PSpice Model
Operational Amplifier
STMicroelectronics
MDC_LM2904YST_PS

Model Information

Model	A macro model
Call Name	MDC_LM2904YST_PS
Pin Assign	1:Out1 2:In1- 3:In1+ 4:Vcc- 5:In2+ 6:In2- 7:Out2 8:Vcc+
File List	Model Library MDC_LM2904YST_PS.lib
	Model Report MDC_LM2904YST_PS.pdf(this file)

Verified Simulator Version   PSpice V17.2

Note

References
The information which was used for modeling is as follow:

[Data Sheet]
- Date/Version   DS0508 - Rev 19 - April 2021
- Product name   LM2904YST
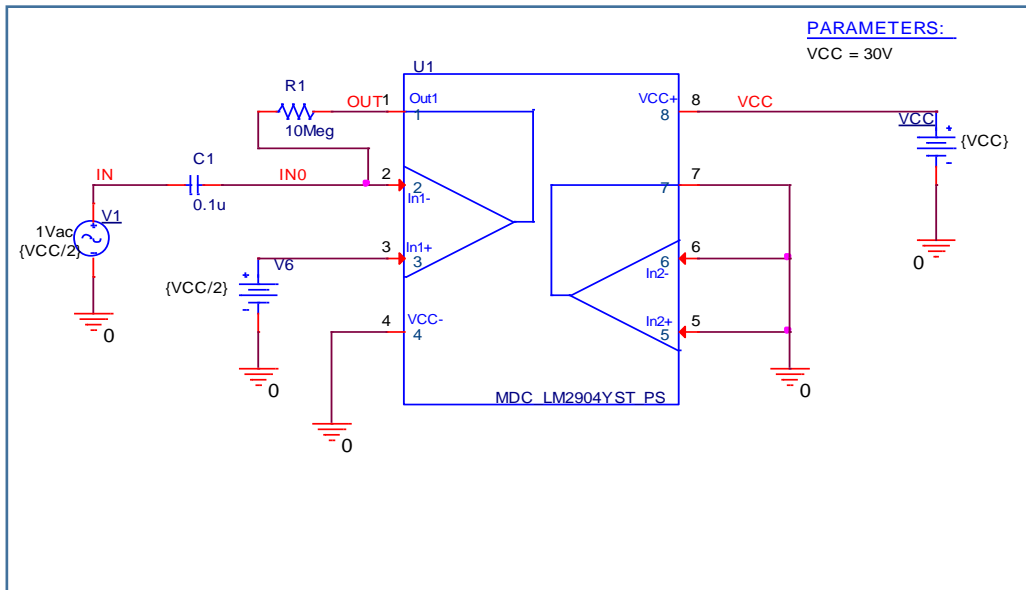- Company name   STMicroelectronics

[Characteristics listed]
- Characteristics

    Gain-frequency
    Slew rate
    Voltage output swing
    Input offset voltage
    Input offset current
    Supply current
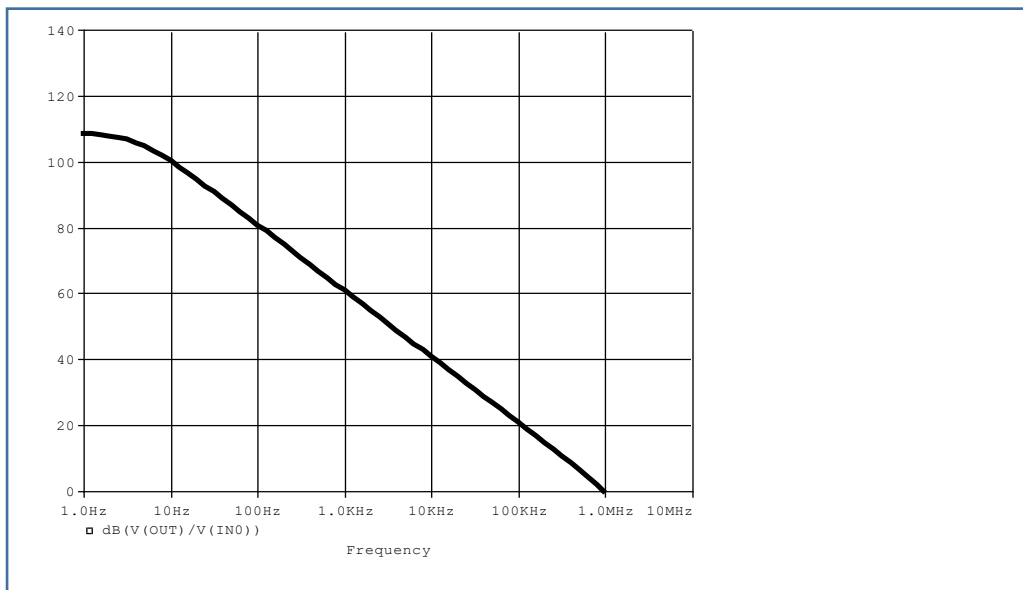   Voltage follower small signal response

Simulation Condition

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

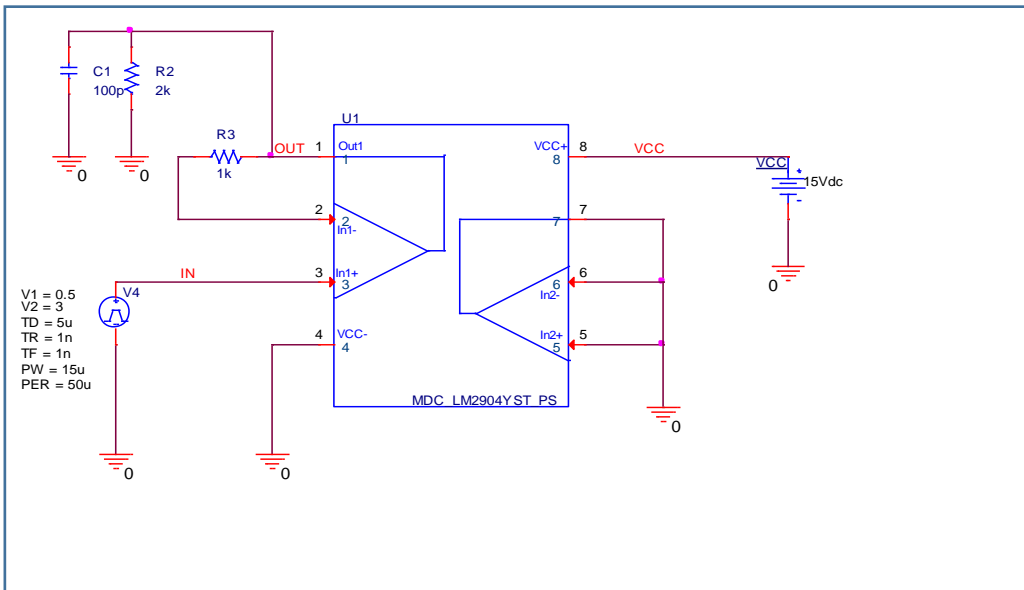| Item	Condition	Unit
Temperature	25	deg C

Gain Frequency

TestBench

Simulation results are following.
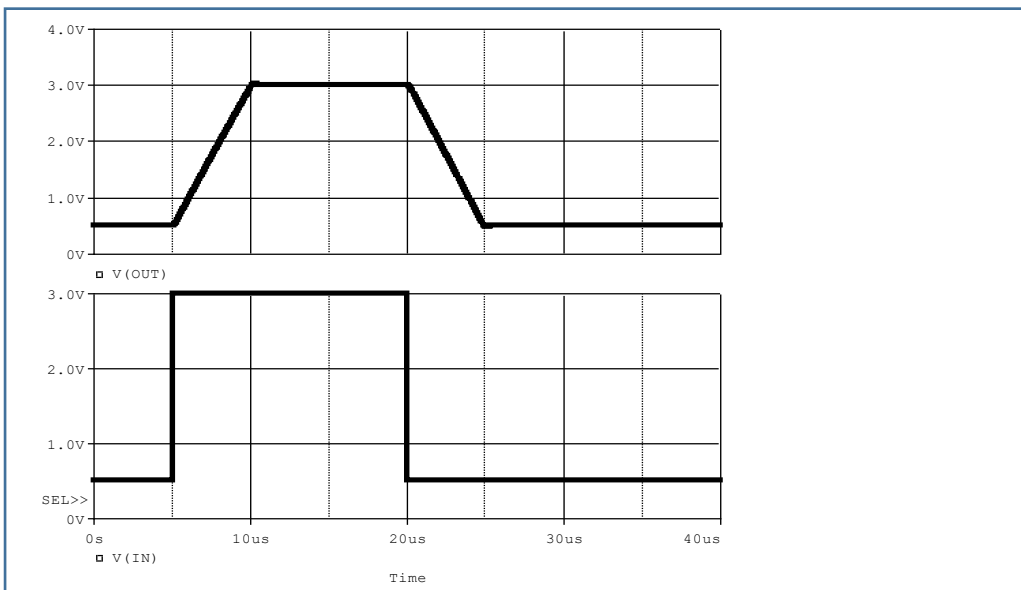Explanatory notes — : simulated
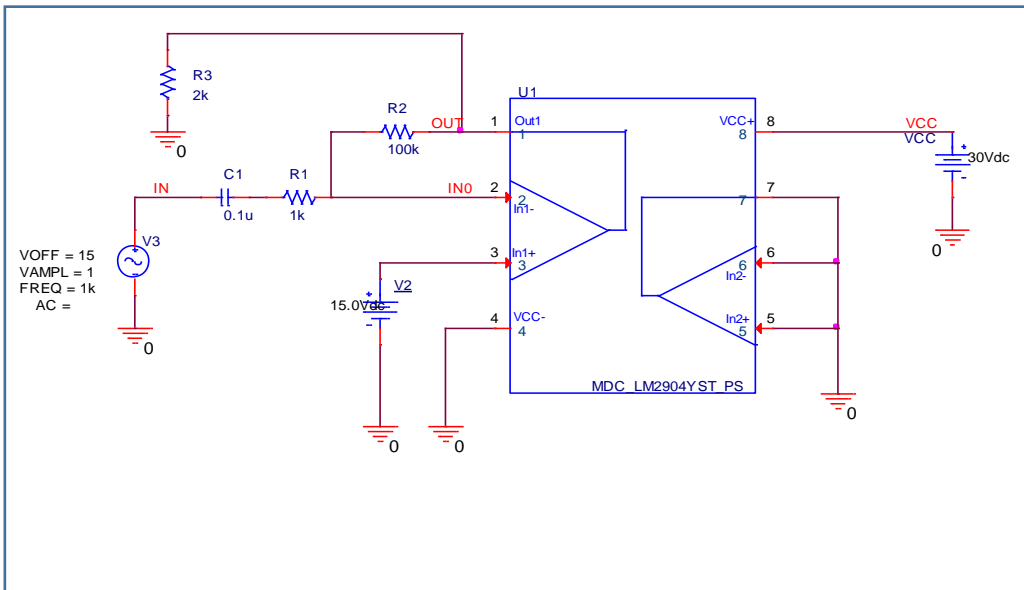
Slew rate

TestBench

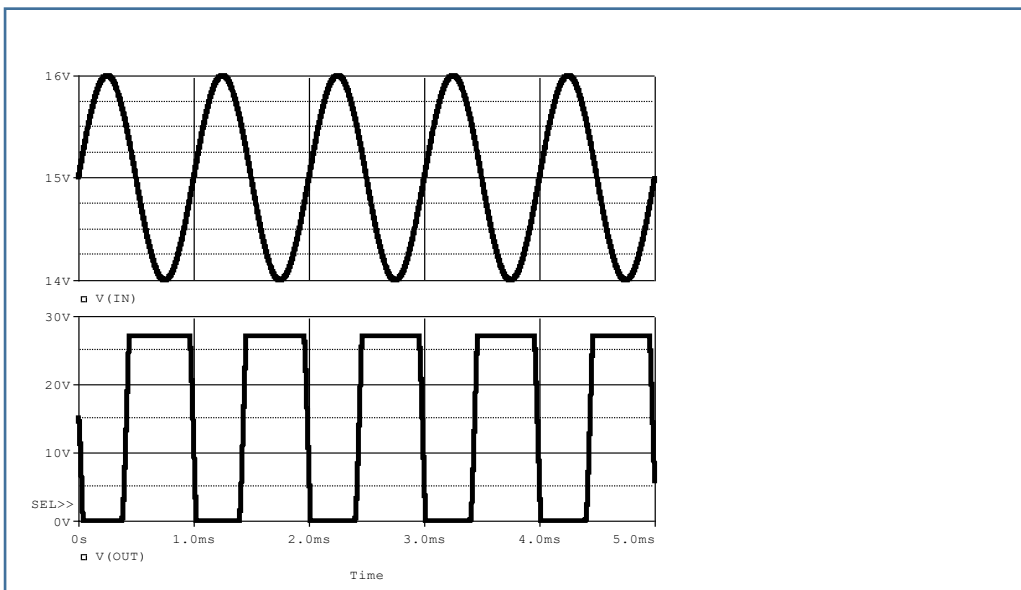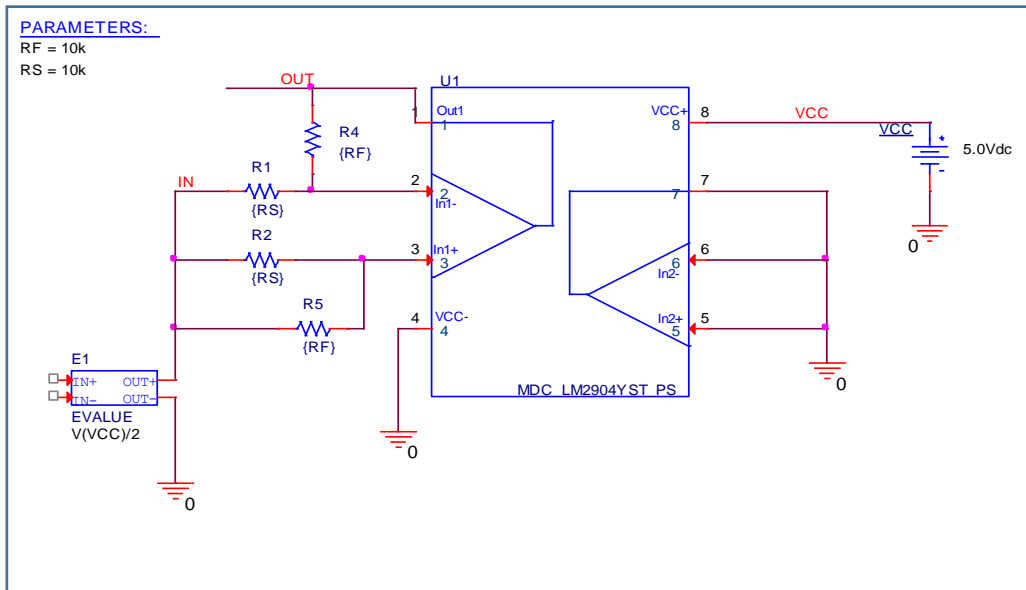Simulation results are following.
Explanatory notes   — : simulated

Voltage output swing

TestBench

Simulation results are following.
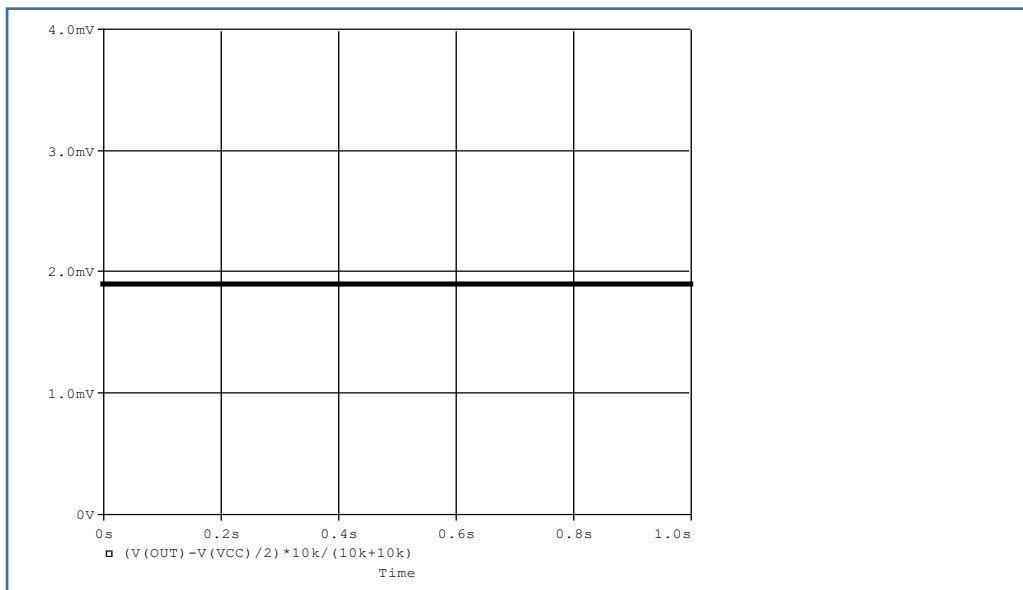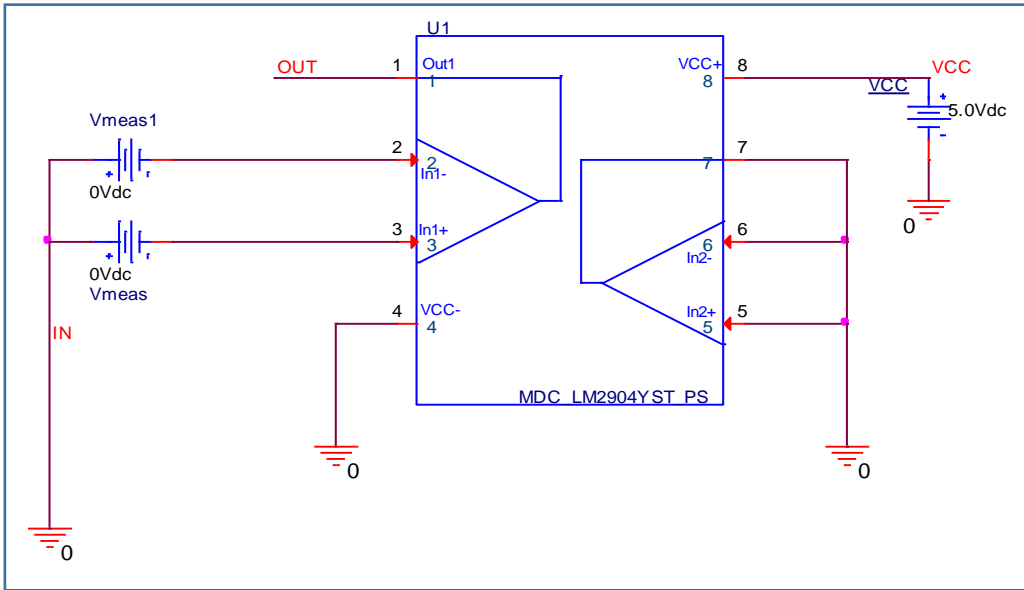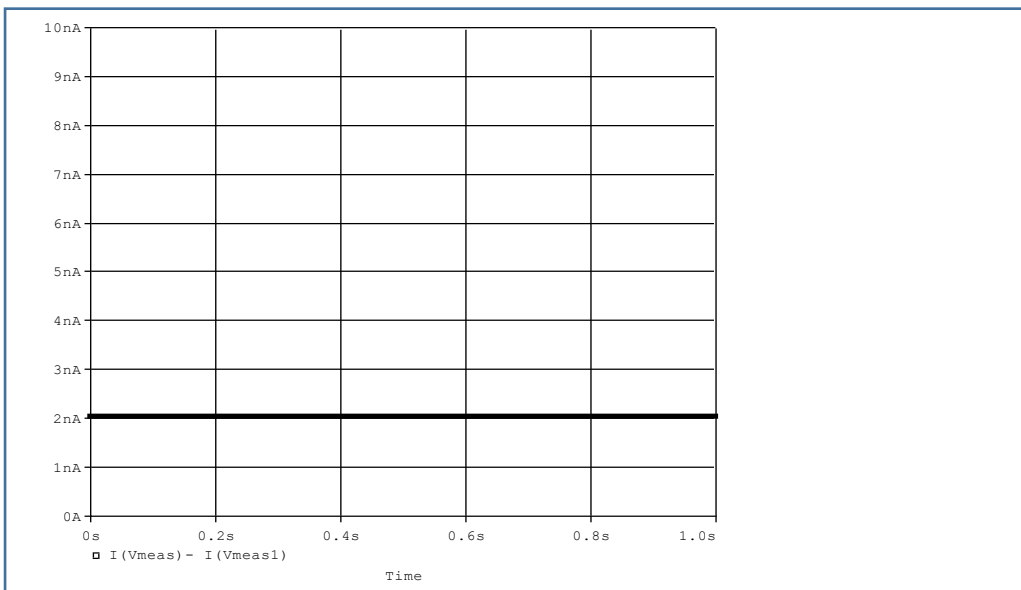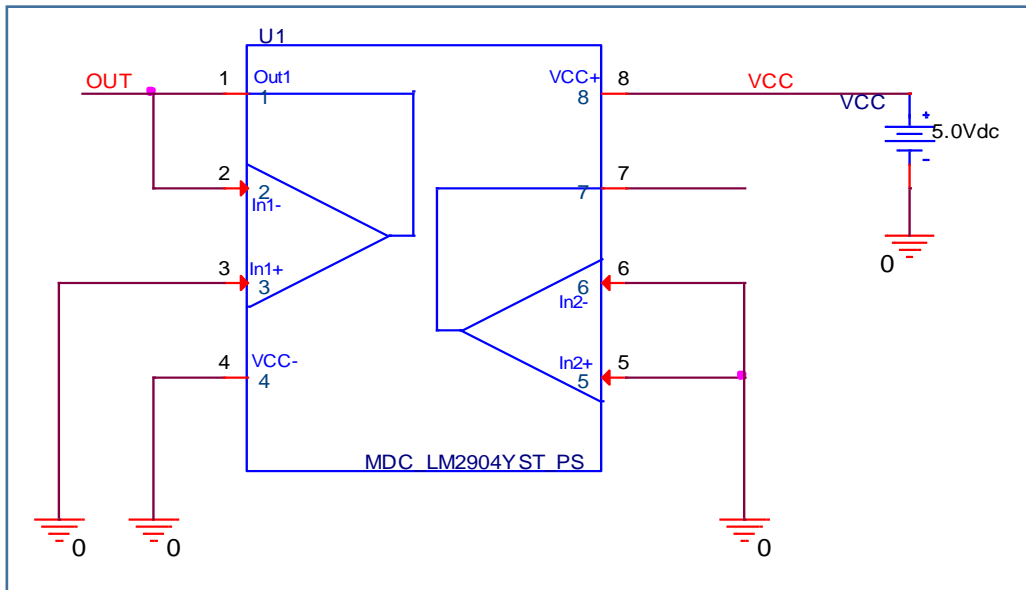Explanatory notes — : simulated

4

5

Input offset voltage

TestBench

PARAMETERS:
RF = 10k
RS = 10k

OUT

U1

Out1
1

VCC+
8   8   VCC

VCC
5.0Vdc

R4
{RF}

0

IN   R1
{RS}

2   2
In1-

7   7

R2
{RS}

3   3
In1+

6   6
In2-

R5
{RF}

4   VCC-
4

In2+
5   5

0

MDC_LM2904YST_PS

E1
IN+   OUT+
IN-   OUT-
EVALUE
V(VCC)/2

0

0

Simulation results are following.
Explanatory notes   — : simulated

```
4.0mV

3.0mV

2.0mV

1.0mV

0V
    0s         0.2s        0.4s        0.6s        0.8s        1.0s
     □ (V(OUT)-V(VCC)/2)*10k/(10k+10k)
                              Time
```

Input offset current

TestBench
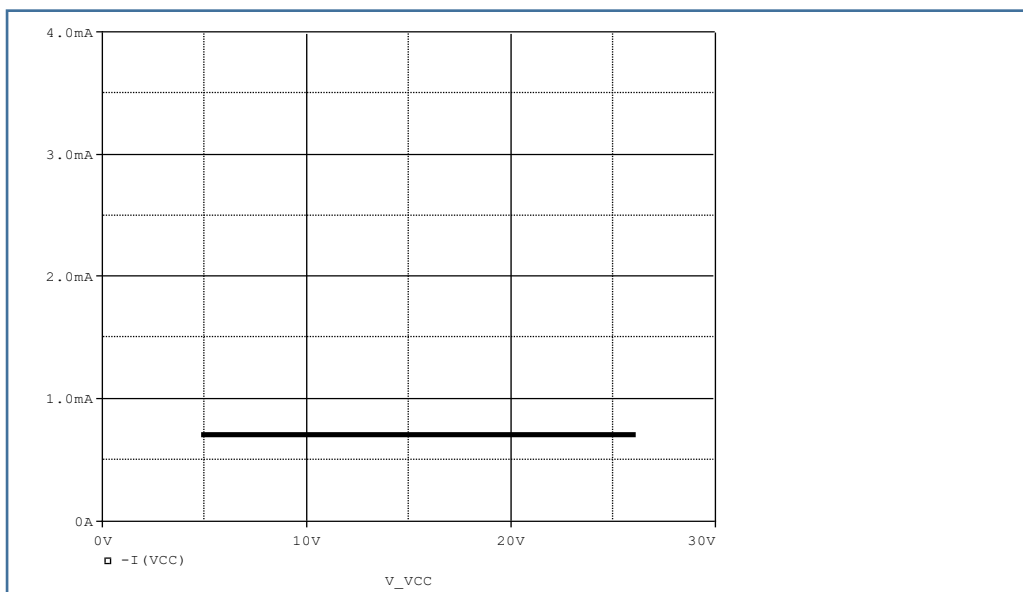

Simulation results are following.
Explanatory notes — : simulated

Supply current

TestBench

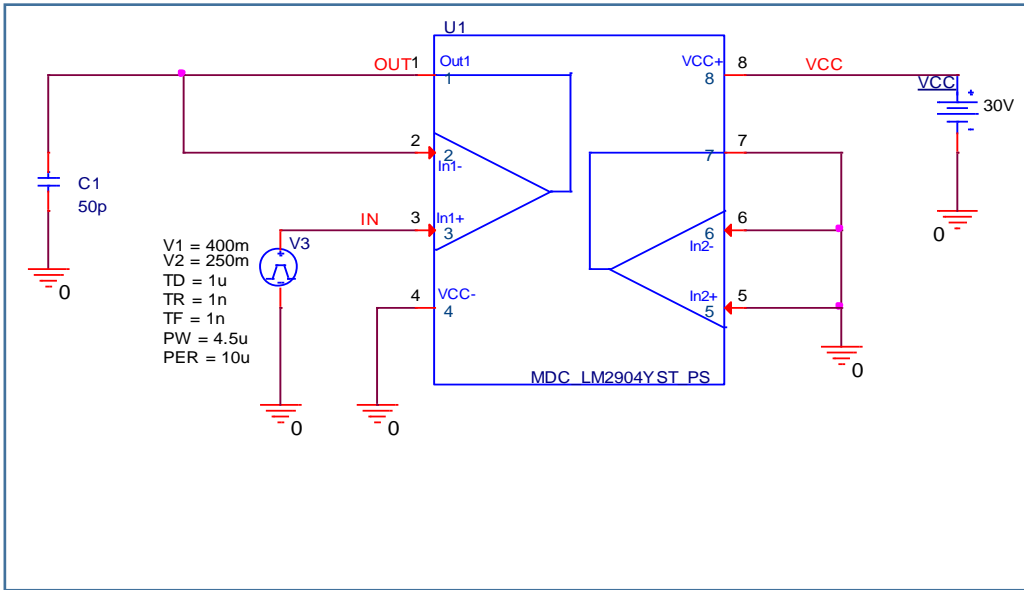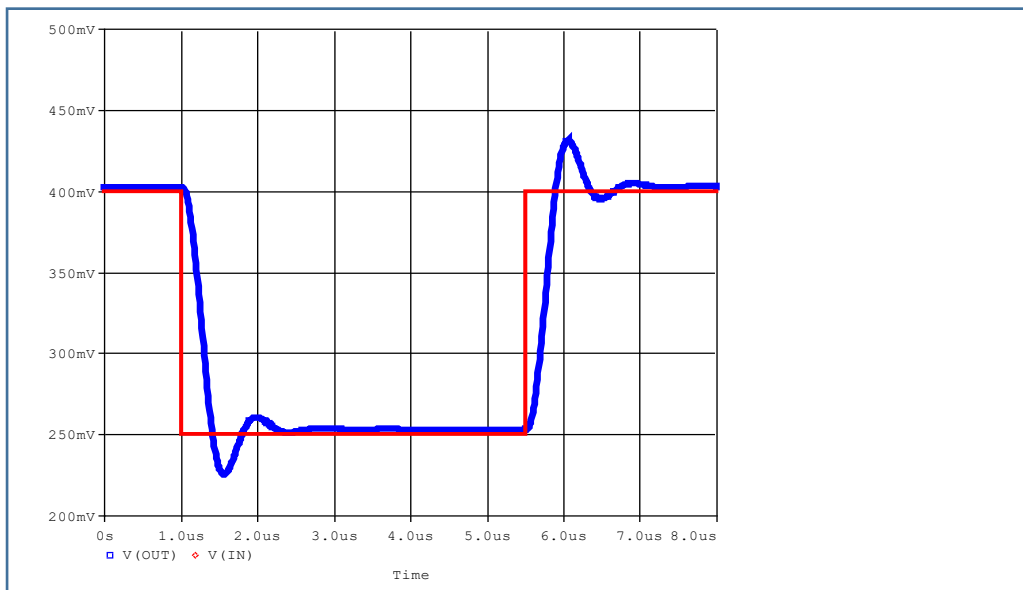Simulation results are following.
Explanatory notes — : simulated

Voltage follower small signal response

TestBench

U1

OUT1 Out1
1

VCC+ 8 VCC
8

VCC
+ 30V
−

2
In1-

C1
50p

0

V1 = 400m
V2 = 250m
TD = 1u
TR = 1n
TF = 1n
PW = 4.5u
PER = 10u

V3

IN 3 In1+
3

7 7

6 6
In2-

0

4 VCC-
4

In2+ 5
5

0

MDC_LM2904YST_PS

0   0

Simulation results are following.
Explanatory notes   — : simulated

500mV

450mV

400mV

350mV

300mV

250mV

200mV
0s   1.0us   2.0us   3.0us   4.0us   5.0us   6.0us   7.0us 8.0us
□ V(OUT) ◇ V(IN)
Time

DISCLAIMER

MoDeCH

Modeling Design Technology

Jun 29,2021
Rev 1.0