

# LTspice Model

## Switching Regulator IC for Buck Converter

### NewJRC(Nisshinbo Micro Devices)

### NJW4160R

#### Model Information

**Model** An original macro model  
**Call Name** MDC\_NJW4160R\_LT  
**Pin Assign** 1:\_OUT 2:SI 3:V+ 4:EN 5:IN- 6:FB 7:CT 8:GND

**File List** Model Library MDC\_NJW4160R\_LT.lib  
 Model Report MDC\_NJW4160R\_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 Ver.2014-04-01
- Product name NJW4160
- Company name NewJRC(Nisshinbo Micro Devices)

[Characteristics listed]

- Characteristics Transient  
UVLO  
Frequency-CT

#### Simulation Condition

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

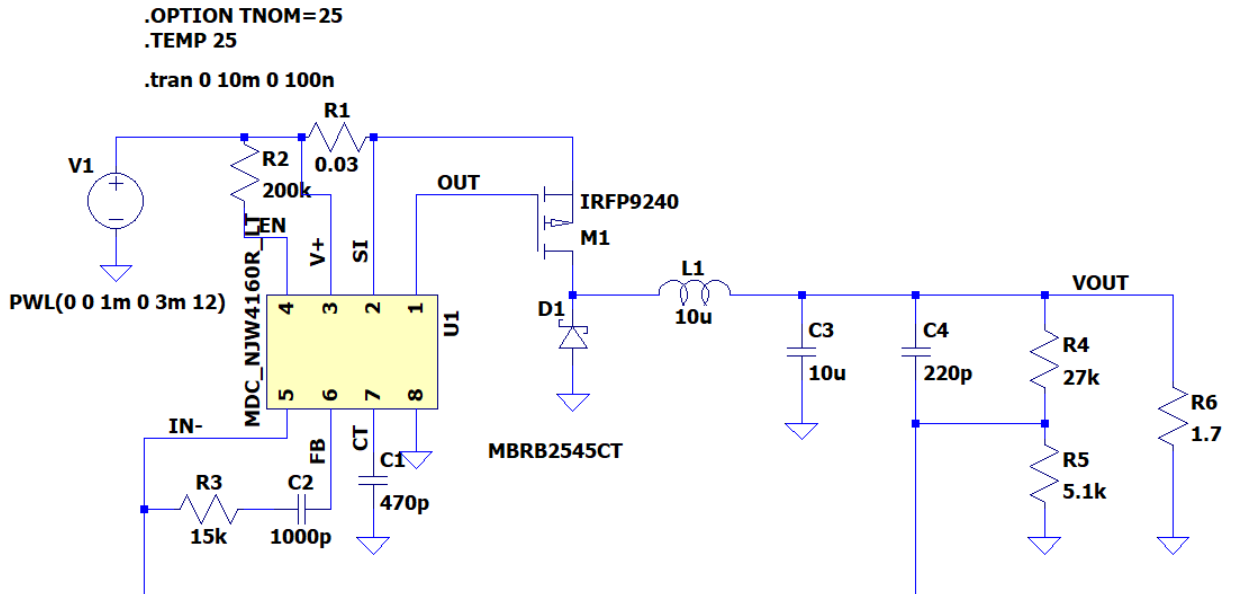
Item	Condition	Unit
Temperature	25	deg C

○ : Implemented  
 × : Not Implemented  
 — : Not applicable

**Model Functions Table**
**RANK=1**

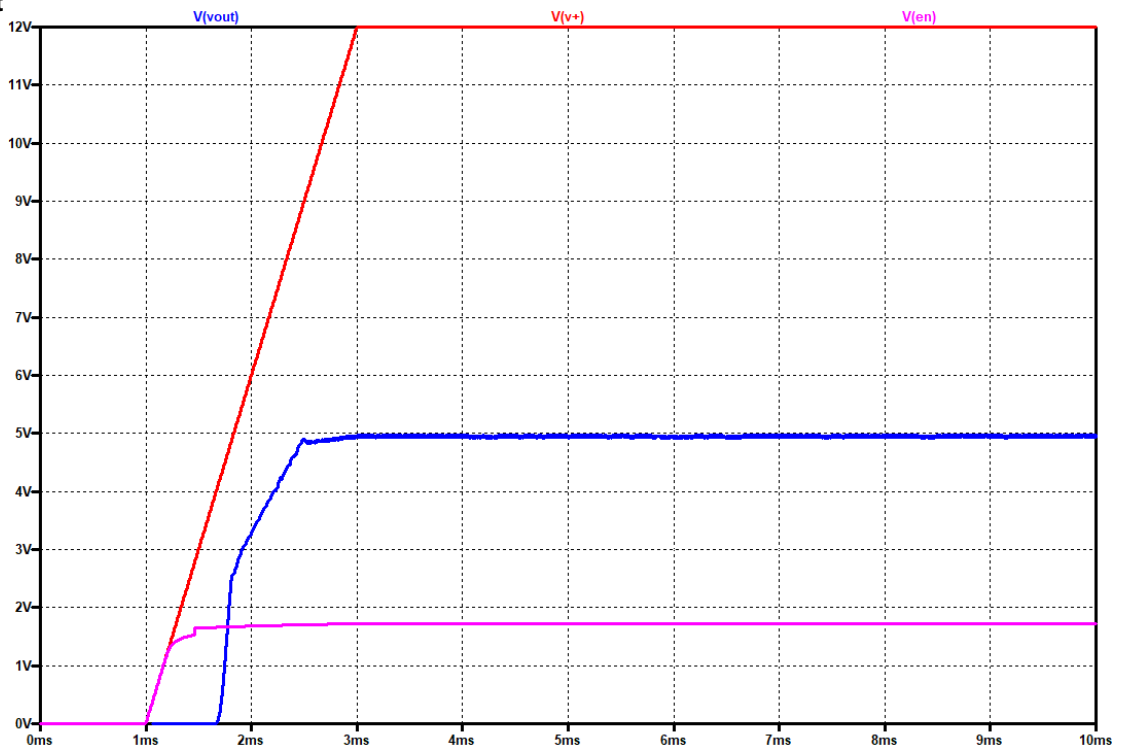
Functions	RANK	Implemented
Control Method(PWM,PFM)	1	○
Enable Function	1	○
Soft Start	1	—
Line Regulation	1	—
Load Regulation	1	—
Variable OSC Frequency	1	○
UVLO	1	○
Line Transient	2	—
Load Regulation	2	—
Light Load Current Mode	2	—
Spread Spectrum	2	—
Over Current Protection	2	○
Over Voltage Protection	2	—
Forward/Flyback Other Device in Circuit	3	—
Brown IN/OUT Function	—	—
ZT Pin OVP Function	—	—

Transient Testbench  
 Referred to Data Sheet



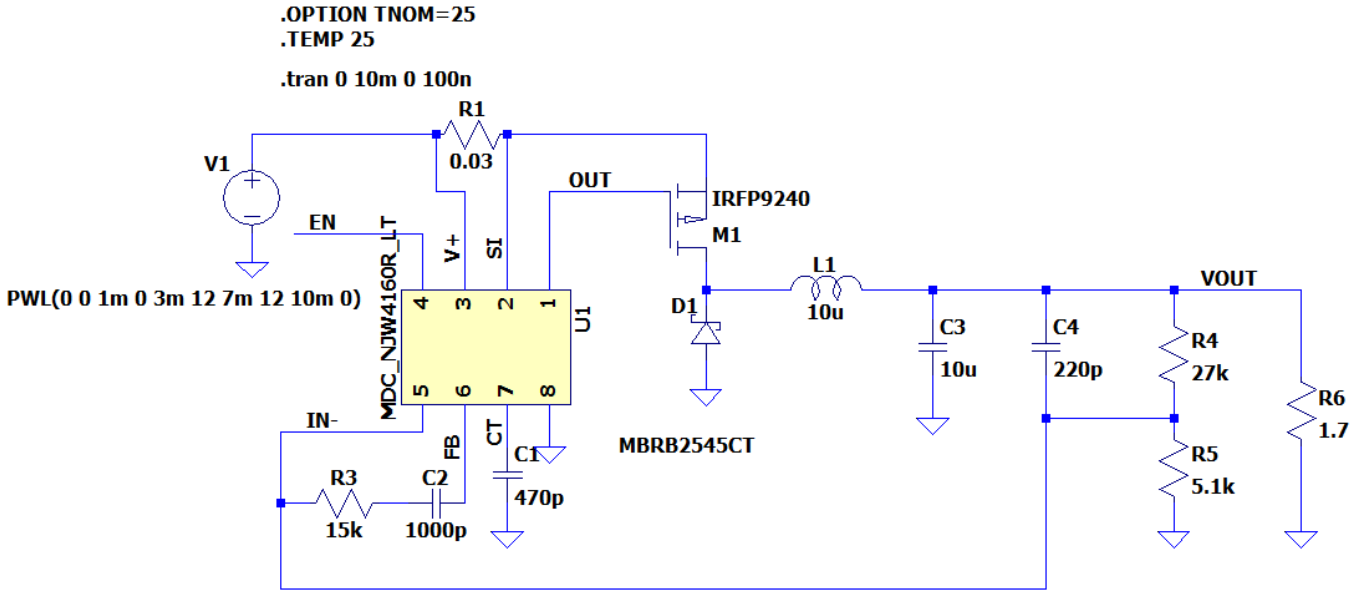
Simulation results are following.  
 Explanatory notes — : simulated

Transient



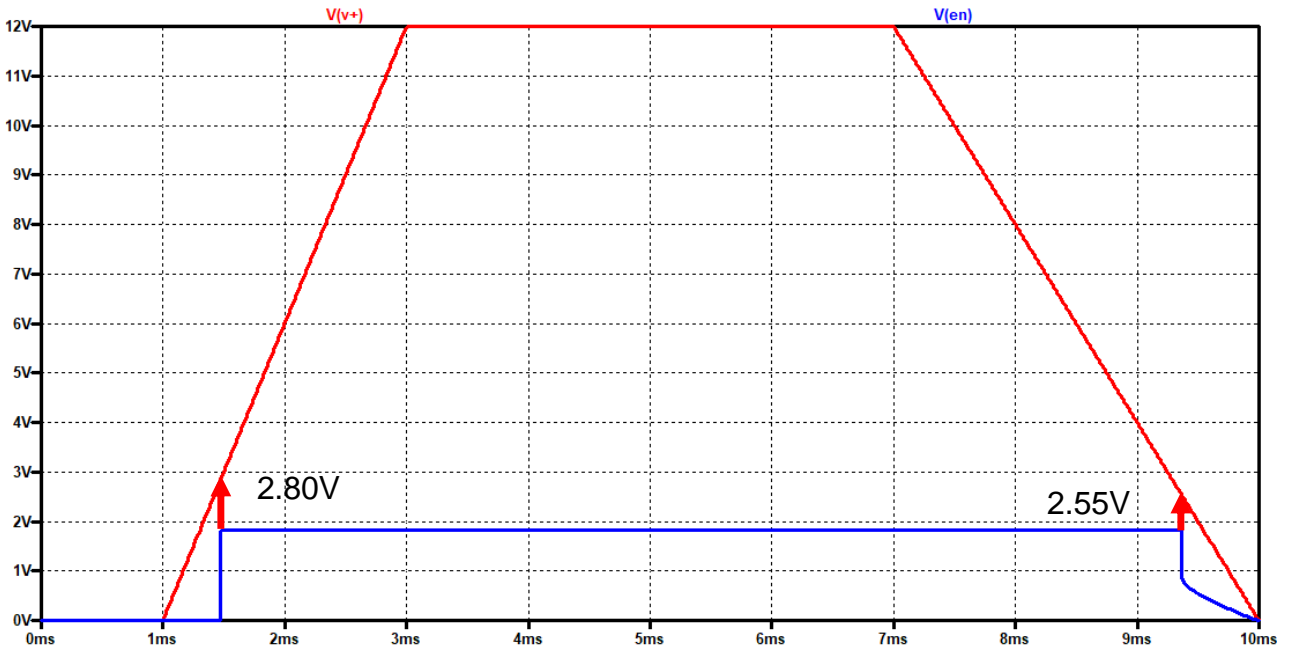
UVLO Testbench

Referred to Data Sheet

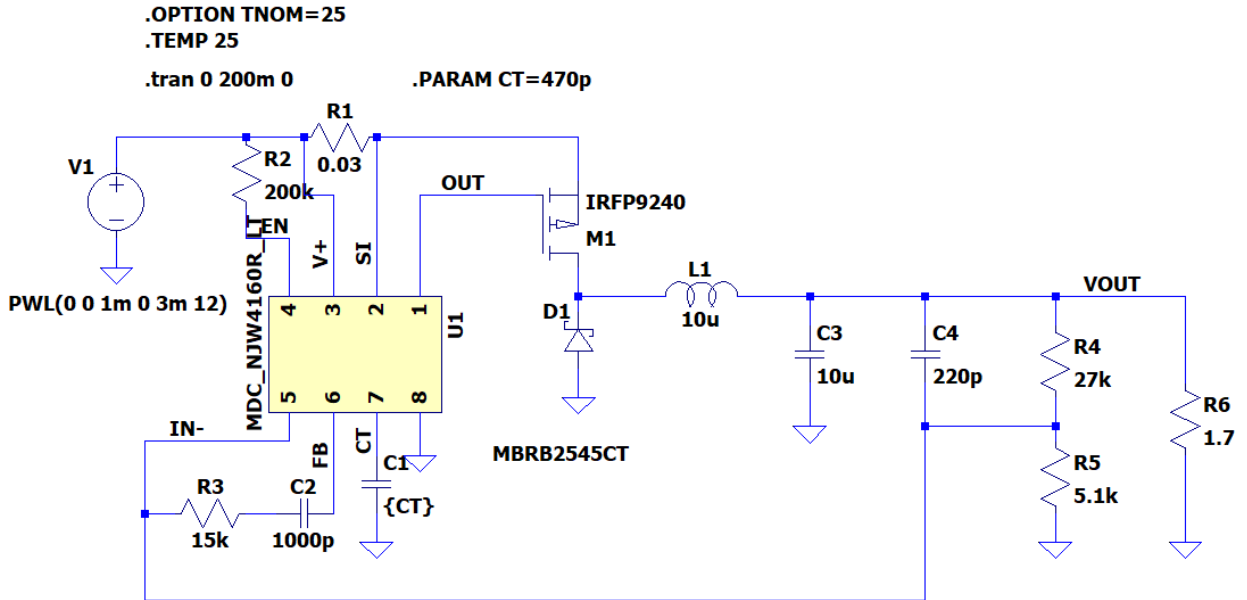


Simulation results are following.  
 Explanatory notes — : simulated

UVLO

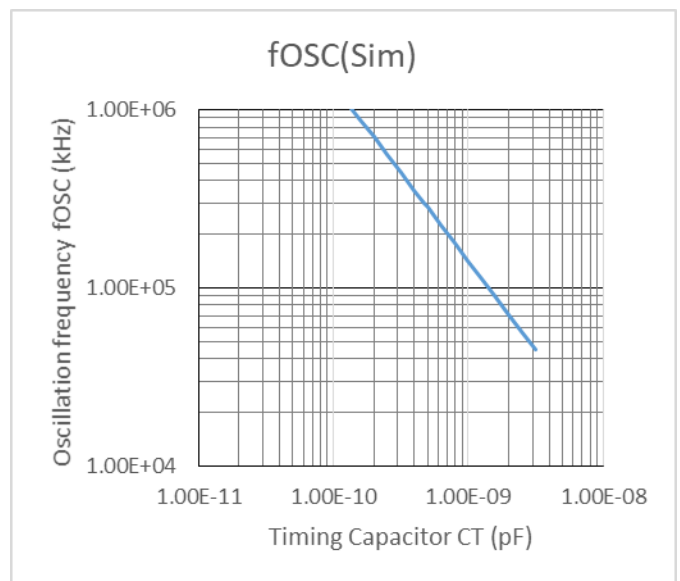
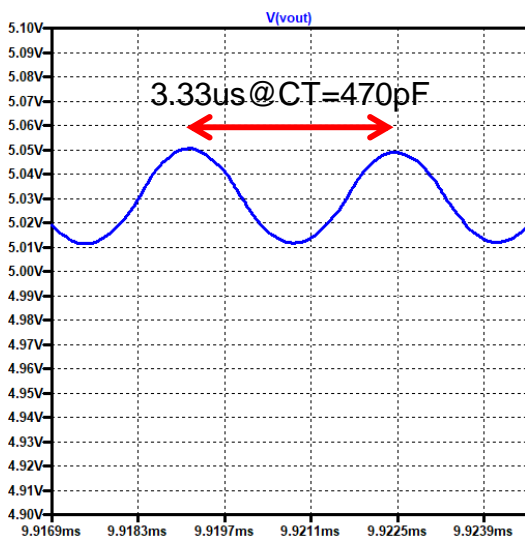


Frequency-CT Testbench  
 Referred to Data Sheet



Simulation results are following.  
 Explanatory notes — : simulated

Frequency-CT



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