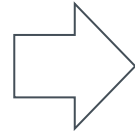
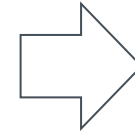


How to add (change) a new component

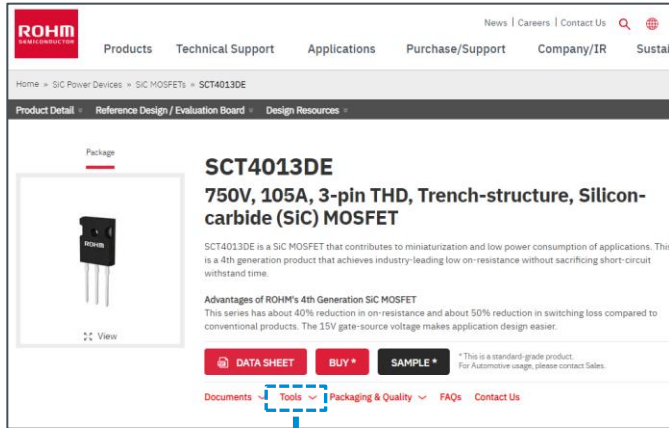
Download LTspice® model from ROHM website.



Save LTspice® model in the same folder as the schematic file.

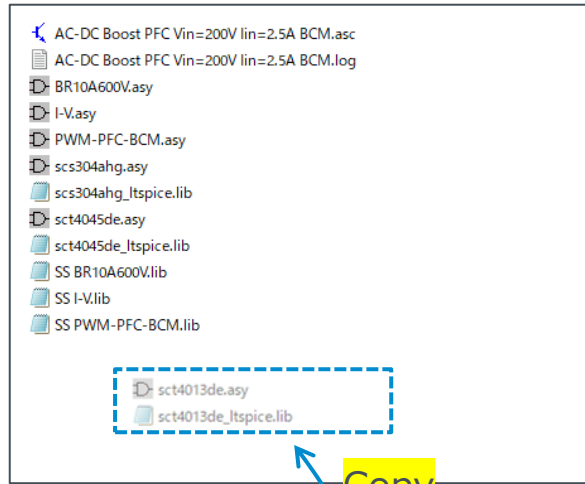


Click on the “Component” icon from the toolbar to add a new component to the schematic.

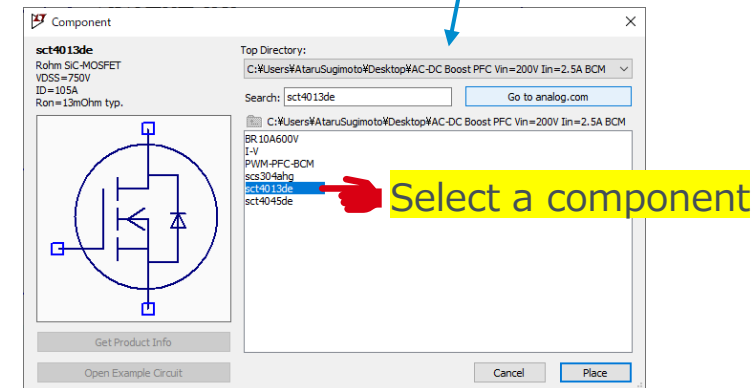
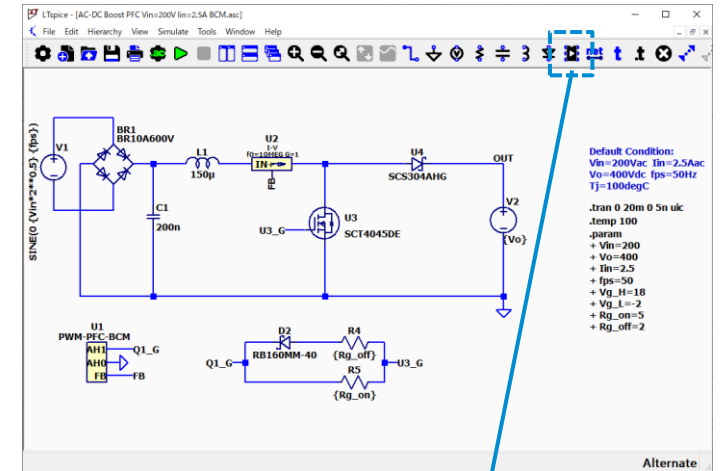


| SCT4013DE | |
|---|--|
| 750V, 105A, 3-pin THD, Trench-structure, Silicon-carbide (SiC) MOSFET | |
| Product Detail / Reference Design / Evaluation Board / Design Resources | |
| Tools | |
| Type | Title |
| Models | NEW SCT4013DE PSIM Model |
| Models | NEW SCT4013DE PLECS Model |
| Models | NEW SCT4013DE LTspice Model |
| Models | NEW SCT4013DE SPICE Thermal Model |
| Models | NEW SCT4013DE SPICE Model |
| 2D/3D/CAD | PCB Symbol, Footprint & 3D Model |

LTspice® schematic file

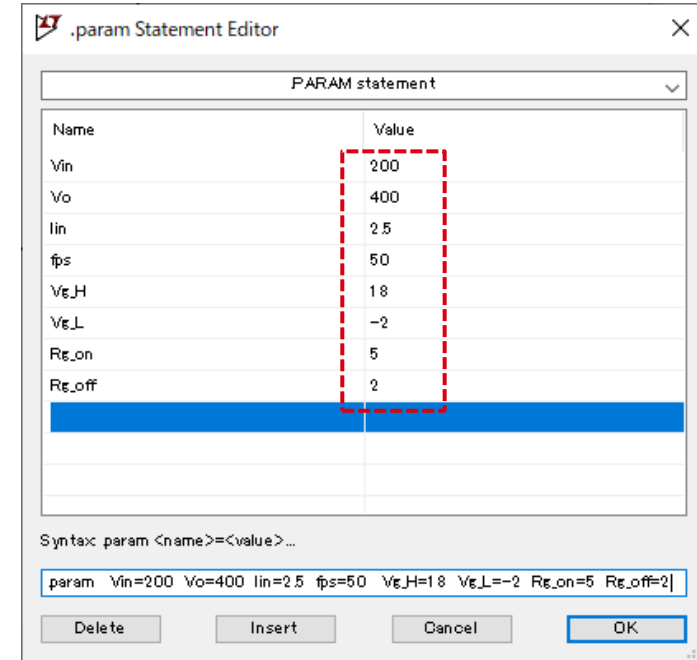
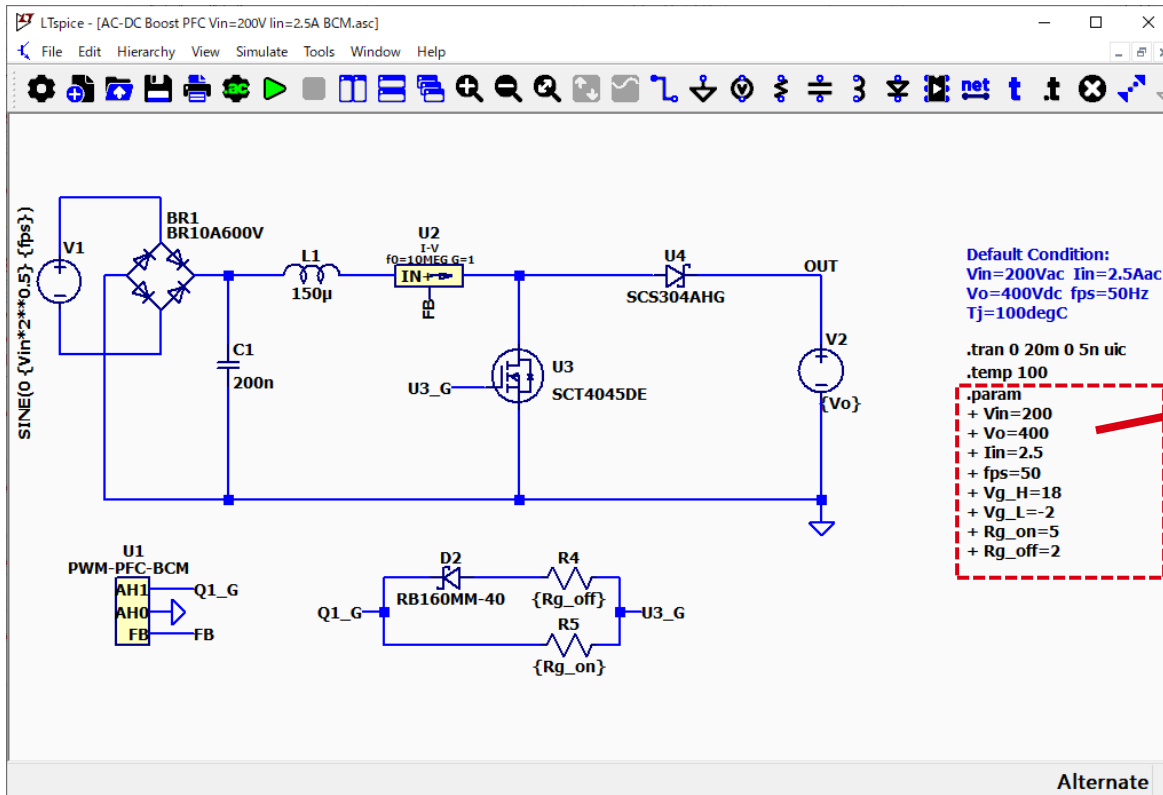


LTspice® model

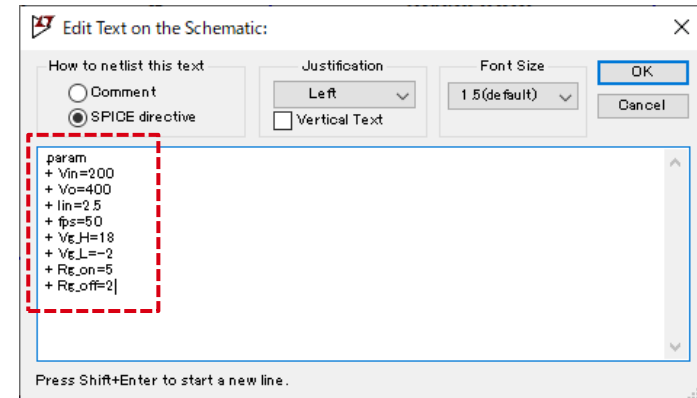


How to change the Simulation Conditions

Simulation Schematic



or



Right-click on the “.param” text on the schematic to launch the “.param Statement Editor” or “Text Editor. Change the parameters as necessary.

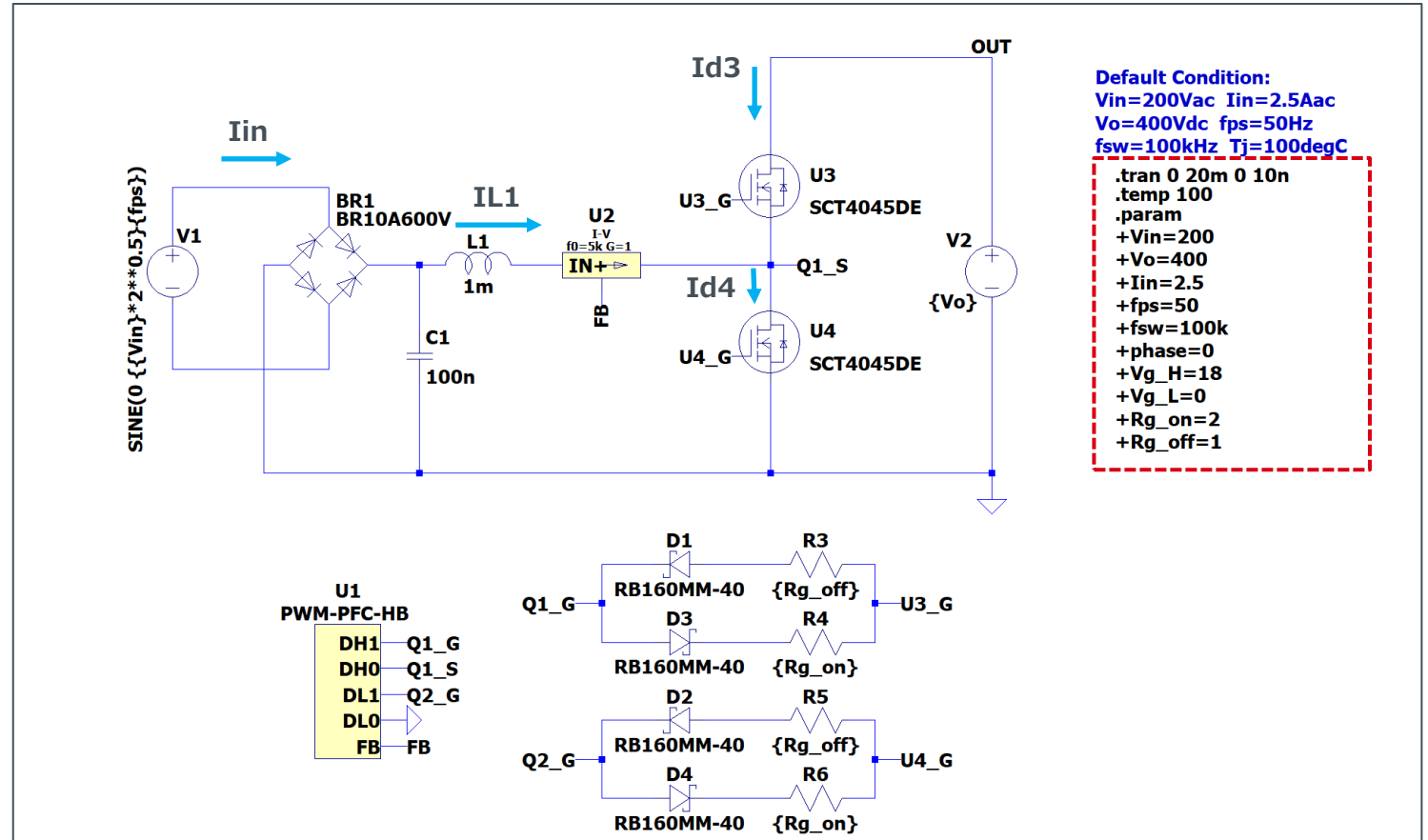
Simulation Parameters

| Param name | Unit | Description |
|------------|------|----------------------------|
| Vin | V | Input Voltage |
| Vo | V | Output Voltage |
| fps | Hz | Commercial power frequency |
| Iin | A | Input current |
| fsw | Hz | Switching frequency |
| Vg_H | V | Gate Drive Voltage High |
| Vg_L | V | Gate Drive Voltage Low |
| Rg_on | Ω | Gate Resistance On |
| Rg_off | Ω | Gate Resistance Off |

Components

| Instance name | Type | Default |
|---------------|--------------|------------|
| U3,U4 | SiC MOSFET | SCT4045DE |
| BR1 | Diode Bridge | BR10A600V |
| D1,2 | SBD | RB160MM-40 |

Simulation Schematic



You can download and exchange other component models. See the link below for details.

[How to Use LTspice® Models、 Design Simulation Models](#) : English version

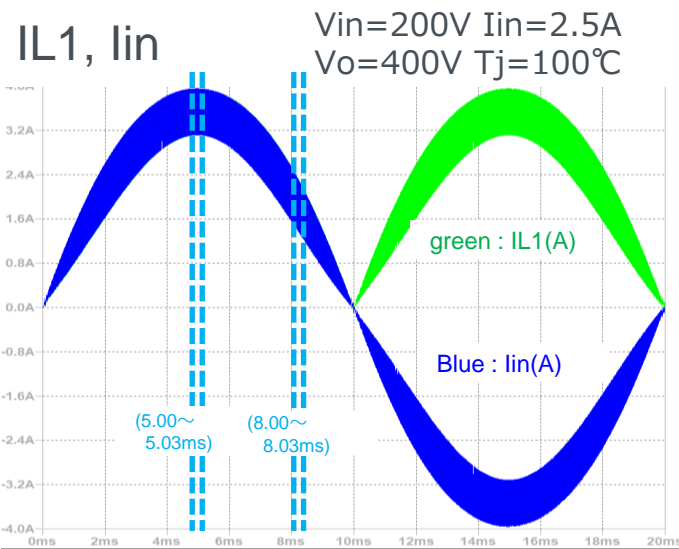
[LTspice®モデルの使い方、デザインモデル](#) : 日本語版

Simulation Result Waveform1

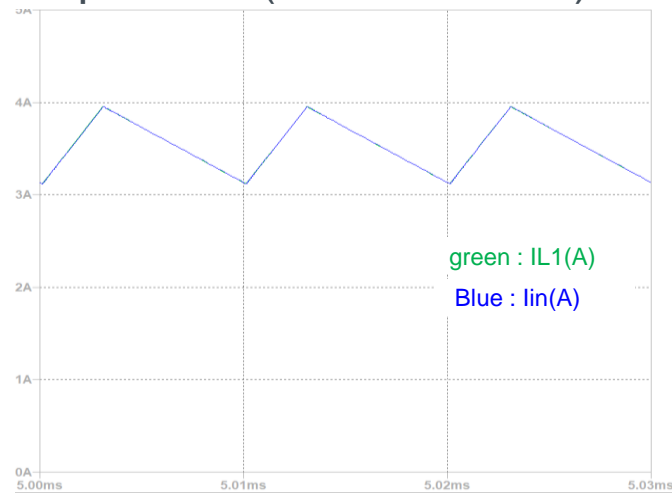
U3,4 : SiC MOSFET
SCT4045DE

2025 Jan.

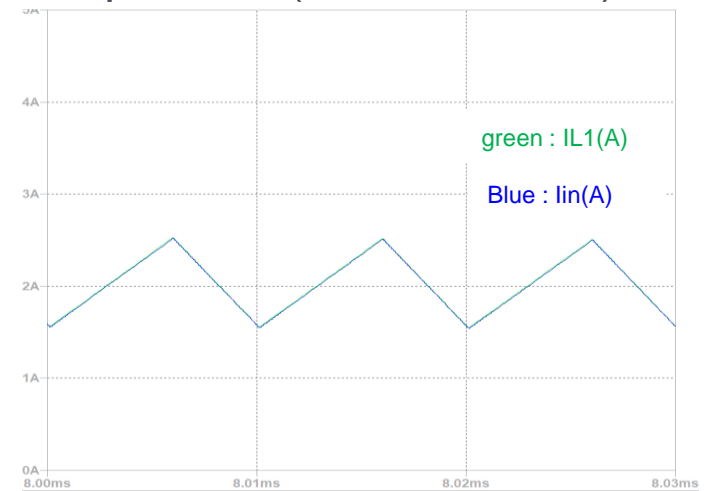
67UG112E Rev.002



Expansion (5.00~5.03ms)



Expansion (8.00~8.03ms)

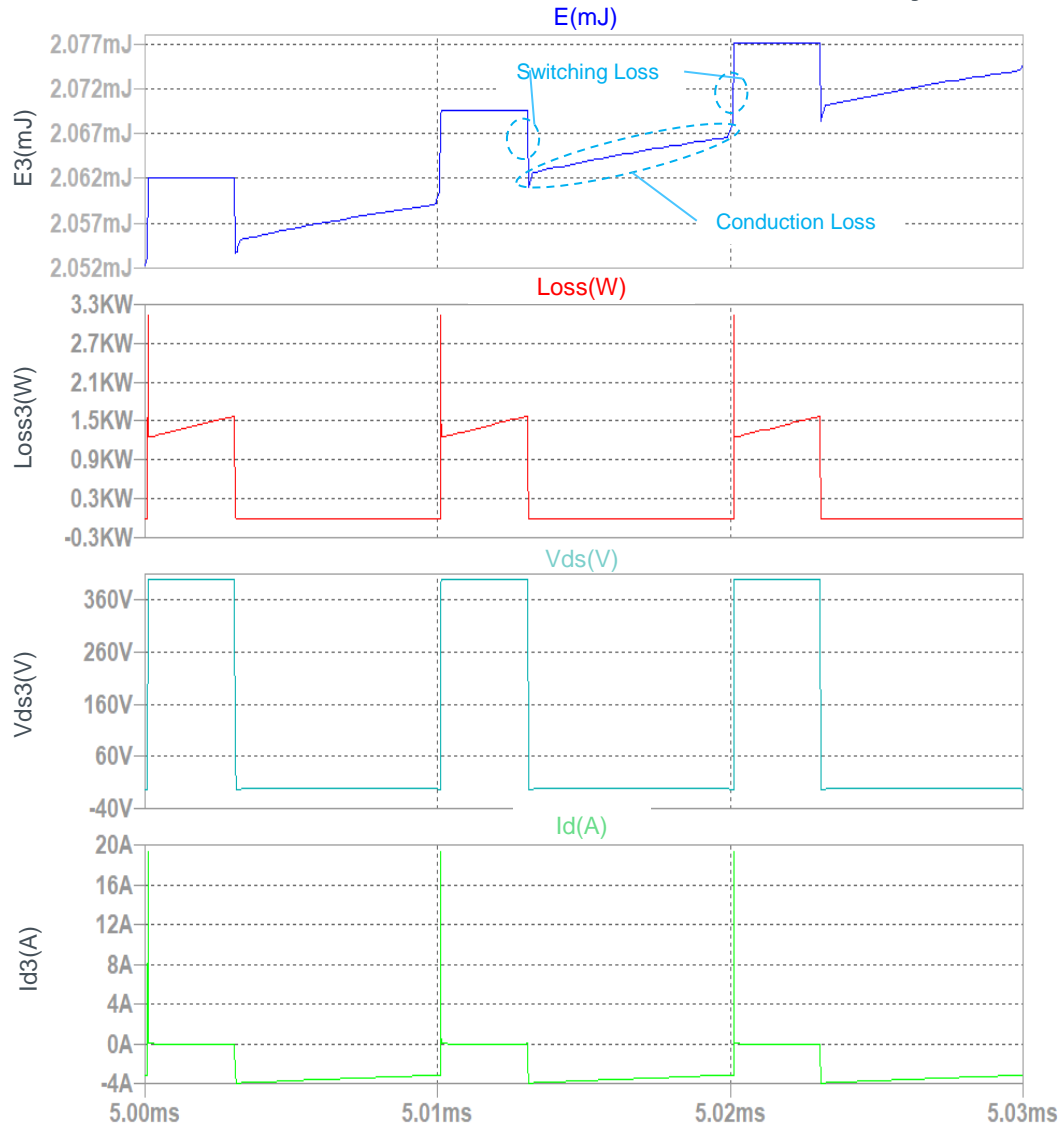


Simulation Result Waveform2

U3,4 : SiC MOSFET
SCT4045DE

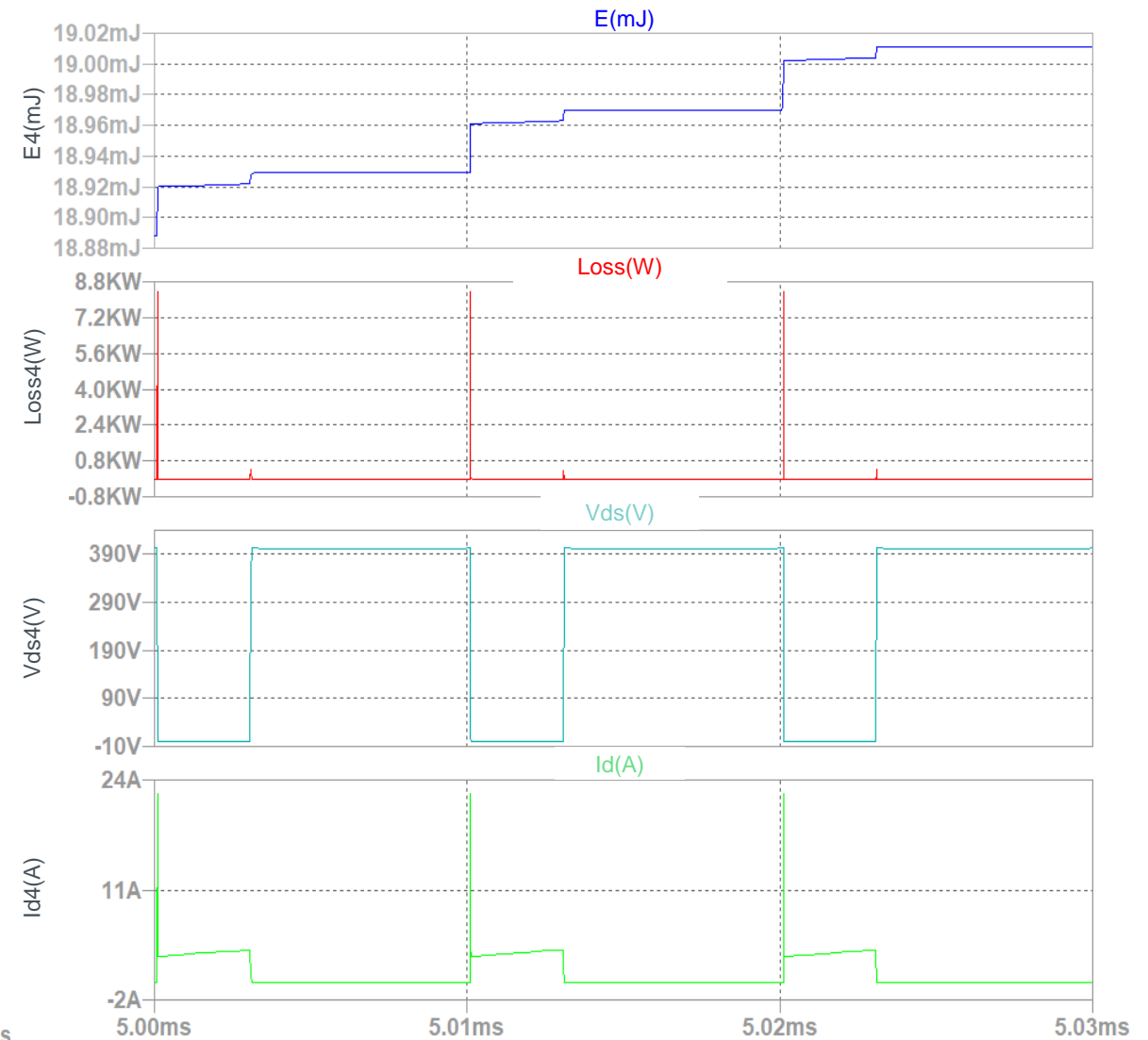
U3_E3, Loss3, Vds3, Id3

Vin=200V Iin=2.5A
Vo=400V Tj=100°C

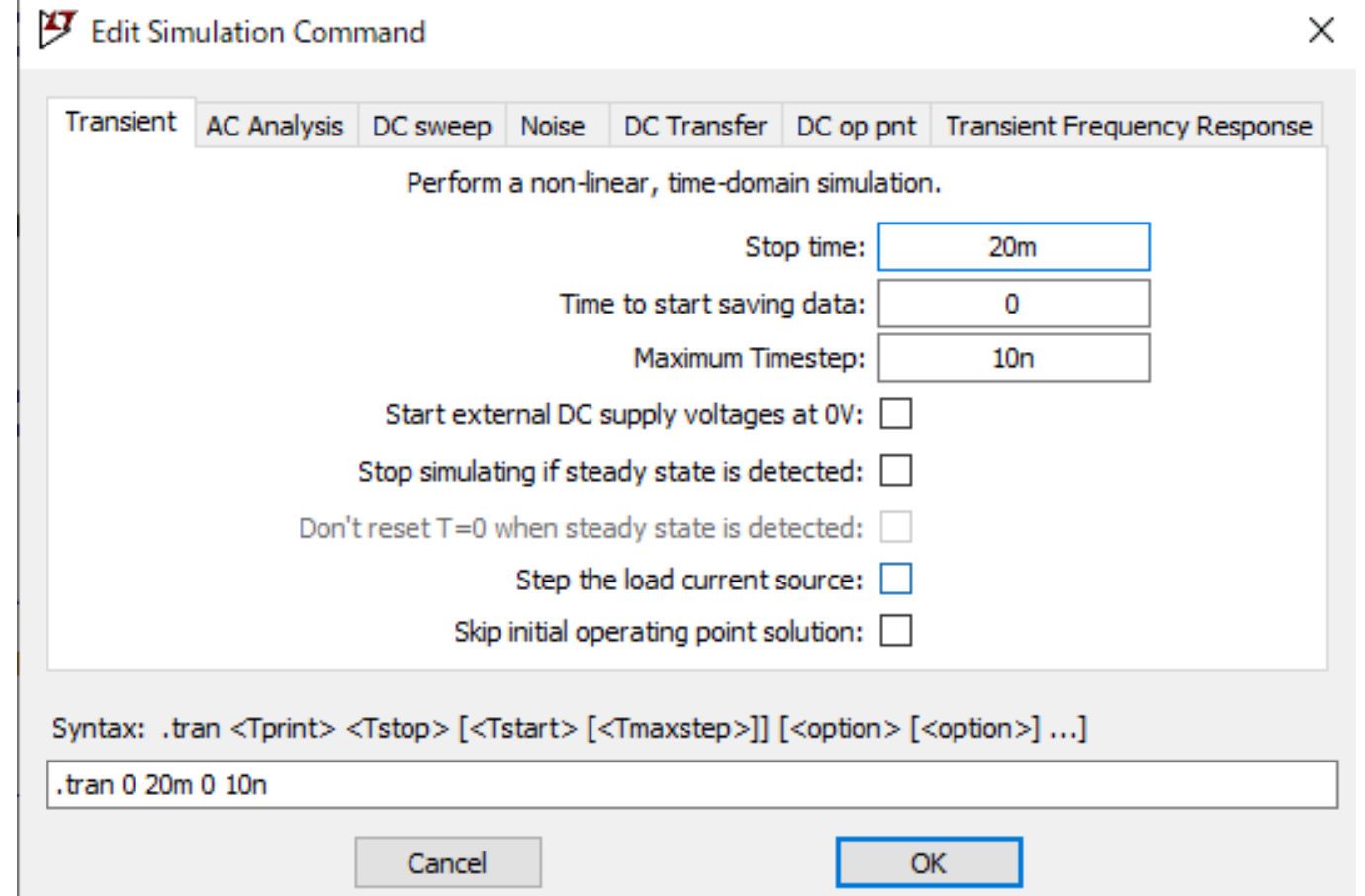
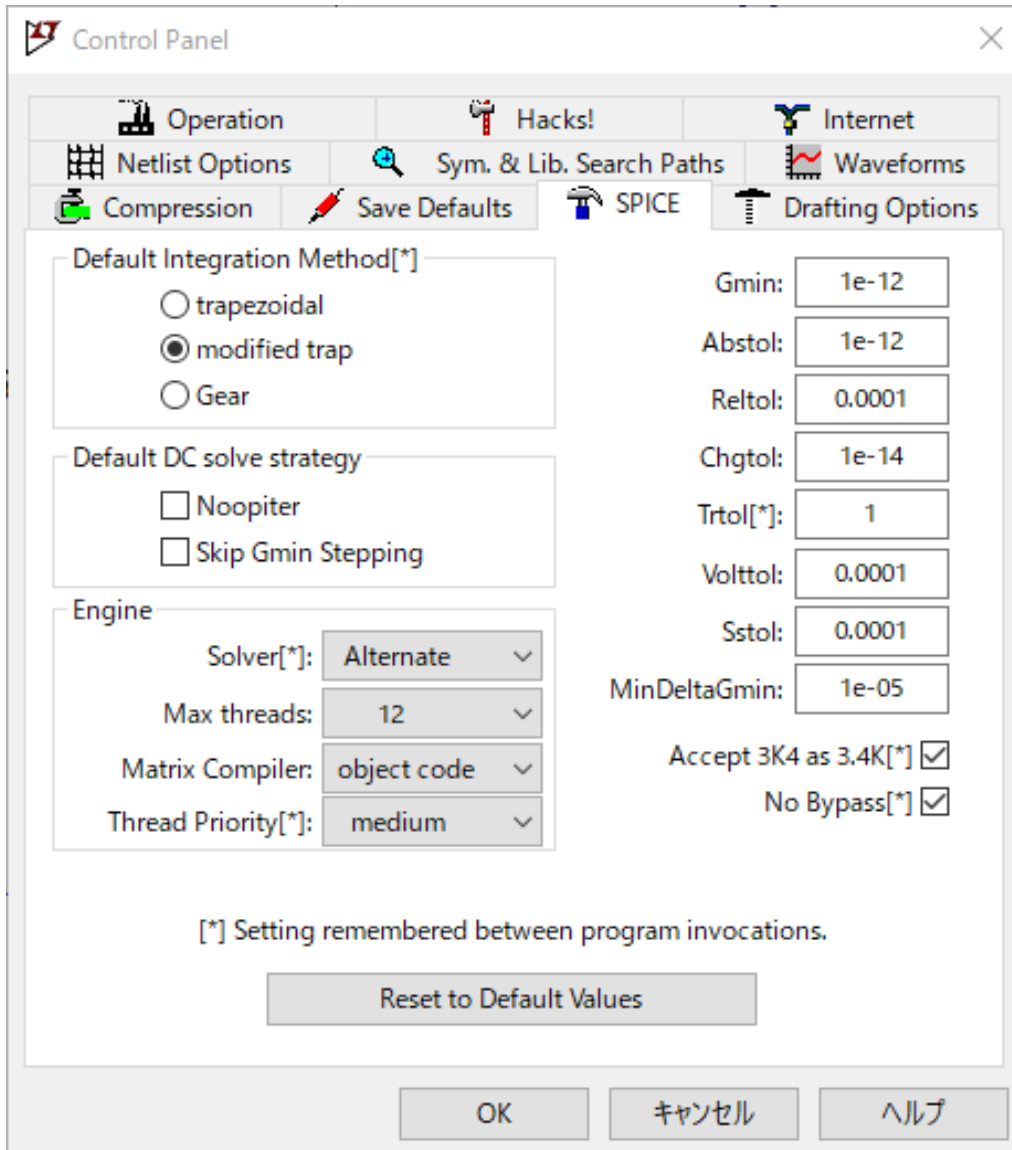


U4_E4, Loss4, Vds4, Id4

Vin=200V Iin=2.5A
Vo=400V Tj=100°C



Default setting



※LTspice version:24.1.3

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