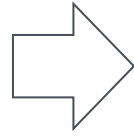
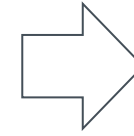


How to add (change) a new component

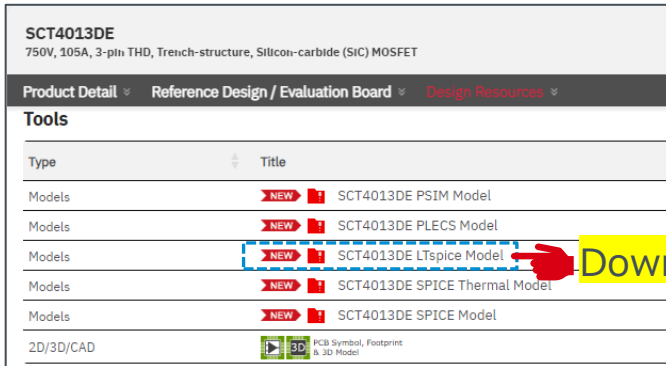
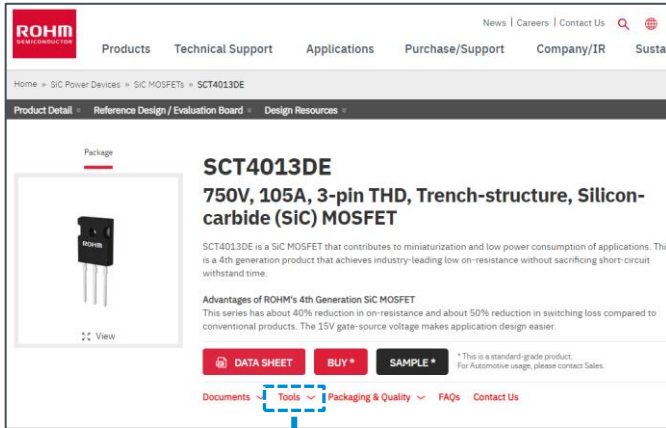
Download LTspice® model from ROHM website.



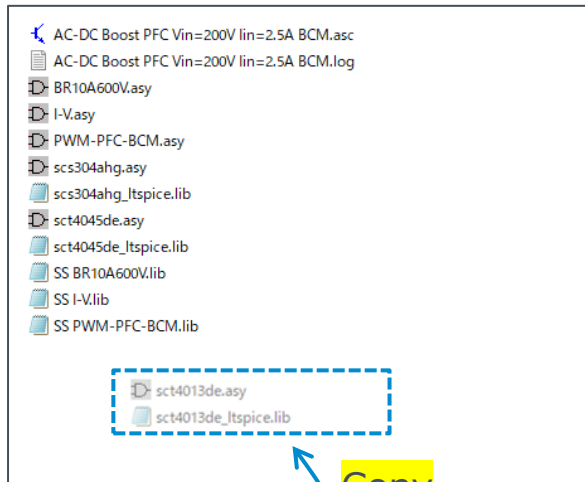
Save LTspice® model in the same folder as the schematic file.



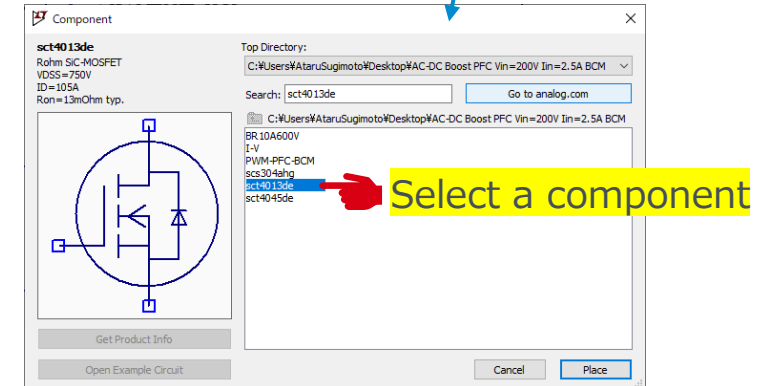
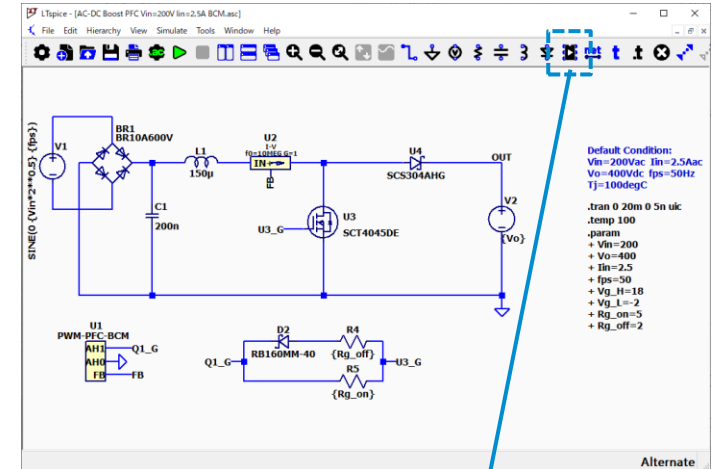
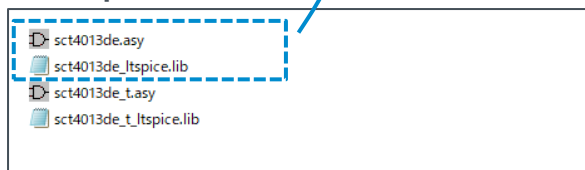
Click on the “Component” icon from the toolbar to add a new component to the schematic.



LTspice® schematic file

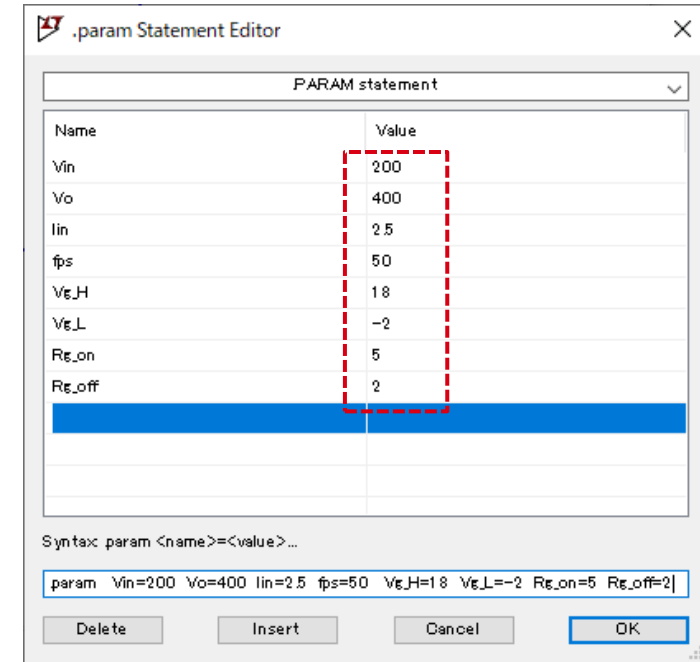
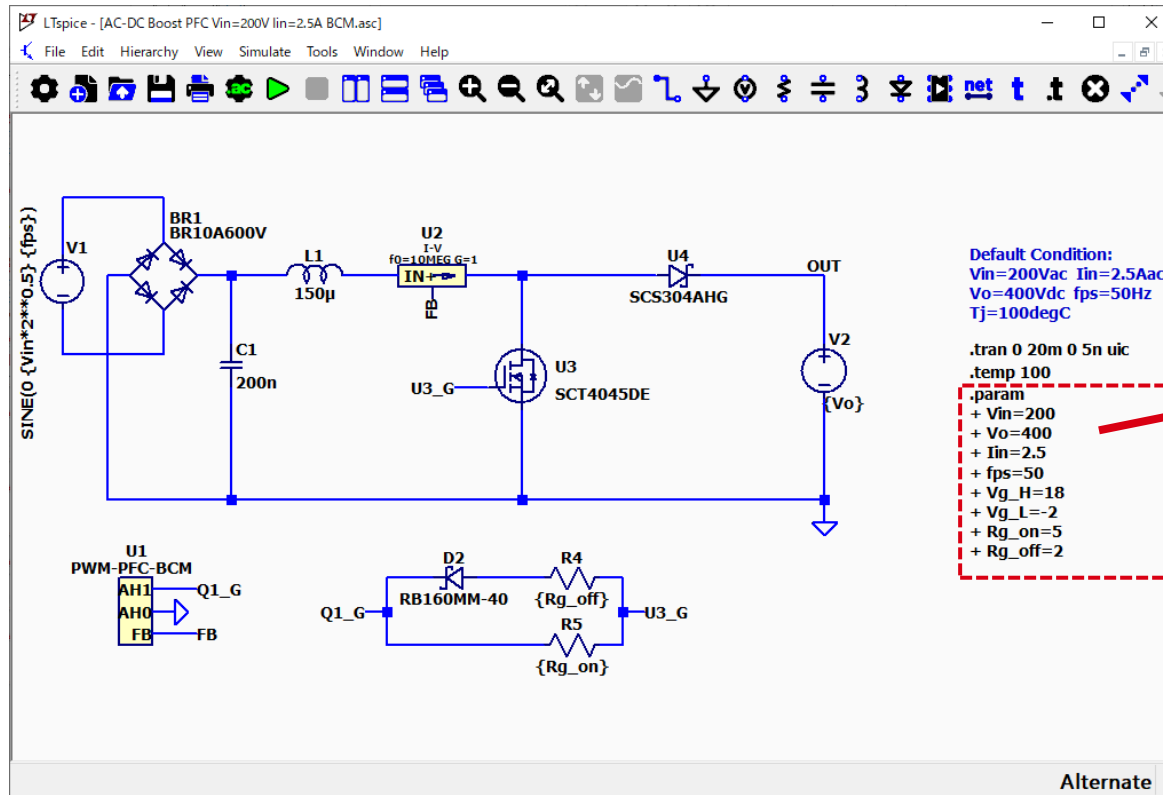


LTspice® model

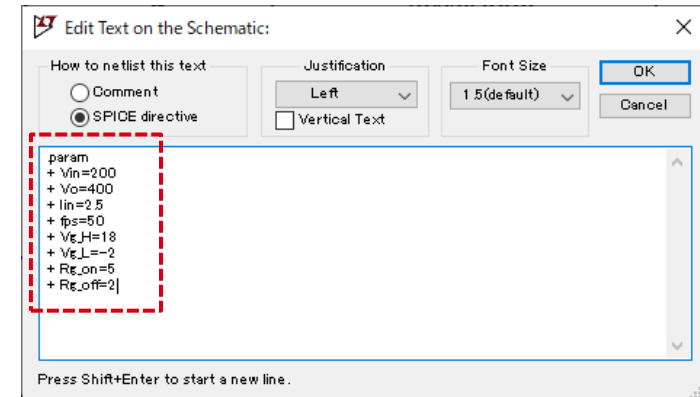


How to change the Simulation Conditions

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.

A-004. Boost PFC Vin=200V, Iin=2.5A, DCM

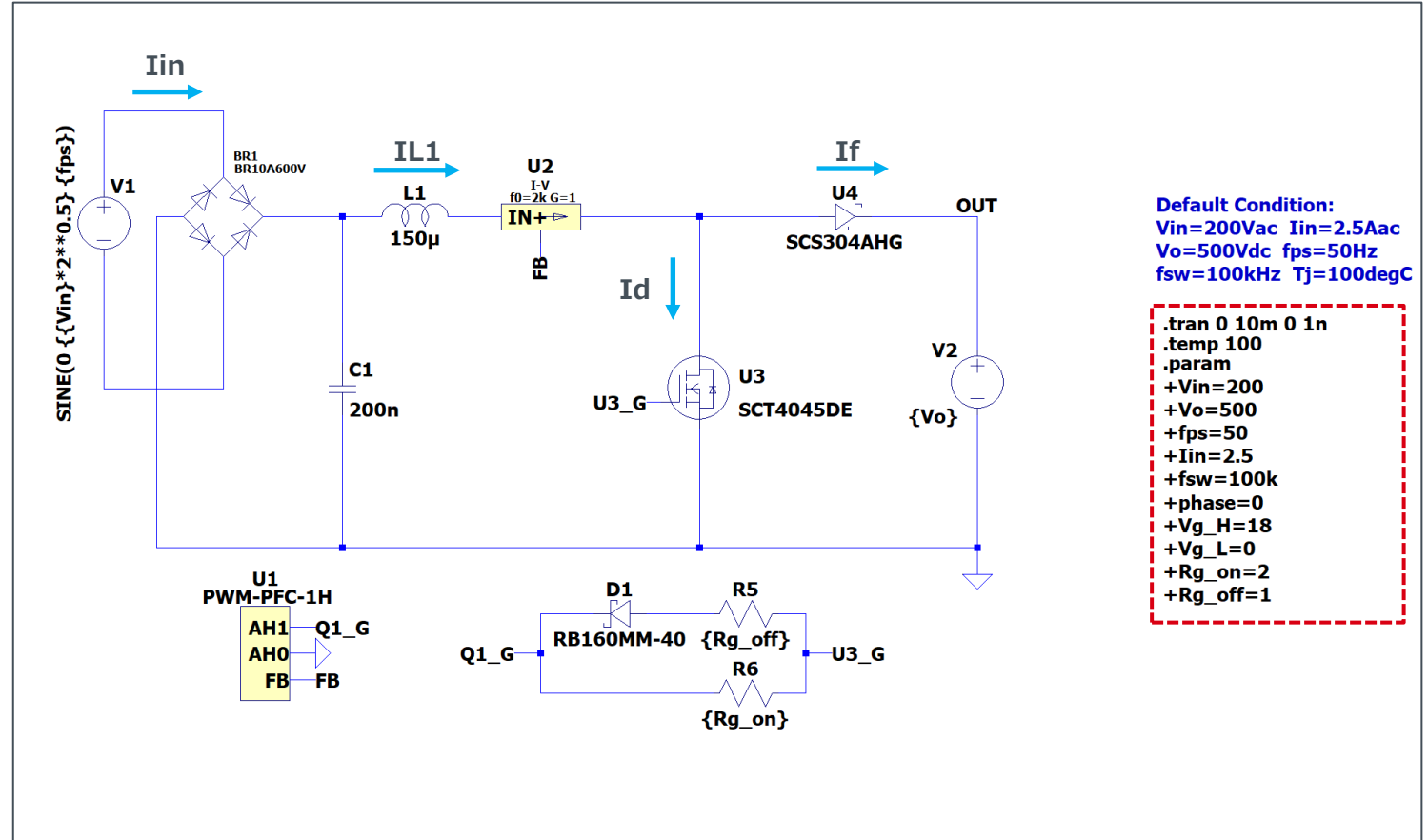
Simulation Parameters

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 Voltage High
Vg_L	V	Gate Voltage Low
Rg_on	Ω	Gate Resistance On
Rg_off	Ω	Gate Resistance Off

Components

Instance name	Type	Default
U3	SiC MOSFET	SCT4045DE
U4	SiC SBD	SCS304AHG
BR1	Diode Bridge	BR10A600V
D1	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

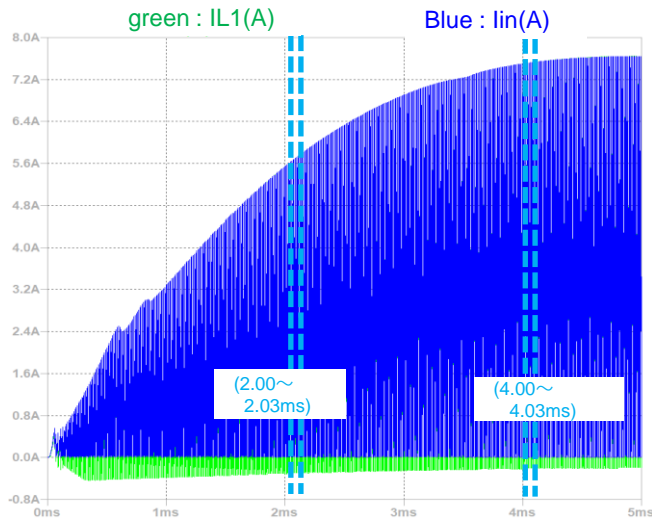
Simulation Result Waveform1

U3 : SiC MOSFET
SCT4045DE
U4 : SiC SBD
SCS304AHG

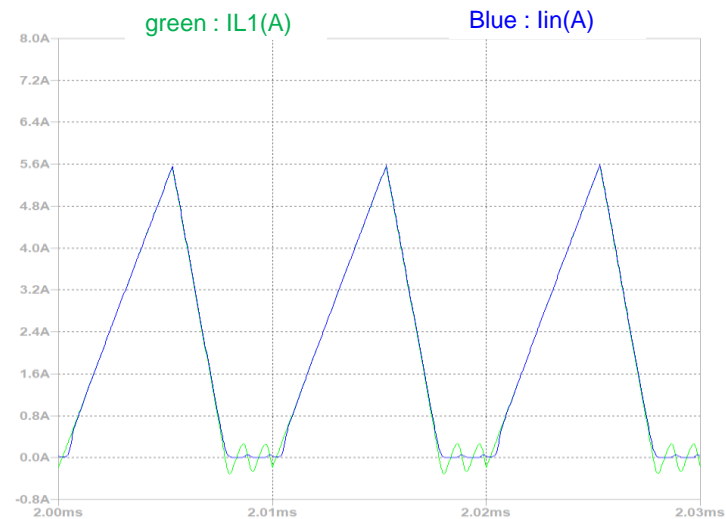
2025 Jan.
67UG113E Rev.001

IL1, lin

$V_{in}=200V$ $I_{in}=2.5A$
 $V_o=500V$ $T_j=100^{\circ}C$



Expansion (2.00~2.03ms)



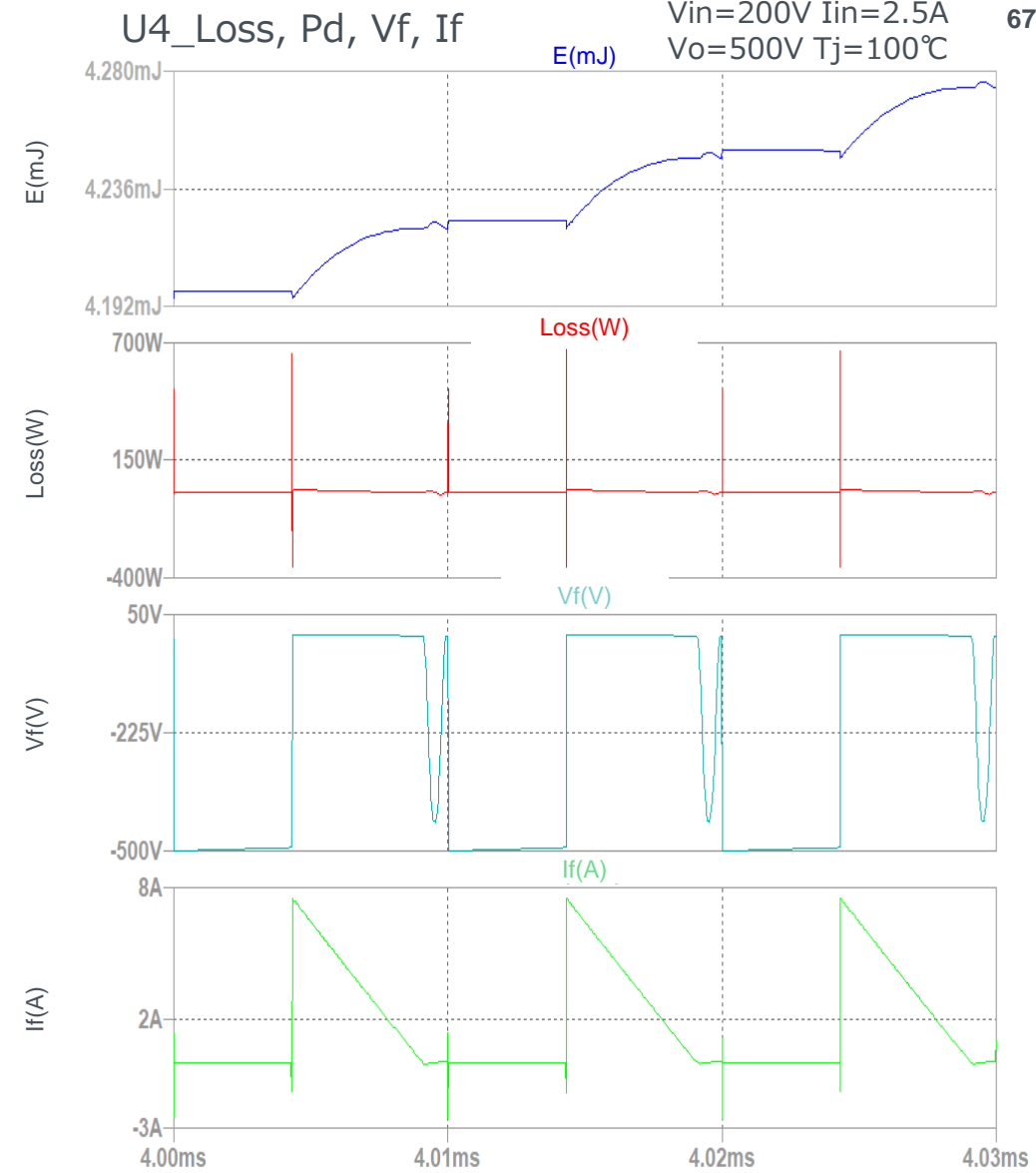
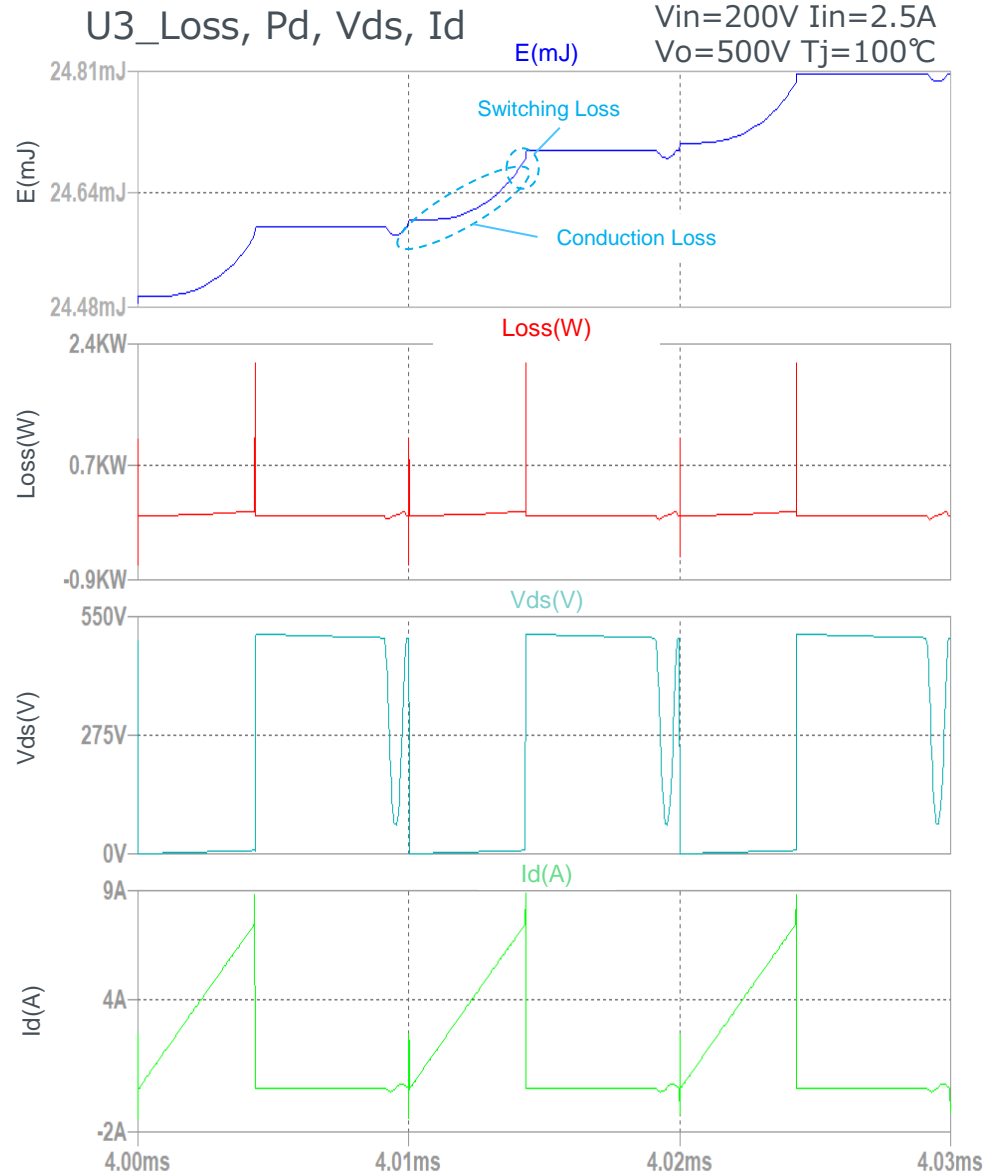
Expansion (4.00~4.03ms)



Simulation Result Waveform2



U3 : SiC MOSFET
SCT4045DE
U4 : SiC SBD
SCS304AHG



Default setting

Control Panel

Operation Hacks! Internet
Netlist Options Sym. & Lib. Search Paths Waveforms
Compression Save Defaults SPICE Drafting Options

Default Integration Method[*]
 trapezoidal
 modified trap
 Gear

Default DC solve strategy
 Noopiter
 Skip Gmin Stepping

Engine
Solver[*]: Alternate
Max threads: 12
Matrix Compiler: object code
Thread Priority[*]: medium

Gmin: 1e-12
Abstol: 1e-12
Reltol: 0.0001
Chgtol: 1e-14
Trtol[*]: 1
Volltol: 0.0001
Sstol: 0.0001
MinDeltaGmin: 1e-05

Accept 3K4 as 3.4K[*]
No Bypass[*]

[*] Setting remembered between program invocations.

Reset to Default Values

OK キャンセル ヘルプ

Edit Simulation Command

Transient AC Analysis DC sweep Noise DC Transfer DC op pnt Transient Frequency Response

Perform a non-linear, time-domain simulation.

Stop time: 10m
Time to start saving data: 0
Maximum Timestep: 1n

Start external DC supply voltages at 0V:
Stop simulating if steady state is detected:
Don't reset T=0 when steady state is detected:
Step the load current source:
Skip initial operating point solution:

Syntax: .tran <Tprint> <Tstop> [<Tstart> [<Tmaxstep>]] [<option> [<option>] ...]

.tran 0 10m 0 1n

Cancel OK

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