(A-021-DOT) DC-AC 3-Phase Vienna PFC

Vin=400Vac(L-L) Pin=33kW
Vout=800Vdc

LTspice® Demo Circuits Information

2025 November
68UG060E Rev.001

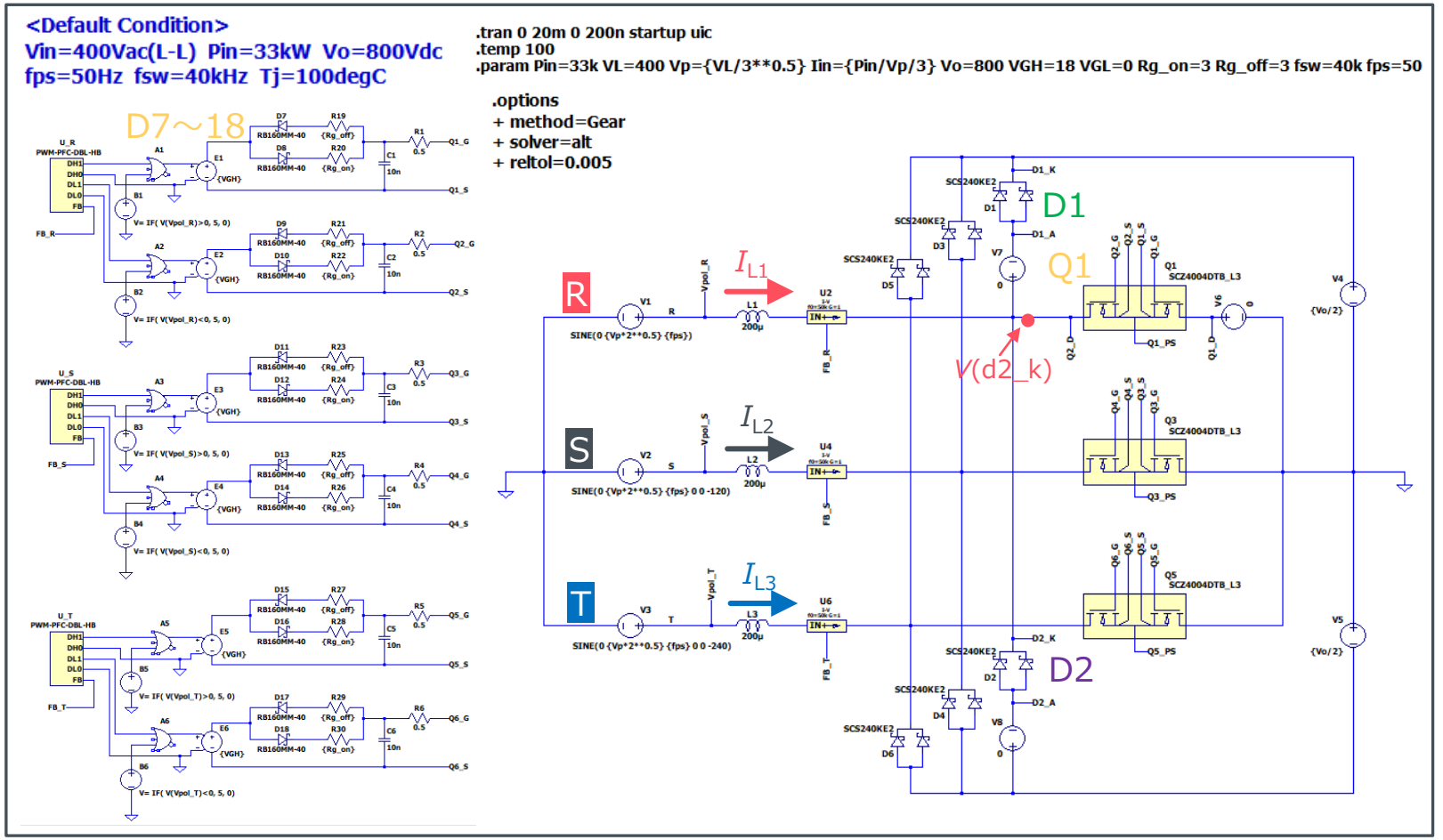
Simulation Parameters

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
VGH	V	Gate Drive Voltage High
VGL	V	Gate Drive Voltage Low
Rg_on	Ω	Gate Resistance On
Rg_off	Ω	Gate Resistance Off

Devices (Default)

Instance name	Type	Part No.
Q1, 3, 5	SiC MOSFET Module	SCZ4004DTB
D1～6	SiC Schottky Barrier Diodes	SCS240KE2
D7~18	Schottky Barrier Diodes	RB160MM-40

Simulation Schematic



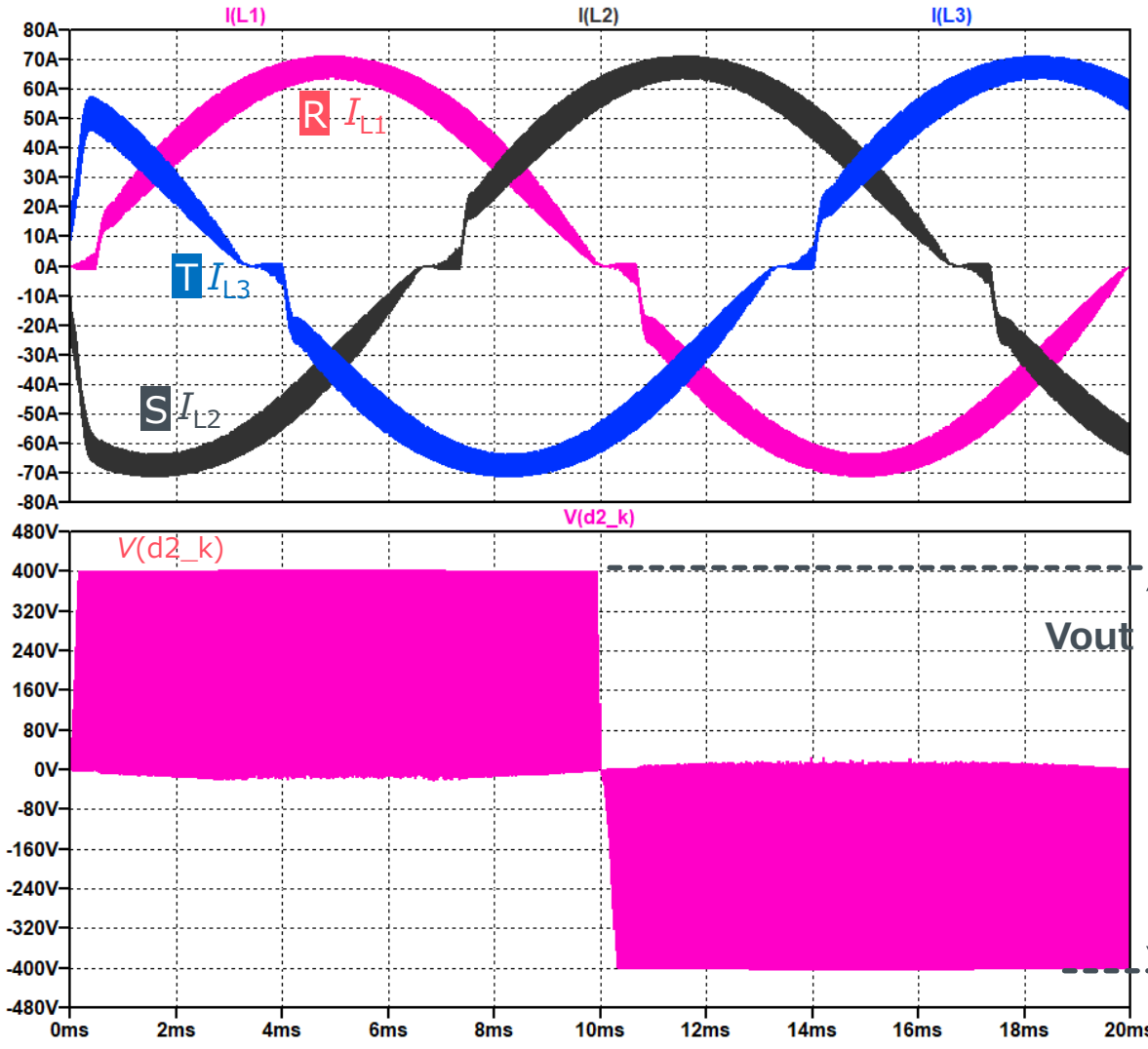
You can download and exchange other component models. See the link below for details.
How to Use LTspice® Models、Design Simulation Models：English version
LTspice®モデルの使い方、デザインモデル：日本語版

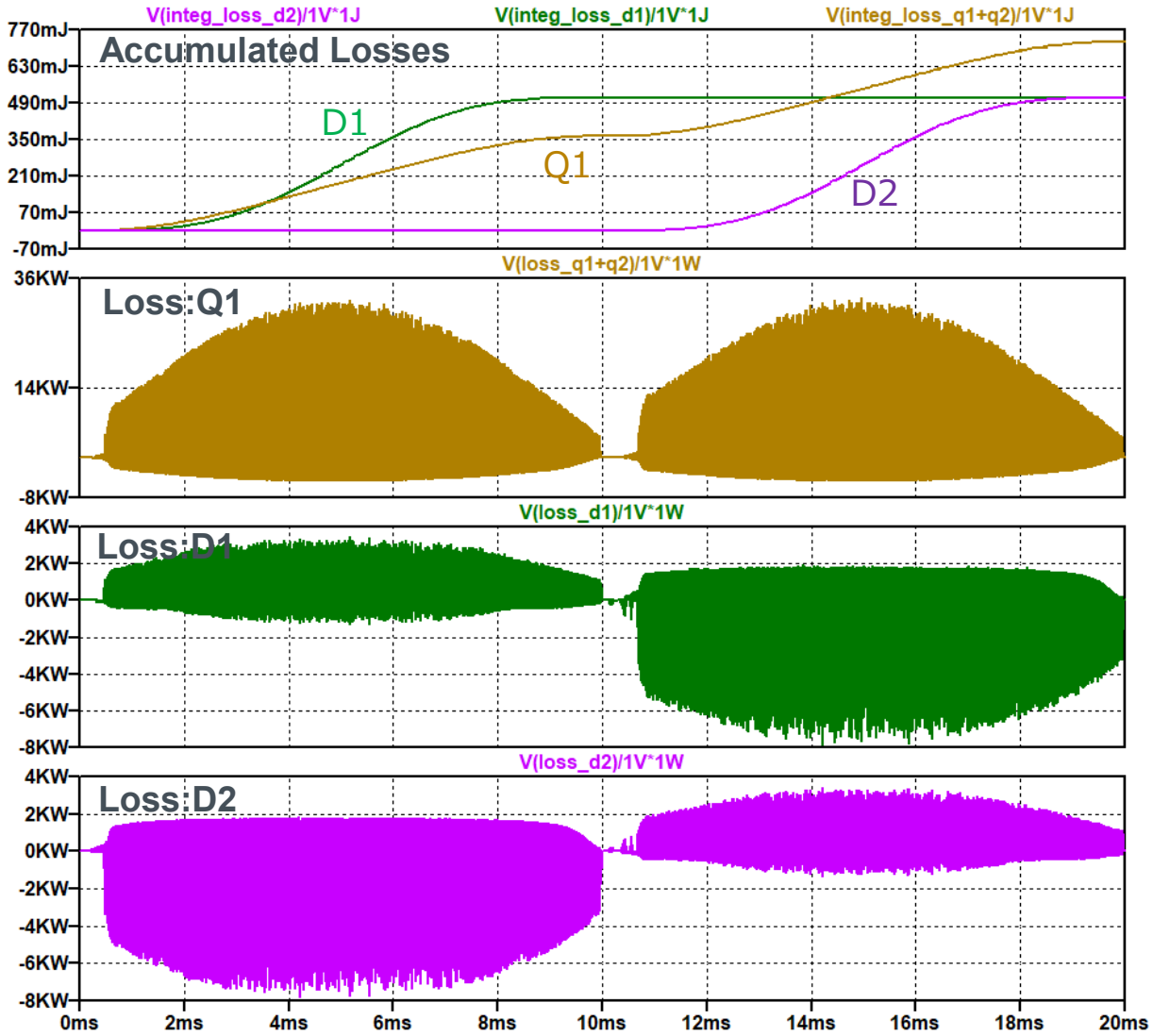
※LTspice® is a registered trademark of Analog Devices, Inc.

Simulation Results

Q1 : SCZ4004DTB (SiC MOSFET Module)
D1,D2 : SCS240KE2 (SiC Schottky Barrier Diode)

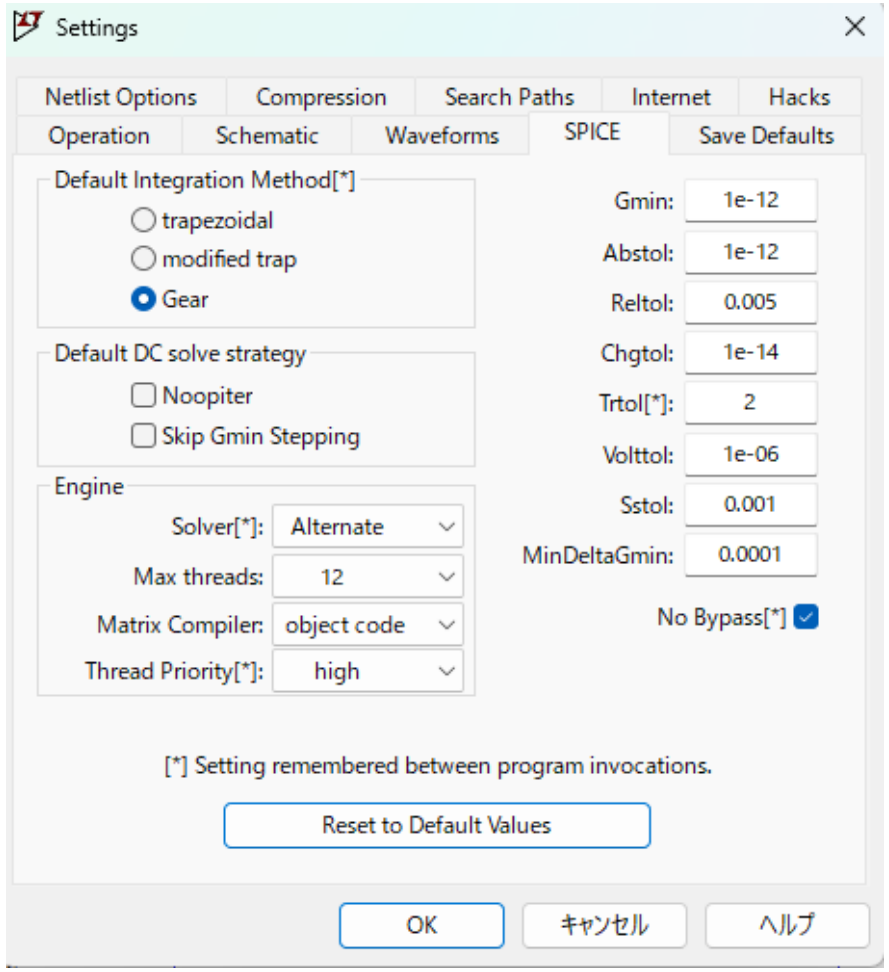
2025 November
68UG060E Rev.001

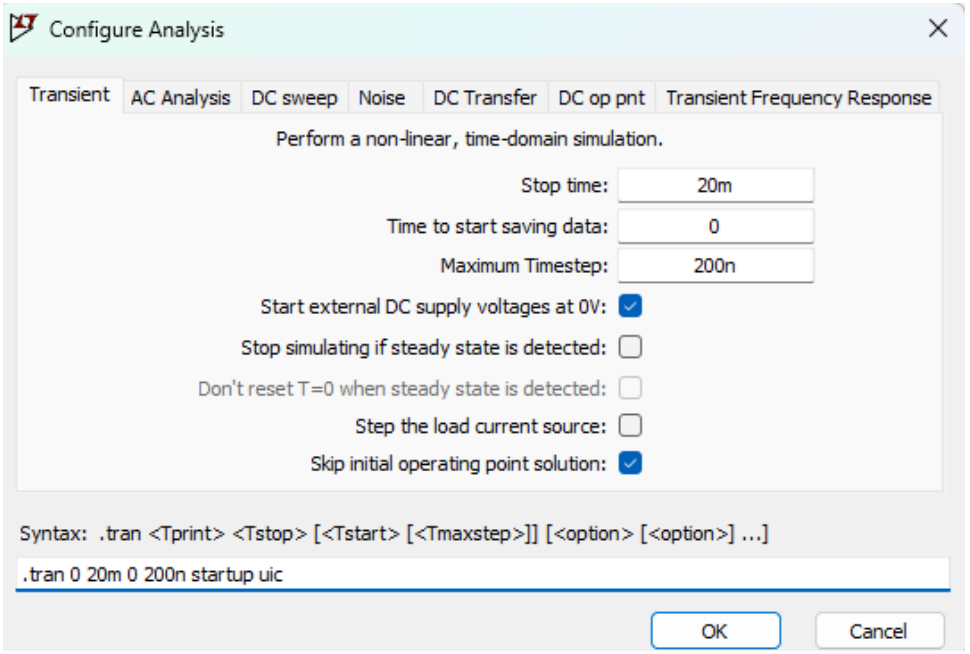




Default setting

2025 November
68UG060E Rev.001





(Note) LTspice version:24.1.9

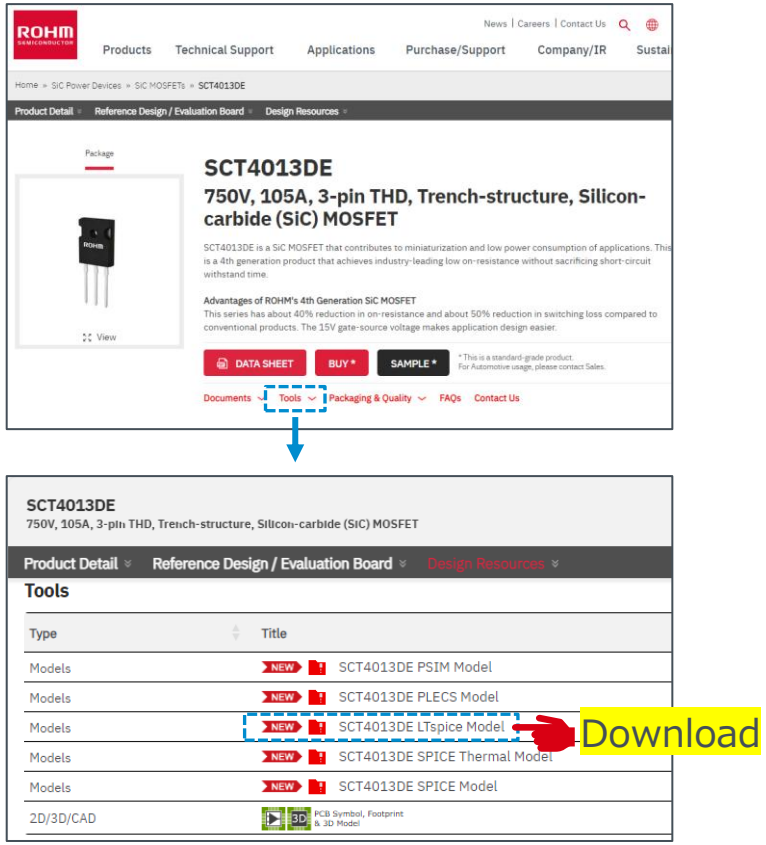
How to add (change) a new component

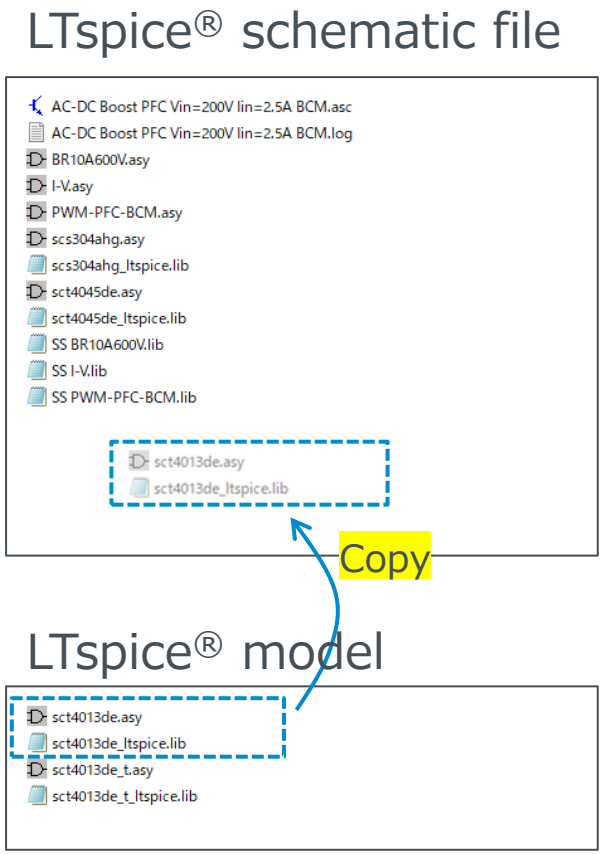
2025 November
68UG060E Rev.001

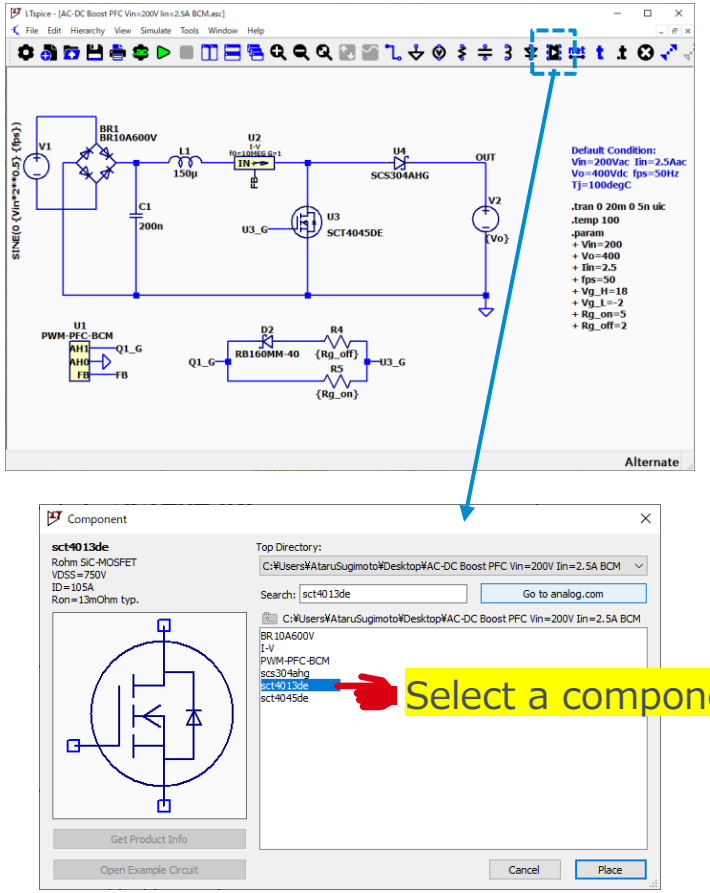
Download LTspice® model from ROHM website.

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.



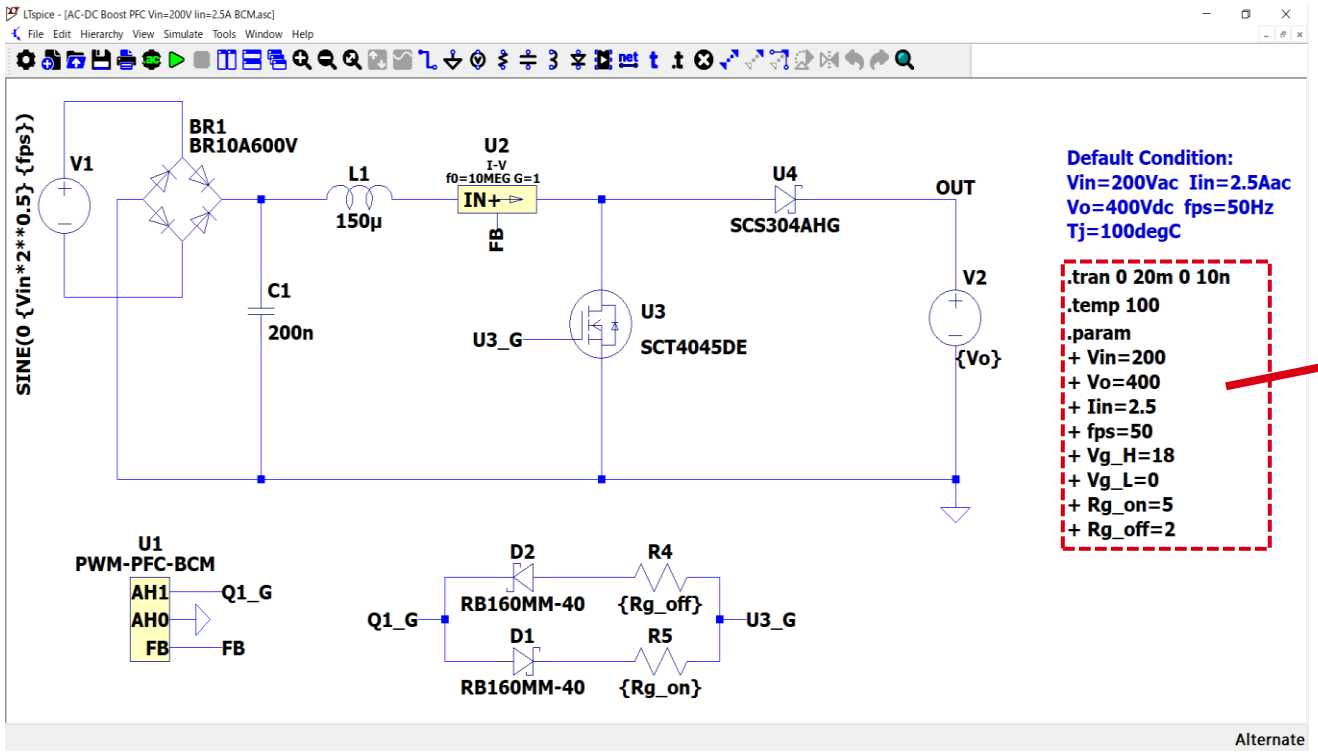


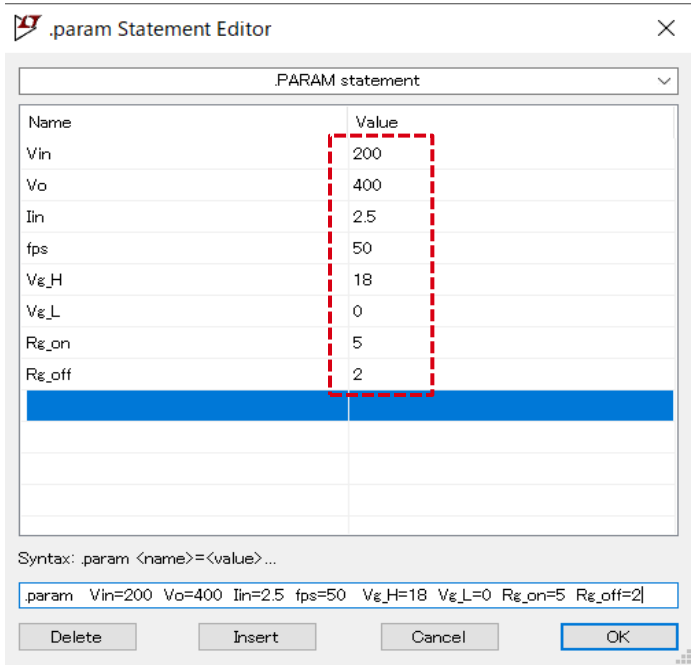


How to change the Simulation Conditions

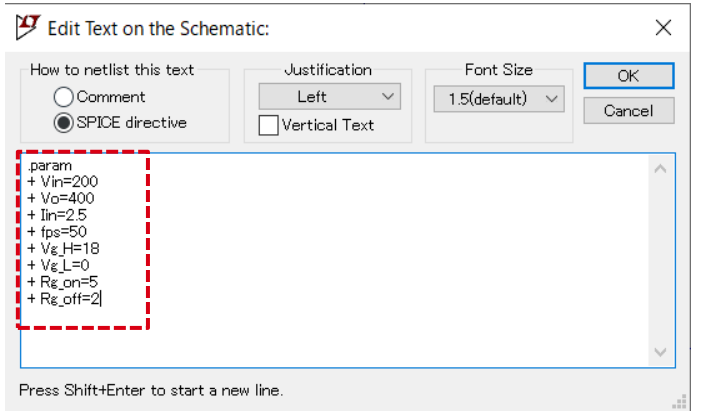
2025 November
68UG060E Rev.001

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.

Notice

1) The information contained in this document is intended to introduce ROHM Group (hereafter referred to asROHM) products. When using ROHM products, please verify the latest specifications or datasheets before use.

2) ROHM products are designed and manufactured for use in general electronic equipment and applications (such as Audio Visual equipment, Office Automation equipment, telecommunication equipment, home appliances, amusement devices, etc.) or specified in the datasheets. Therefore, please contact the ROHM sales representative before using ROHM products in equipment or devices requiring extremely high reliability and whose failure or malfunction may cause danger or injury to human life or body or other serious damage (such as medical equipment, transportation, traffic, aircraft, spacecraft, nuclear power controllers, fuel control, automotive equipment including car accessories, etc. hereafter referred to as Specific Applications). Unless otherwise agreed in writing by ROHM in advance, ROHM shall not be in any way responsible or liable for any damages, expenses, or losses incurred by you or third parties arising from the use of ROHM Products for Specific Applications.

3) Electronic components, including semiconductors, can fail or malfunction at a certain rate. Please be sure to implement, at your own responsibilities, adequate safety measures including but not limited to fail-safe design against physical injury, and damage to any property, which a failure or malfunction of products may cause.

4) The information contained in this document, including application circuit examples and their constants, is intended to explain the standard operation and usage of ROHM products, and is not intended to guarantee, either explicitly or implicitly, the operation of the product in the actual equipment it will be used. As a result, you are solely responsible for it, and you must exercise your own independent verification and judgment in the use of such information contained in this document. ROHM shall not be in any way responsible or liable for any damages, expenses, or losses incurred by you or third parties arising from the use of such information.

5) When exporting ROHM products or technologies described in this document to other countries, you must abide by the procedures and provisions stipulated in all applicable export laws and regulations, such as the Foreign Exchange and Foreign Trade Act and the US Export Administration Regulations, and follow the necessary procedures in accordance with these provisions.

6) The technical information and data described in this document, including typical application circuits, are examples only and are not intended to guarantee to be free from infringement of third parties intellectual property or other rights. ROHM does not grant any license, express or implied, to implement, use, or exploit any intellectual property or other rights owned or controlled by ROHM or any third parties with respect to the information contained herein.

7) No part of this document may be reprinted or reproduced in any form by any means without the prior written consent of ROHM.

8) All information contained in this document is current as of the date of publication and subject to change without notice. Before purchasing or using ROHM products, please confirm the latest information with the ROHM sales representative.

9) ROHM does not warrant that the information contained herein is error-free. ROHM shall not be in any way responsible or liable for any damages, expenses, or losses incurred by you or third parties resulting from errors contained in this document.

ROHM SEMICONDUCTOR

Thank you for your accessing to ROHM product informations.
More detail product informations and catalogs are available, please contact us.

ROHM Customer Support System

https://www.rohm.com/contactus