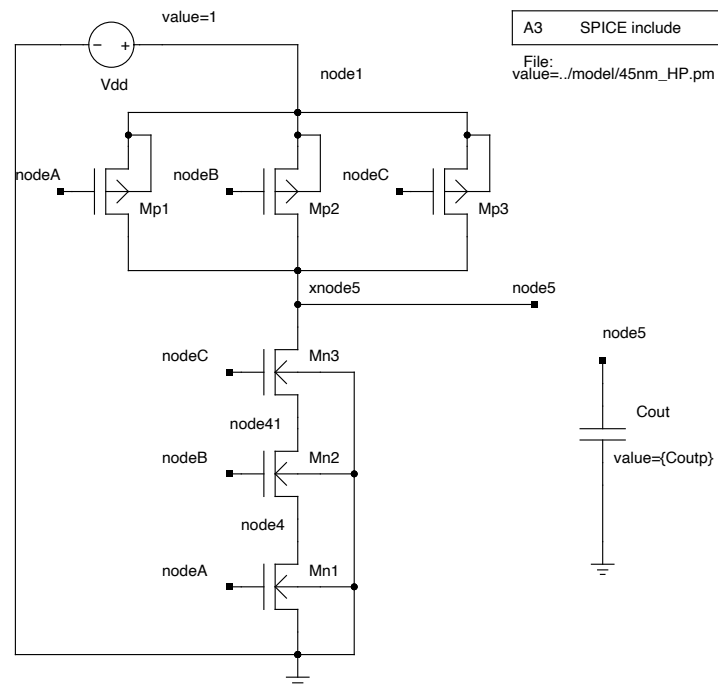


# A2 SPICE directive

```
.TRAN 0.1p 3600p
.PRINT tran V(nodeA) V(nodeB) V(nodeC) V(node5)
.meas tran delay_LH trig v(nodeA) val=0.5 fall=1 targ v(node5) val=0.5 rise=1
.meas tran delay_HL trig v(nodeA) val=0.5 rise=1 targ v(node5) val=0.5 fall=1
```

# A3 SPICE include

File:  
value=../model/45nm\_HP.pm



# HS65\_GH\_NAND3.sch

TITLE

FILE:

PAGE

OF

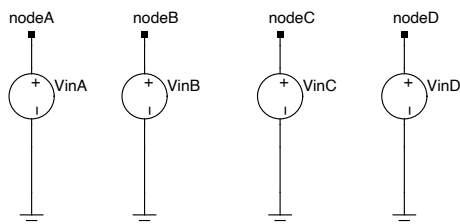
REVISION:

DRAWN BY:

Antonio Mastrandrea

# A1 SPICE directive

```
.PARAM Lmin=45n
.PARAM Wmin=45n
.PARAM Coutp=1f
```

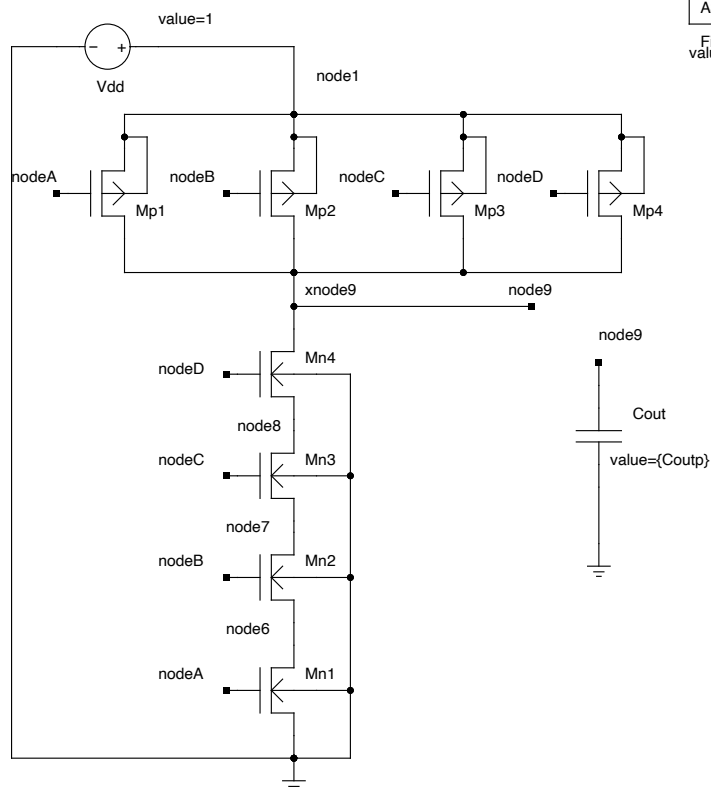


# A2 SPICE directive

```
.TRAN 0.1p 3600p
.PRINT tran V(nodeA) V(nodeB) V(nodeC) V(nodeD) V(node9)
.meas tran delay_LH trig v(nodeA) val=0.5 fall=1 targ v(node9) val=0.5 rise=1
.meas tran delay_HL trig v(nodeA) val=0.5 rise=1 targ v(node9) val=0.5 fall=1
```

# A3 SPICE include

File:  
value=../model/45nm\_HP.pm



## HS65\_GH\_NAND4.sch

TITLE

FILE:

PAGE

OF

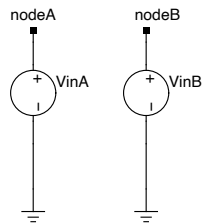
REVISION:

DRAWN BY:

Antonio Mastrandrea

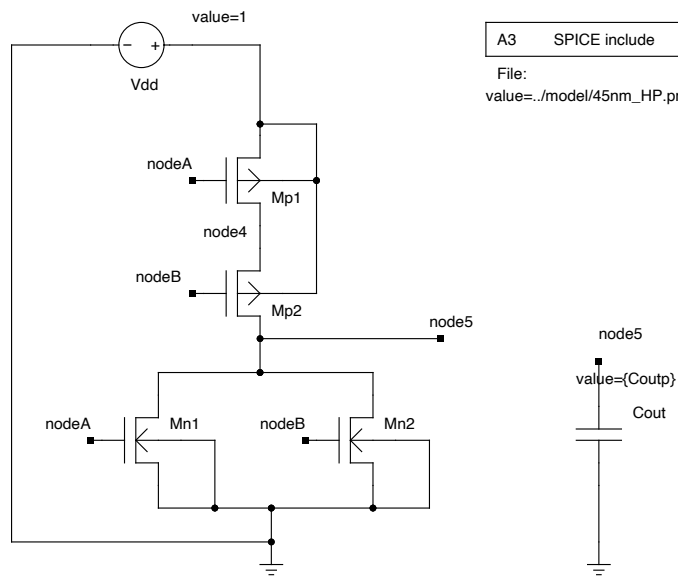
# A1 SPICE directive

```
.PARAM Lmin=45n
.PARAM Wmin=45n
.PARAM Coutp=1f
```



# A3 SPICE include

File:  
value=../model/45nm\_HP.pm



# A2 SPICE directive

```
.TRAN 0.1p 3600p
.PRINT tran V(nodeA) V(nodeB) V(node5)
.meas tran delay_LH trig v(nodeA) val=0.5 fall=1 targ v(node5) val=0.5 rise=1
.meas tran delay_HL trig v(nodeA) val=0.5 rise=1 targ v(node5) val=0.5 fall=1
```

## HS65\_GH\_NOR2.sch

TITLE

FILE:

PAGE

OF

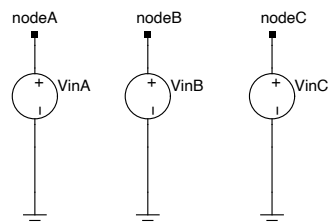
REVISION:

DRAWN BY:

Antonio Mastrandrea

# A1 SPICE directive

```
.PARAM Lmin=45n
.PARAM Wmin=45n
.PARAM Coutp=1f
```

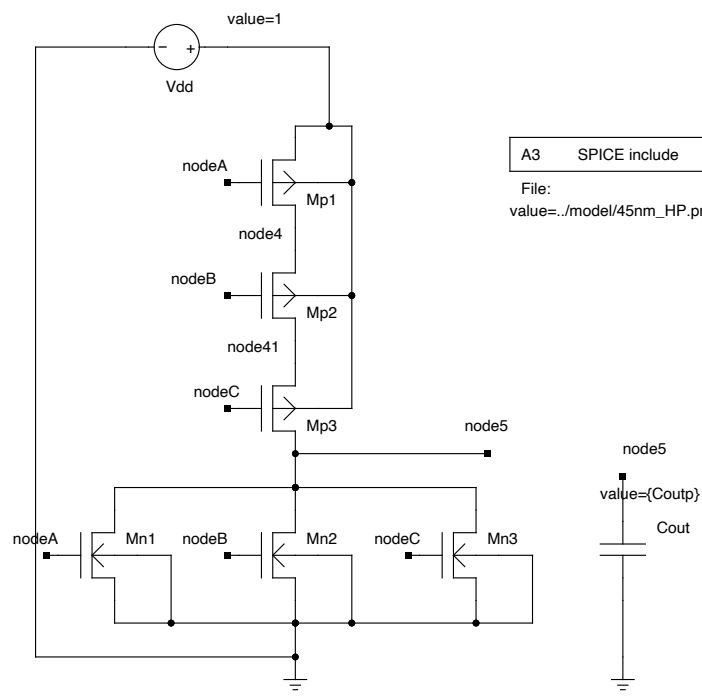


# A2 SPICE directive

```
.TRAN 0.1p 3600p
.PRINT tran V(nodeA) V(nodeB) V(nodeC) V(node5)
.meas tran delay_LH trig v(nodeA) val=0.5 fall=1 targ v(node5) val=0.5 rise=1
.meas tran delay_HL trig v(nodeA) val=0.5 rise=1 targ v(node5) val=0.5 fall=1
```

# A3 SPICE include

File:  
value=../model/45nm\_HP.pm



## HS65\_GH\_NOR3.sch

TITLE

FILE:

PAGE

OF

REVISION:

DRAWN BY:

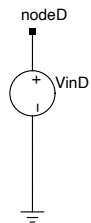
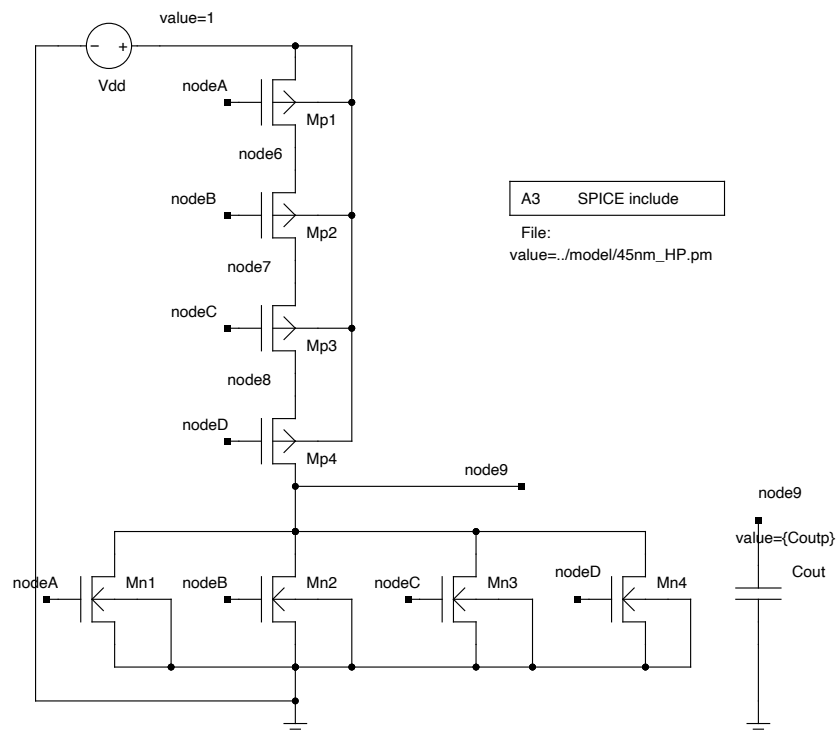
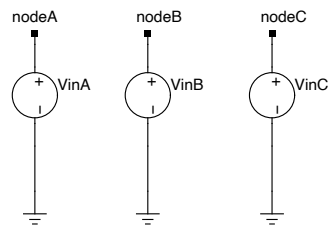
Antonio Mastrandrea

# A1 SPICE directive

```
.PARAM Lmin=45n
.PARAM Wmin=45n
.PARAM Coutp=1f
```

# A3 SPICE include

```
File:
value=../model/45nm_HP.pm
```



# A2 SPICE directive

```
.TRAN 0.1p 3600p
.PRINT tran V(nodeA) V(nodeB) V(nodeC) V(nodeD) V(node9)
.meas tran delay_LH trig v(nodeA) val=0.5 fall=1 targ v(node9) val=0.5 rise=1
.meas tran delay_HL trig v(nodeA) val=0.5 rise=1 targ v(node9) val=0.5 fall=1
```

## HS65\_GH\_NOR4.sch

TITLE

FILE:

PAGE

OF

REVISION:

DRAWN BY:

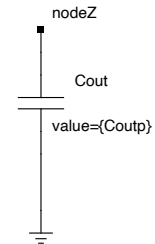
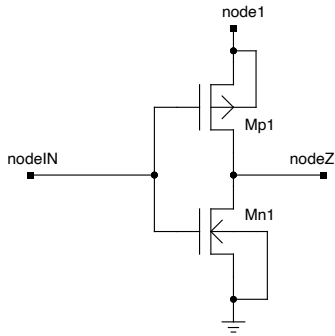
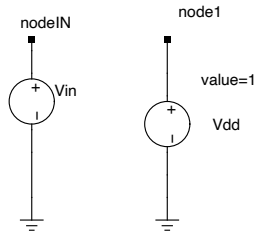
Antonio Mastrandrea

A1 SPICE directive

.PARAM Lmin=45n  
.PARAM Wmin=45n  
.PARAM Coutp=1f

A3 SPICE include

File:  
value=../model/45nm\_HP.pm



A2 SPICE directive

.TRAN 0.1p 1800p  
.PRINT tran V(nodeIN) V(nodeZ)  
.meas tran delay\_LH trig v(nodeIN) val=0.5 fall=1 targ v(nodeZ) val=0.5 rise=1  
.meas tran delay\_HL trig v(nodeIN) val=0.5 rise=1 targ v(nodeZ) val=0.5 fall=1

# HS65\_GH\_NOT.sch

TITLE

FILE:

PAGE

OF

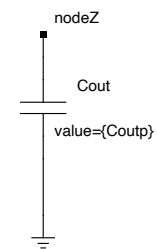
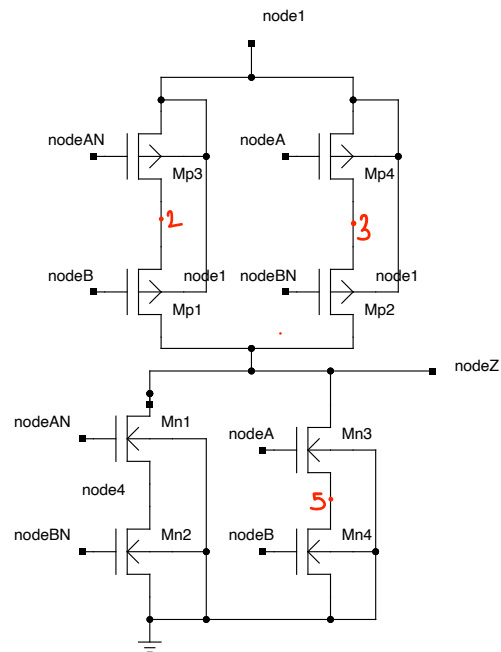
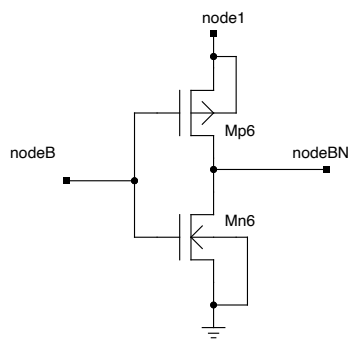
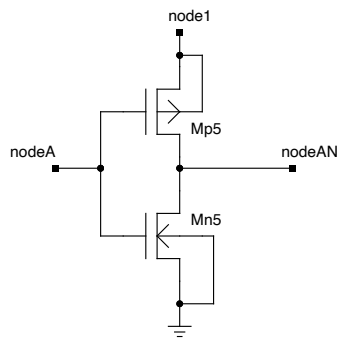
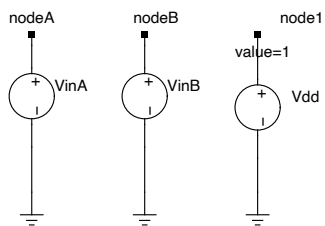
REVISION:

DRAWN BY:

Antonio Mastrandrea

A3 SPICE include  
File:  
value=../model/45nm\_HP.pm

A1 SPICE directive  
PARAM Lmin=45n  
.PARAM Wmin=45n  
.PARAM Coutp=1f



A2 SPICE directive

.TRAN 0.1p 3600p  
.PRINT tran V(nodeA) V(nodeB) V(nodeZ)  
.meas tran delay\_LH trig v(nodeA) val=0.5 fall=1 targ v(nodeZ) val=0.5 rise=1  
.meas tran delay\_HL trig v(nodeA) val=0.5 rise=1 targ v(nodeZ) val=0.5 fall=1

## HS65\_GH\_XOR2.sch

TITLE

FILE:

PAGE

OF

REVISION:

DRAWN BY:

Antonio Mastrandrea