PSpice Model
Buck-Boost DC/DC Controller
Analog Devices
LT8705AMPFE

Model Information

Model	A macro model
Call Name	MDC_LT8705AMPFE_PS
Pin Assign	1:INTVcc 2:MODE 3:IMON_IN 4:_SHDN 5:CSN 6:CSP 7:LDO33 8:FBIN 9:FBOUT 10:IMON_OUT 11:VC 12:SS 13:CLKOUT 14:SYNC 15:RT 16:GND 17:BG1 18:GATEVcc 19:BG2 20:BOOST2 21:TG2 22:SW2 23:SW1 24:TG1 25:BOOST1 26:EXTVcc 27:CSNOUT 28:CSPOUT 29:CSNIN 30:CSPIN 31:VIN
File List	Model Library MDC_LT8705AMPFE_PS01.lib Model Report MDC_LT8705AMPFE_PS.pdf(this file)

Verified Simulator Version PSpice 17.4

References

The information which was used for modeling is as follow:

[Data Sheet]

- ●Date/Version
- ●Product name LT8705AMPFE
- ●Company name Analog Devices

[Characteristics listed]

- ●Characteristics EXTVcc Switchover Voltage, INTVcc Current Limit, INTVcc Voltage, INTVcc UVLO, LDO33 Pin Voltage, LDO33 Pin UVLO, SHDN Input Voltage High, Soft-Start Current, Regulation Voltage for FBOUT, TG1/TG2 Rise/Fall Time, BG1/BG2 Rise/Fall time, Switch Frequency Range, Switch Frequency, CLKOUT Output Voltage High/Low, CLKOUT Duty Cycle, CLKOUT Rise/Fall time, CLKOUT Phase Delay

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

Switching Regulator

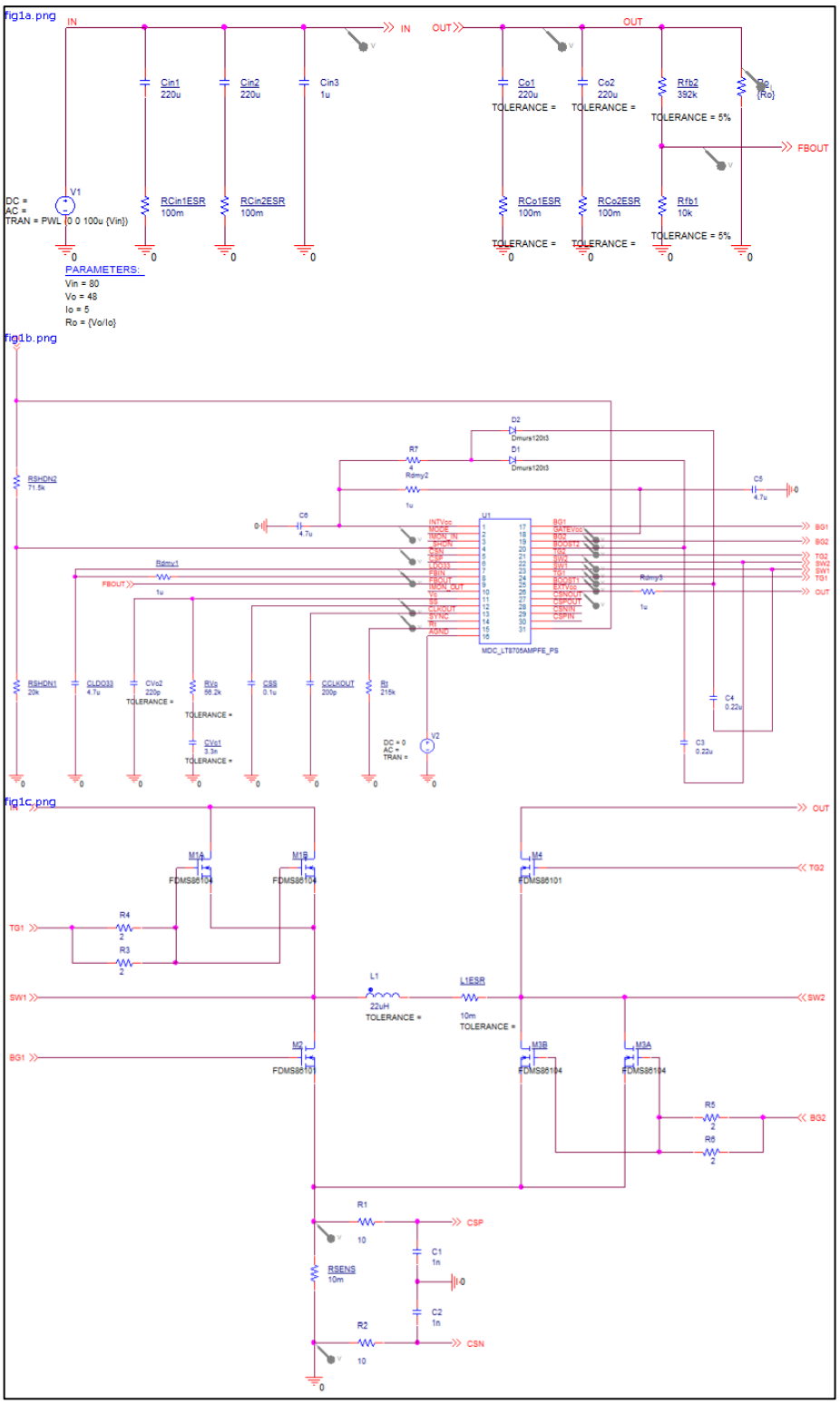
○ : Implemented
× : Not Implemented
— : Not applicable

Model Functions Table

	RANK=1	
Functions	**RANK**	**Implemented**
Control Method (only PWM)	1	○
Enable Function	1	○
Soft Start	1	○
Line Regulation	1	○
Load Regulation	1	○
Synchronous External Oscillation	1	–
UVLO of EXTVcc pin	1	○
INTVcc of UVLO	1	○
Shutdown function	1	○
FBIN regulation	1	–
FBOUT regulation	1	–
Current regulation	1	–
Mode selection	1	–

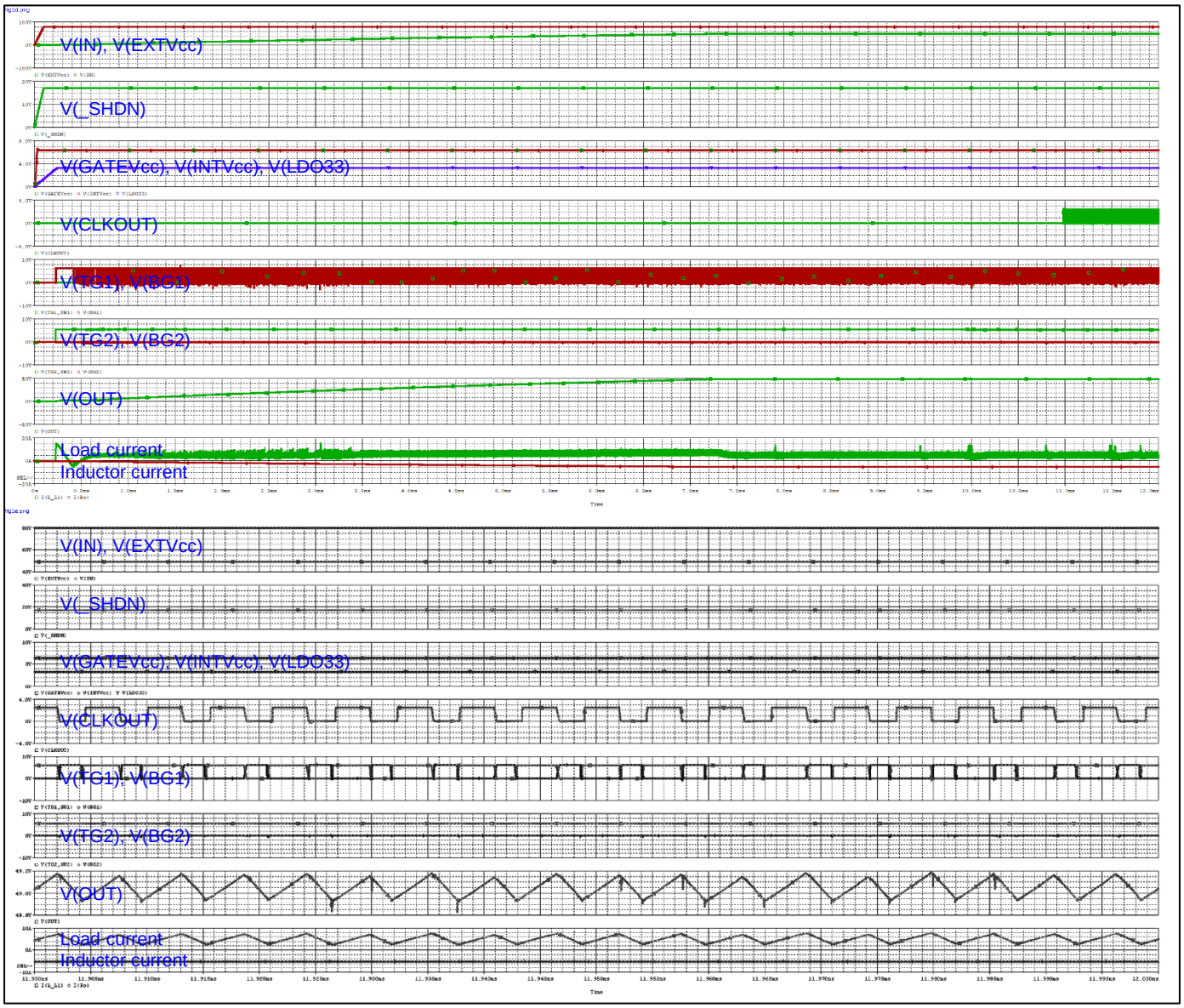
Testbench for BUCK converter function (Vin=80V Vout=48V Iout=5A)

Referred to Data Sheet



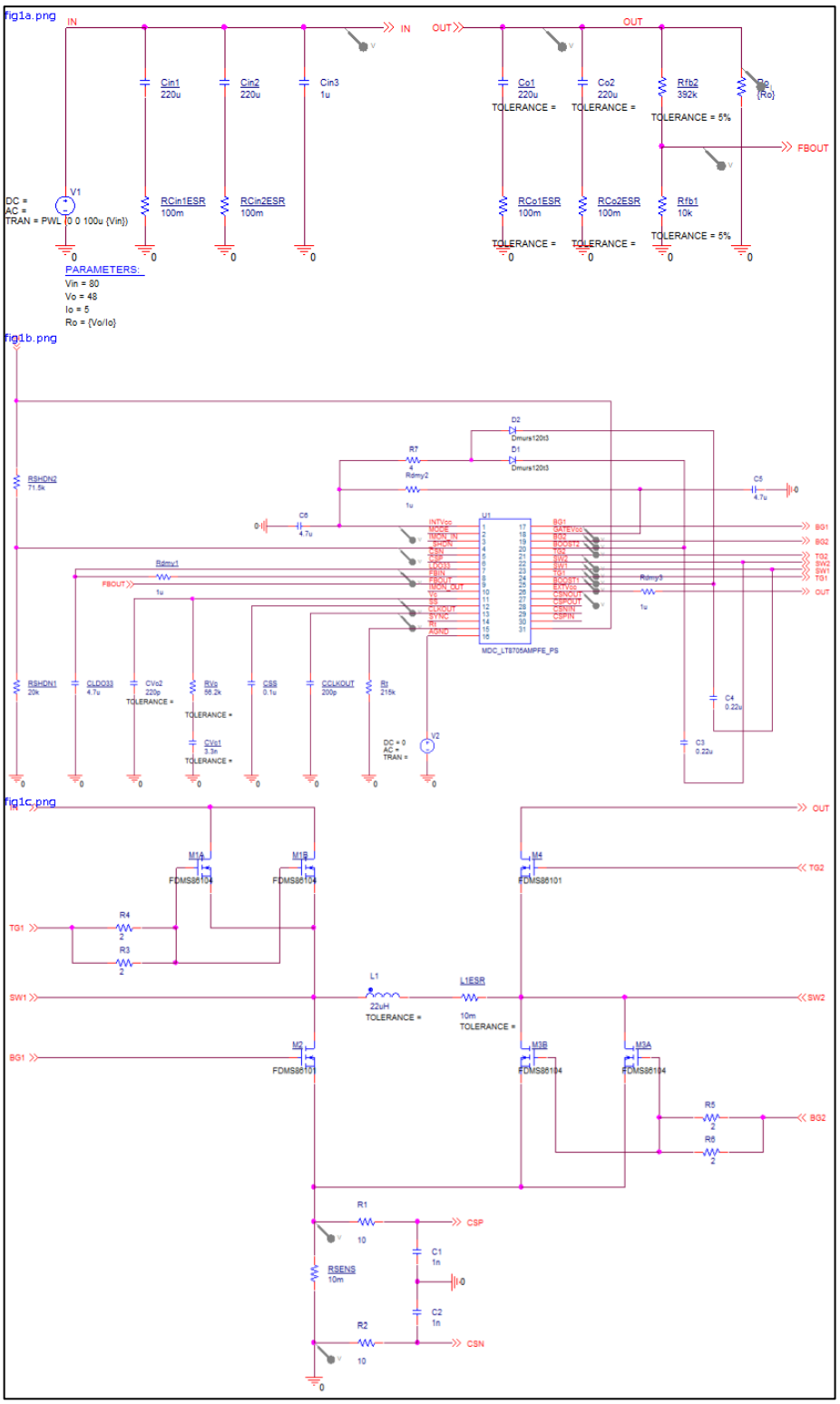
Testbench for BUCK converter function (Vin=80V Vout=48V Iout=5A)

Referred to Data Sheet



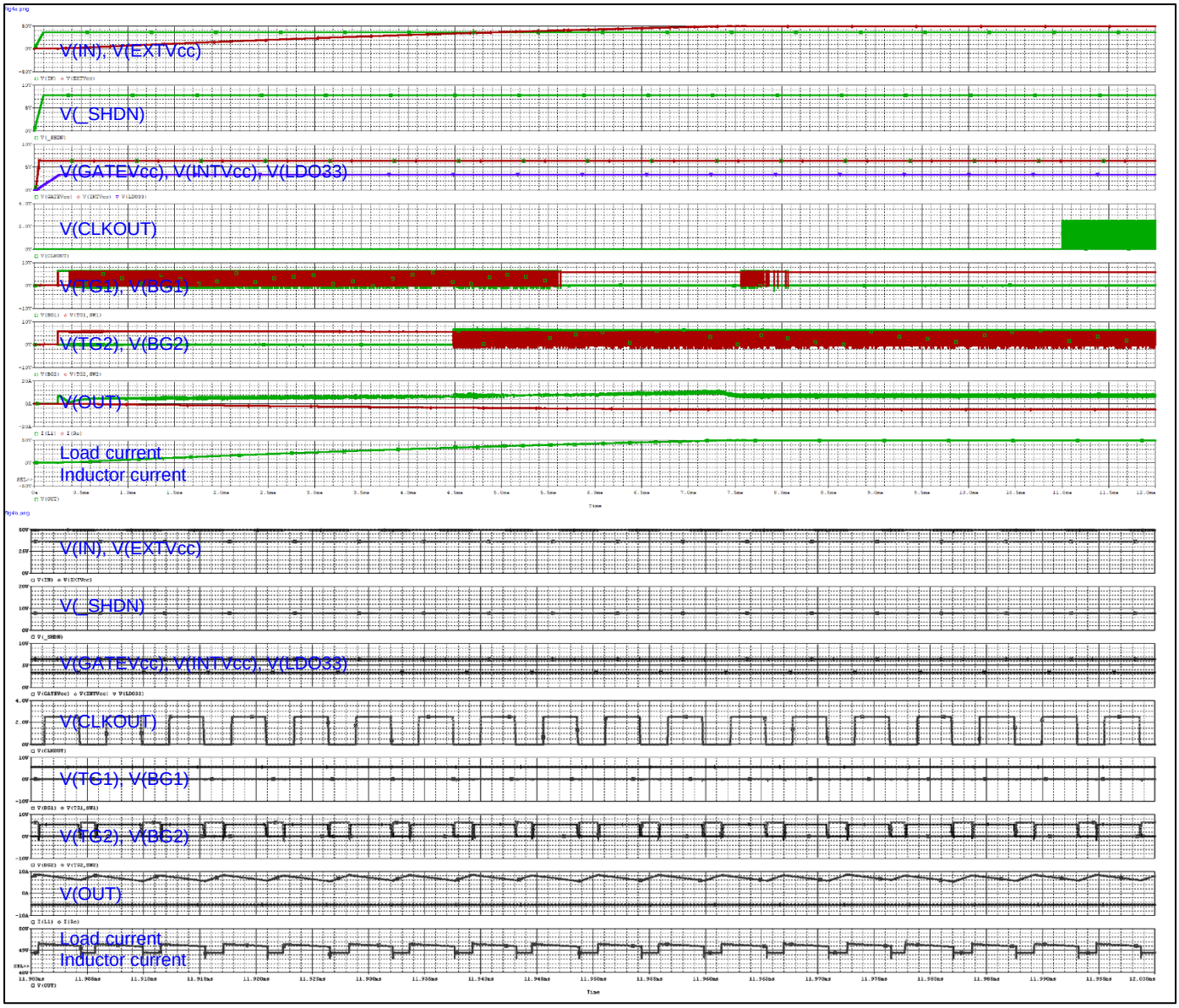
Testbench for BOOST converter function (Vin=36V Vout=48V Iout=5A)

Referred to Data Sheet



Testbench for BUCK converter function (Vin=80V Vout=48V Iout=5A

Referred to Data Sheet



DISCLAIMER

1. This SPICE (Simulation Program with Integrated Circuit Emphasis) model and its content (the “Contents”) are copyright of MoDeCH Inc. All rights reserved. Any redistribution or reproduction of any or all part of the Contents in any form is prohibited without express written permission made by MoDeCH Inc.
2. MoDeCH Inc. as licensor (the” Licensor”) hereby grants to you, as licensee (the “Licensee”), a non-exclusive, non-transferable license to use the Contents as long as you abide by the terms and conditions of this DISCLAIMER.
3. The Licensee is not authorized to sell, loan, rent and redistribute or license the Contents in whole or in part, or in modified form, to anyone.
4. The Licensor shall in no way be liable to the Licensee or any third party for any loss or damage (including ,but not limited to, lost profits, or other incidental, consequential, or punitive damages), however caused (including through negligence) which may be directly or indirectly suffered from, arising out of, or in connection with, any use of the Contents .
5. Notwithstanding anything contained in this DISCLAIMER, in no event shall Licensor be liable for any claims, damages or loss which may arise from the modification, combination, operation or use of the Contents with the Licensee’s computer programs.
6. The Licensor does not warrant that the Contents will function in any environment.
7. The Contents may be changed or updated without notice. MoDeCH Inc. may also make improvements and/or changes in the products, pricing and/or the programs related to the Contents at any time without notice.

Modeling Design Technology

MoDeCH Inc.

Head Office
Location: 5-15 Yokoyama-cho, Hachioji-Shi, Tokyo 192-0081, Japan
Tel:+81-42-656-3360
E-Mail:model-on-support@modech.co.jp
URL:http://www.modech.com/en/