# Pspice Model
# LDO Regulators with Watch Dog and Timer Voltage Detector
# ROHM
# BD4271EFJ-CE2

## Model Information

| | |
|---|---|
| **Model** | A macro model |
| **Call Name** | MDC_BD4271EFJ-CE2_PS |
| **Pin Assign** | 1:VCC 2:CTL 3:N.C. 4:RO 5:GND 6:CLK 7:CT 8:VO 9:EX-PAD |
| **File List** | Model Library MDC_BD4271EFJ-CE2_PS.01lib |
| | Model Report MDC_BD4271EFJ-CE2_PS.pdf(this file) |

**Verified Simulator Version** Pspice version 17.2

**Note**

**References**

The information which was used for modeling is as follow:

[Data Sheet]

- ●Date/Version
- ●Product name BD4271EFJ-CE2
- ●Company name ROHM

[Characteristics listed]

●Characteristics
Output Voltage vs Input Voltage
Line regulation
Load regulation
When supply voltage VCC is ON ⇔ OFF
When output control voltage VCTL is ON ⇔ OFF
When WDT threshold Voltage VCLK is ON ⇔ OFF
Overcurrent Protection Characteristics

**Simulation Condition**

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

| Item | Condition | | | Unit |
|---|---|---|---|---|
| | Min | Typ | Max | |
| Vcc | 5.5 | | 45.0 | V |
| Temperature | | 25.0 | | deg C |

○ : Implemented
× : Not Implemented
— : Not applicable

**Model Functions Table**

| | RANK=2 | |
|---|---|---|
| **Functions** | **RANK** | **Implemented** |
| Output Voltage vs Input Voltage | 1 | ○ |
| Line regulation | 1 | ○ |
| Load regulation | 1 | ○ |
| Enable Operation | 1 | ○ |
| Dropout Voltage | 1 | ○ |
| Overcurrent Protection Characteristics | 1 | ○ |
| WDT Reset Operation | 2 | ○ |

Output Voltage vs Input Voltage (Input=0V~45V Output=5.0V IOUT=200mA)

Simulation results are following.

Explanatory notes — : simulated

fig4a.png

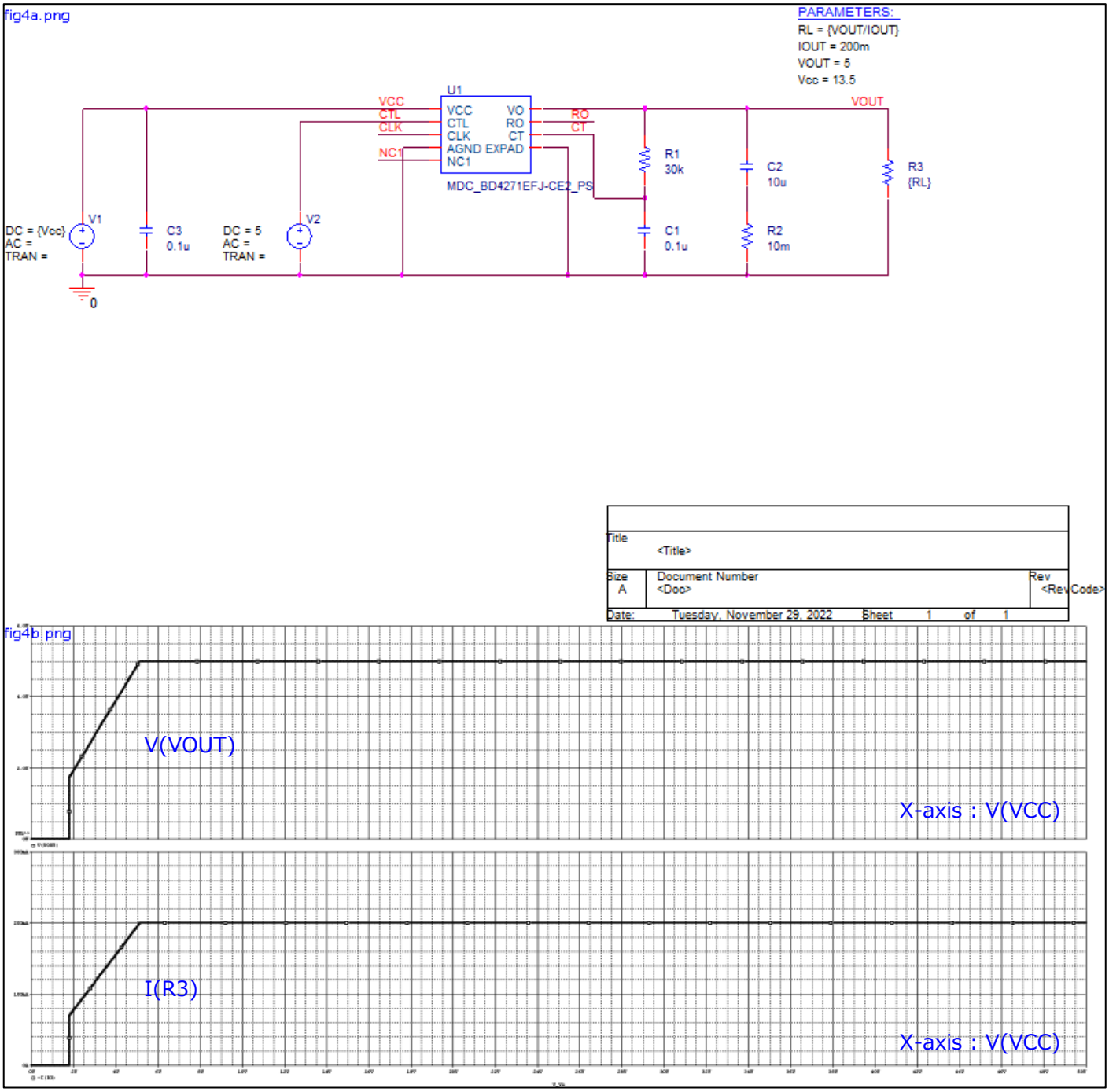



fig4b.png

Line regulation (Input=8V~16V Output=5.0V IOUT=0A)

Simulation results are following.

Explanatory notes — : simulated

fig5a.png

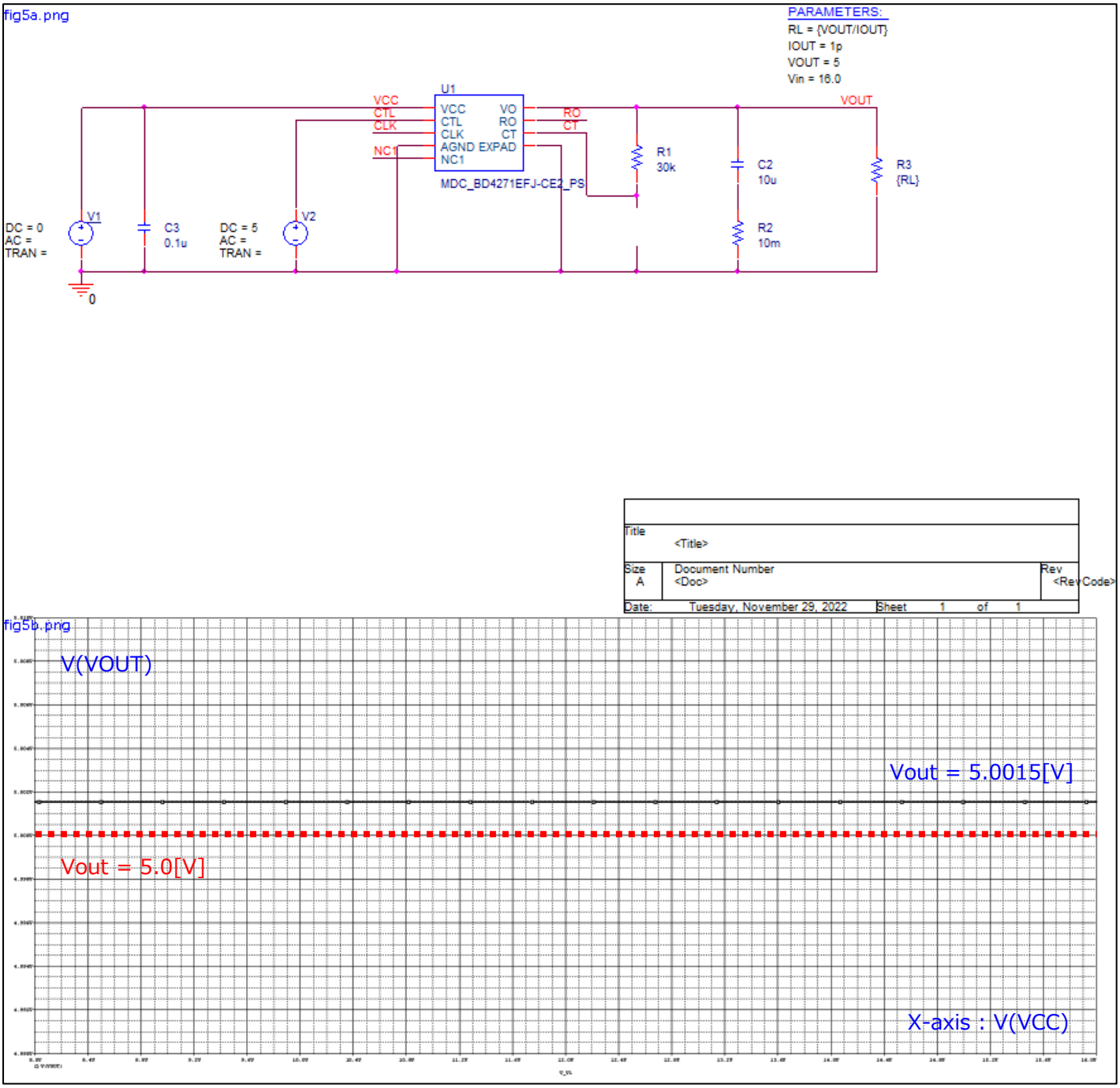
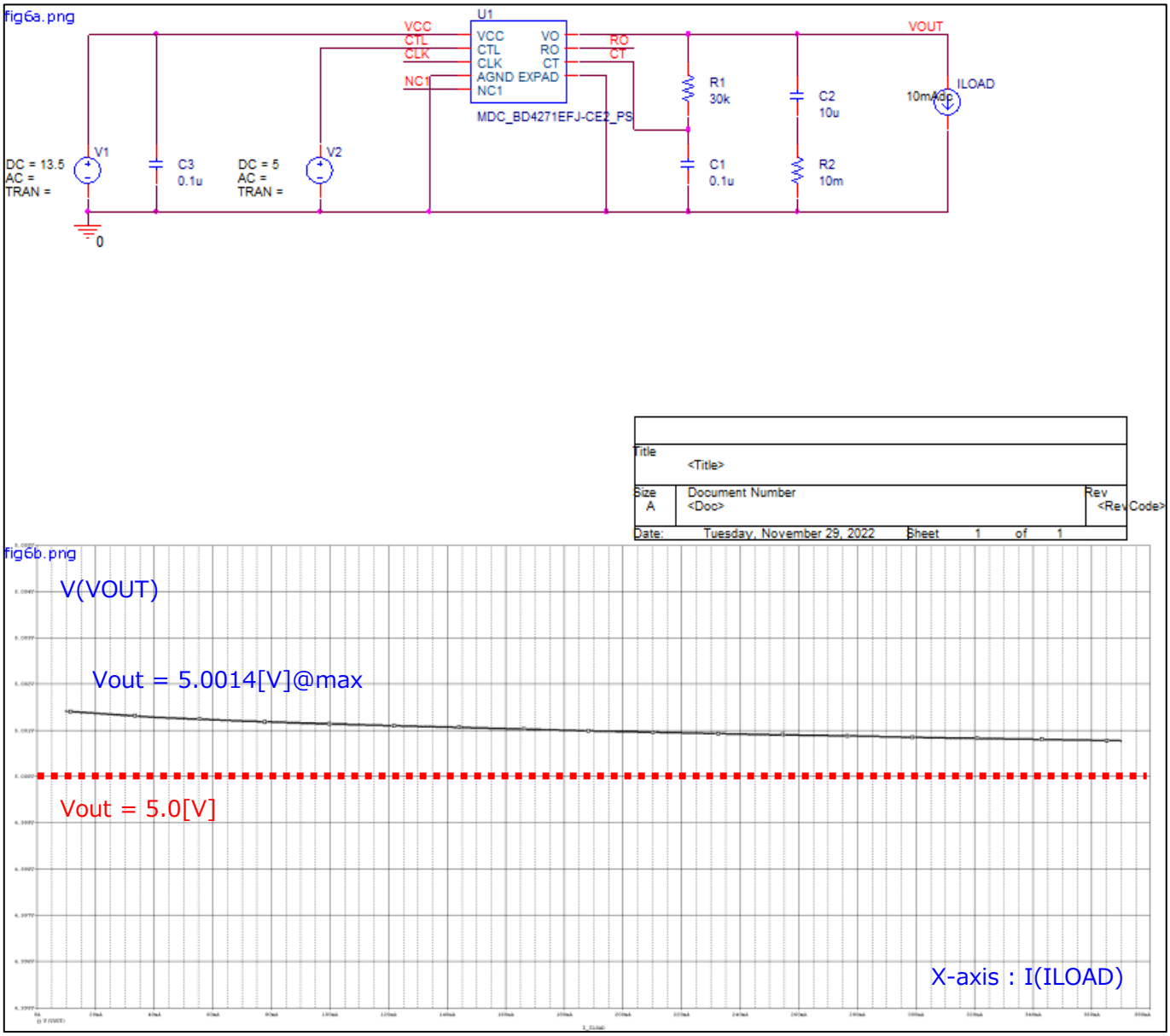



fig5b.png

Load regulation (Input=13.5V Output=5.0V IOUT=10mA~300mA)

Simulation results are following.

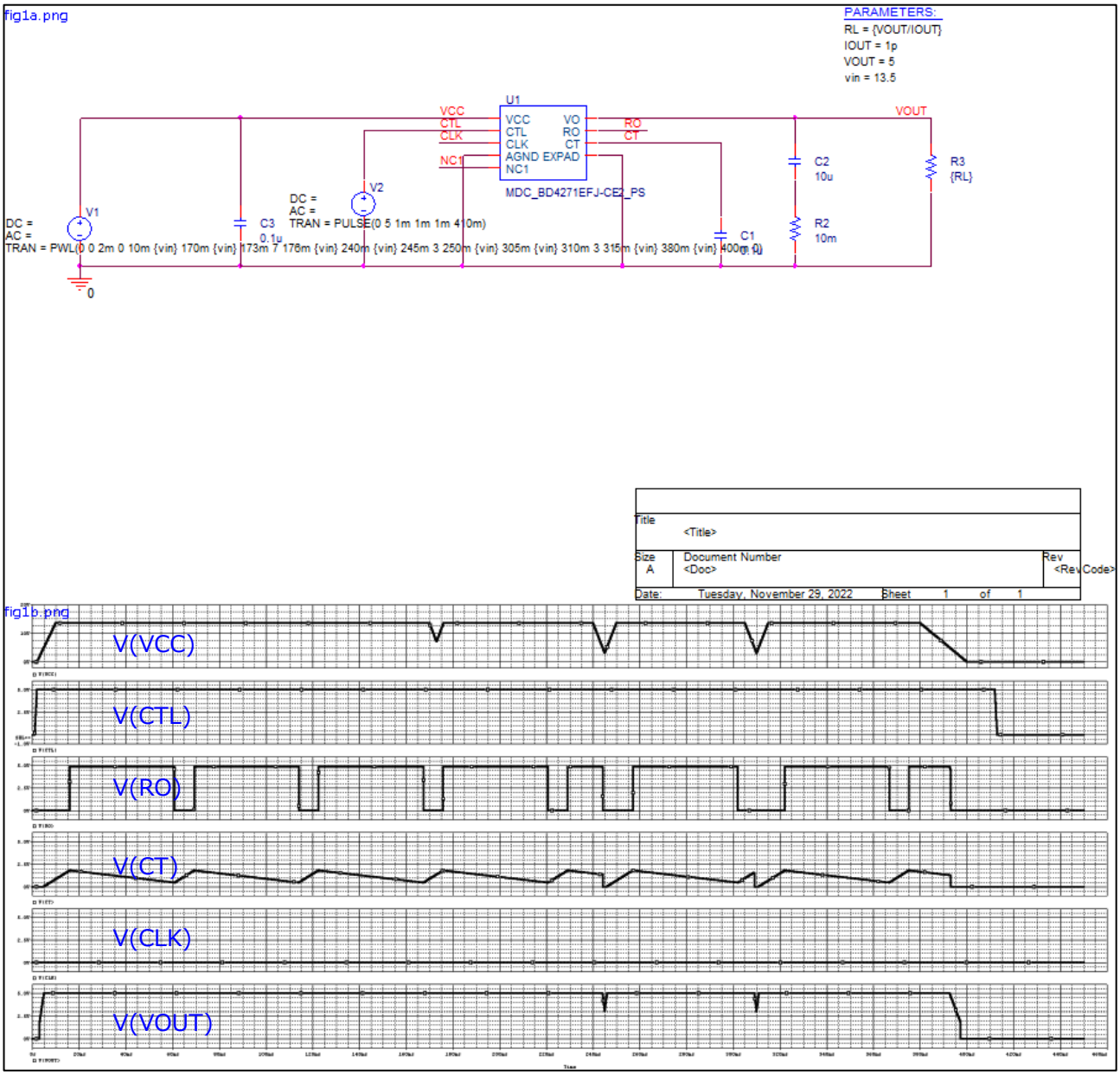
Explanatory notes — : simulated



When supply voltage VCC is ON ⇔ OFF (Input=13.5V Output=5.0V IOUT=1pA)

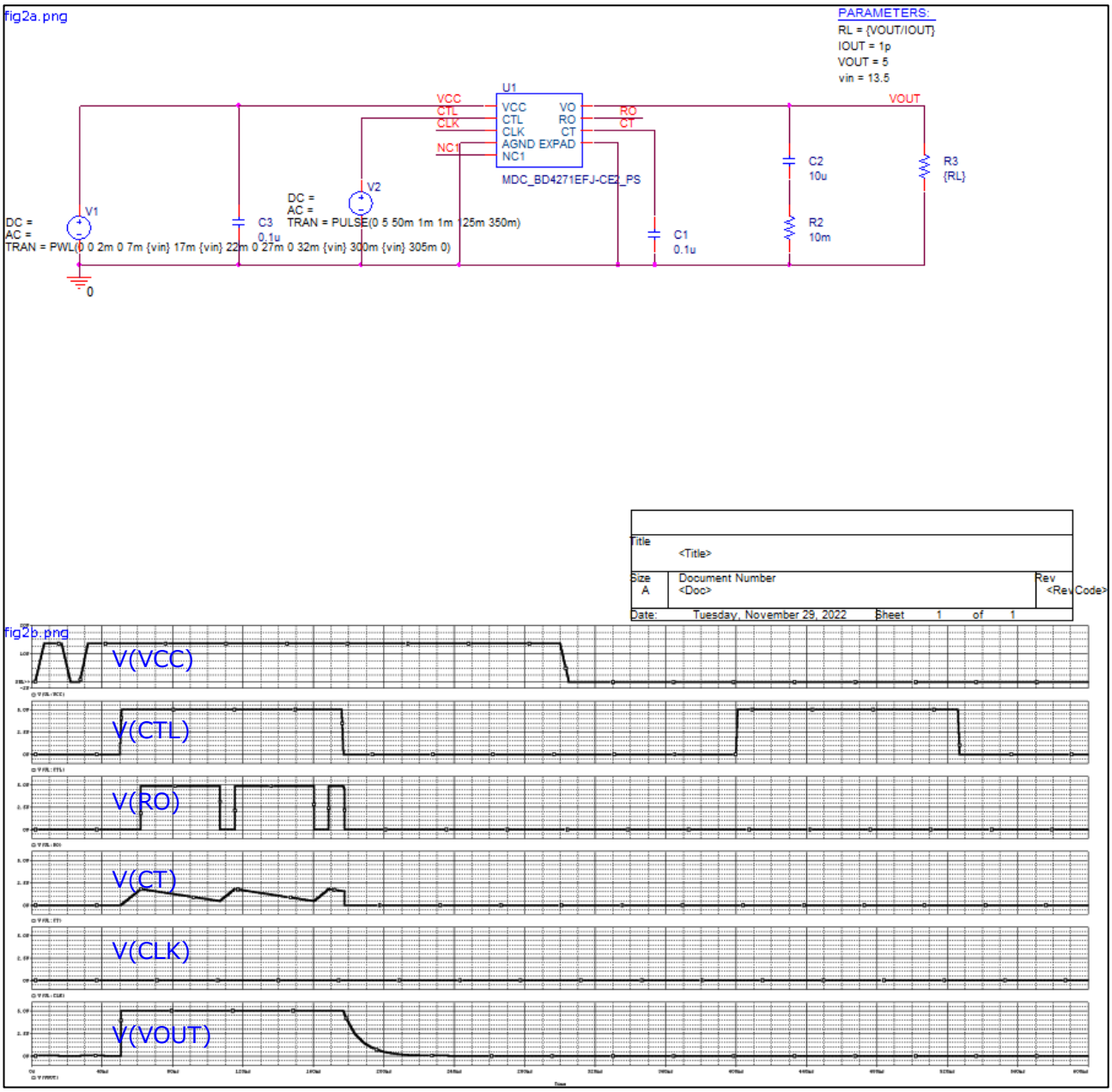
Simulation results are following.

Explanatory notes　— : simulated



When output control voltage VCTL is ON ⇔ OFF (Input=13.5V Output=5.0V IOUT=1pA)

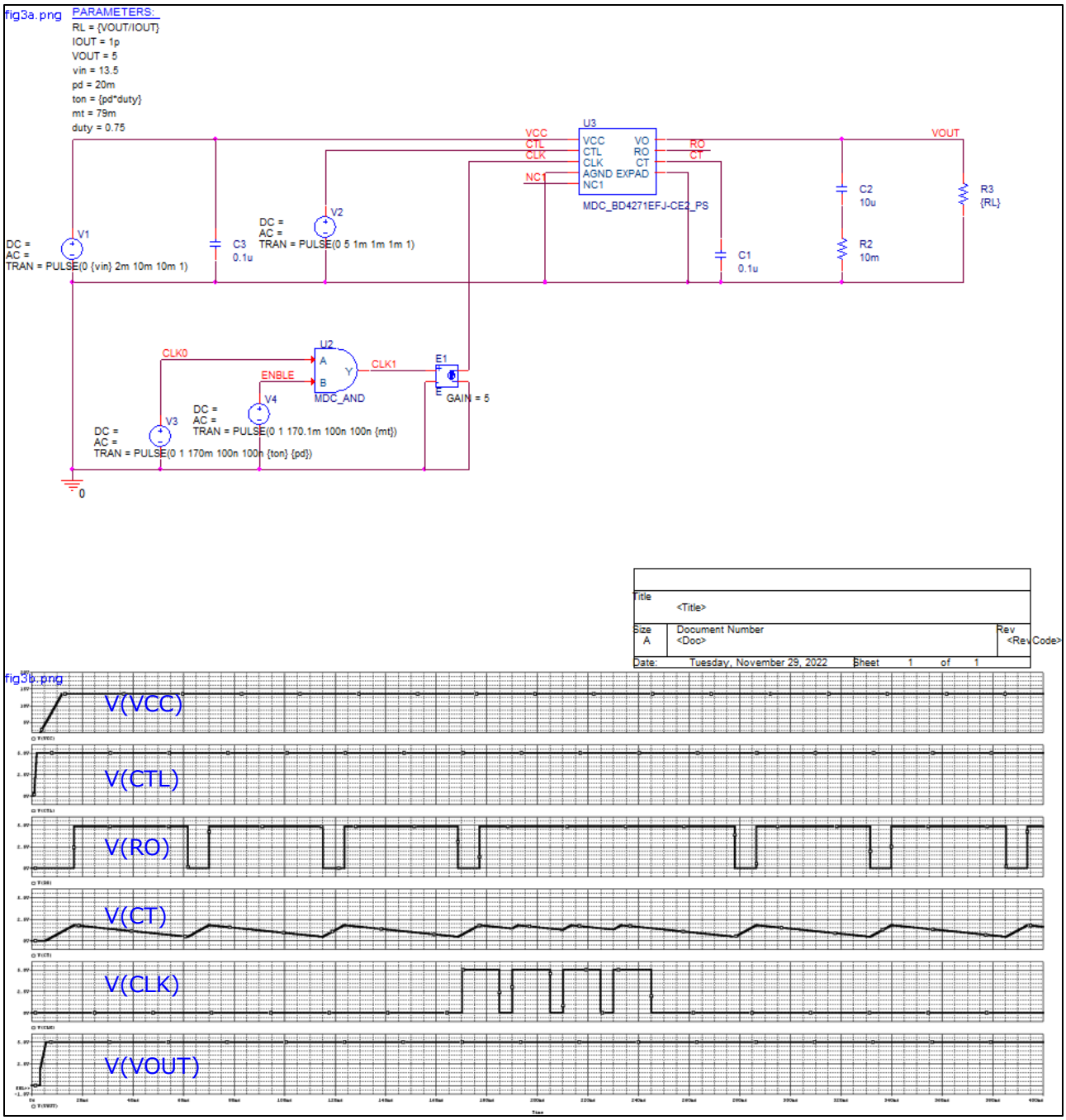
Simulation results are following.
Explanatory notes　— : simulated



When WDT threshold Voltage VCLK is ON ⇔ OFF (Input=13.5V Output=5.0V IOUT=1pA)

Simulation results are following.

Explanatory notes　　— : simulated



Overcurrent Protection Characteristics (Input=13.5V Output=5.0V⇒0V)

Simulation results are following.
Explanatory notes　— : simulated

fig7a.png

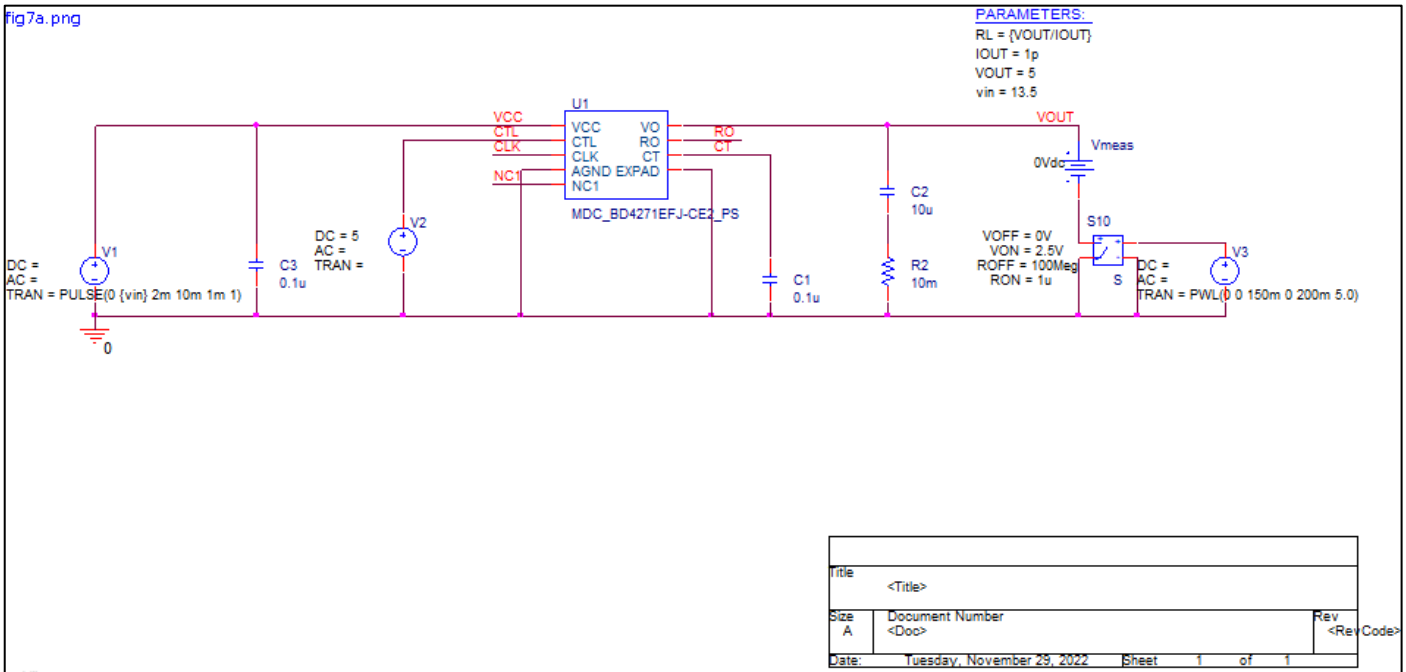



fig7b.png

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