LTspice Model
PWM Converter
ROHM
BM2P054

Model Information

Model	A macro model
Call Name	MDC_BM2P054_LT
Pin Assign	1:SOURCE 2:NC 3:GND 4:FB 5:VCC 6:DRAIN 7:DRAIN
File List	Model Library MDC_BM2P054_LT.lib
	Model Report MDC_BM2P054_LT.pdf(this file)

Verified Simulator Version   LTspice XVII

Note   Recommend to use METHOD=Gear

References
The information which was used for modeling is as follow:

[Data Sheet]
- Date/Version   Oct.2013/Rev.001
- Product name   BM2PXX4 Series
- Company name   ROHM Co., Ltd.

[Characteristics listed]
- Characteristics

Transient(Soft Start)
VCC Charge
Bast Mode

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

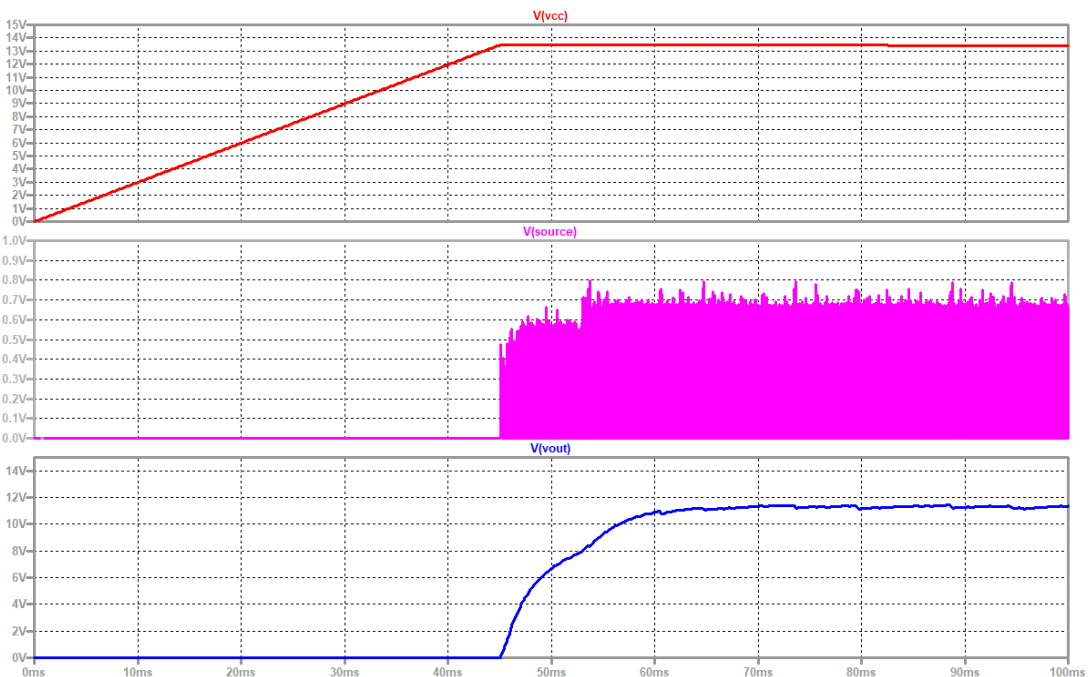| Functions	RANK=1	
	RANK	Implemented
Control　Method(PWM,PFM)	1	◯
Enable Function	1	◯
Soft Start	1	◯
Line Regulation	1	◯
Load Regulation	1	◯
Synchronous External Oscillation	1	—
UVLO	1	◯
Line Transient	2	✕
Load Regulation	2	✕
Light Load Current Mode	2	✕
Spread Spectrum	2	✕
Over Current Protection	2	✕
Over Voltage Protection	2	✕
Brown IN/OUT Function	—	—
ZT Pin OVP Function	—	—

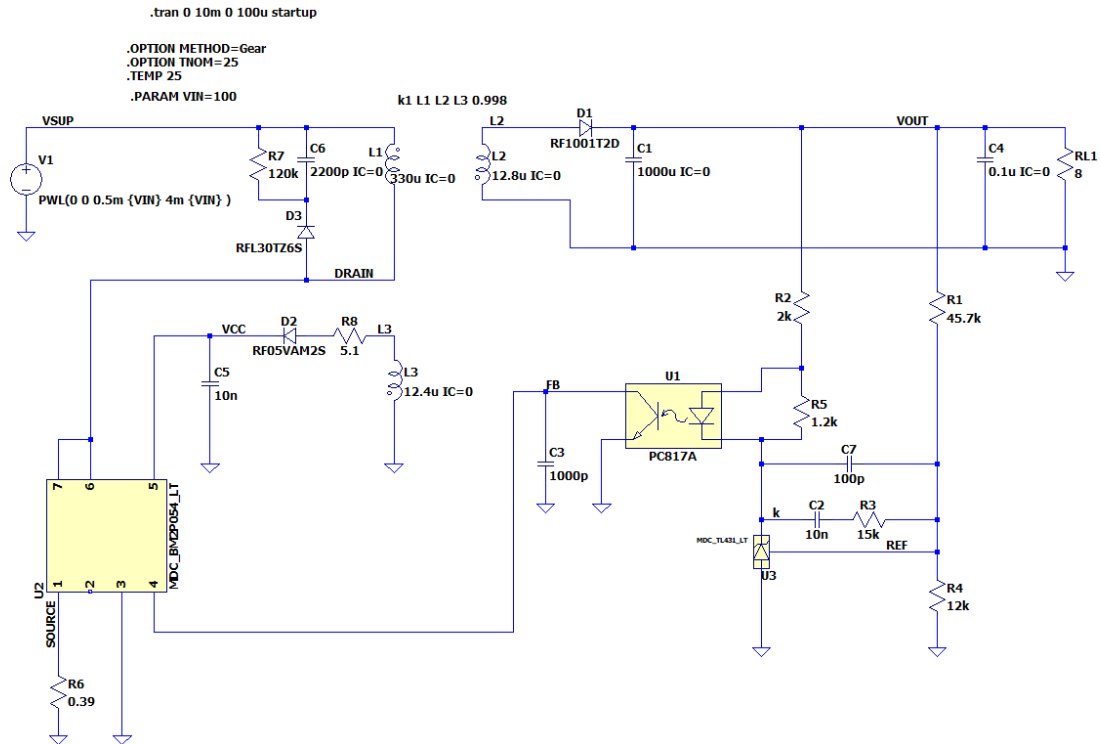**Transient(Soft Start) Testbench**

Referred to Data Sheet
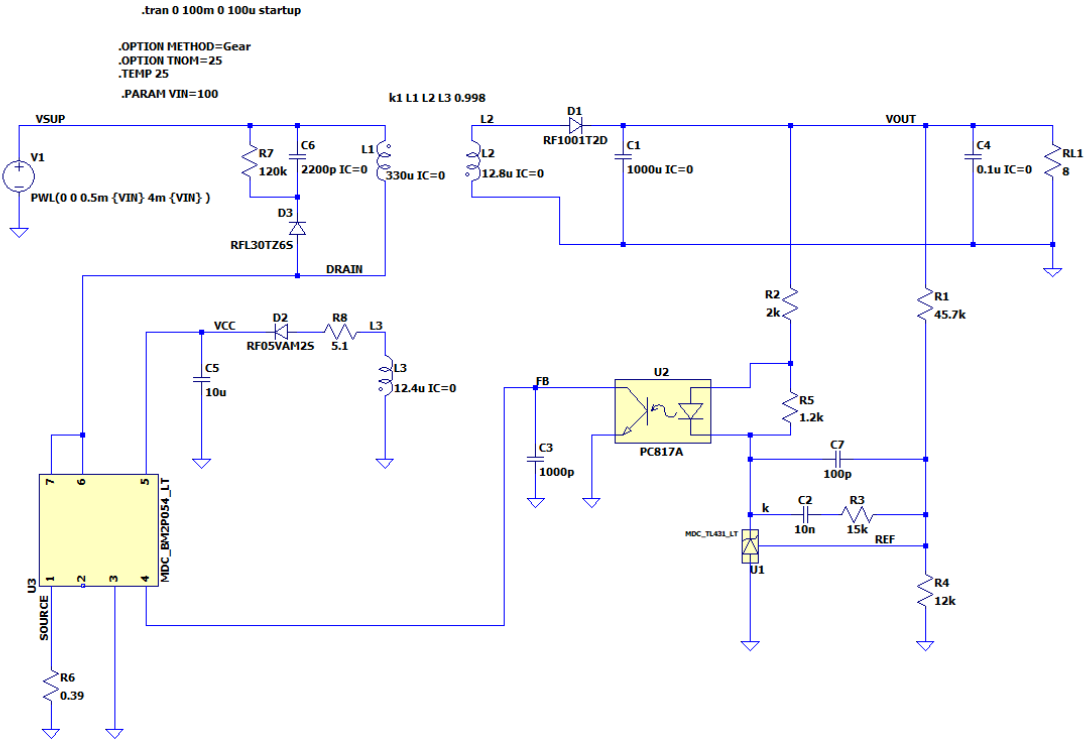
Simulation results are following.
Explanatory notes ― : simulated

Transient(Soft Start)
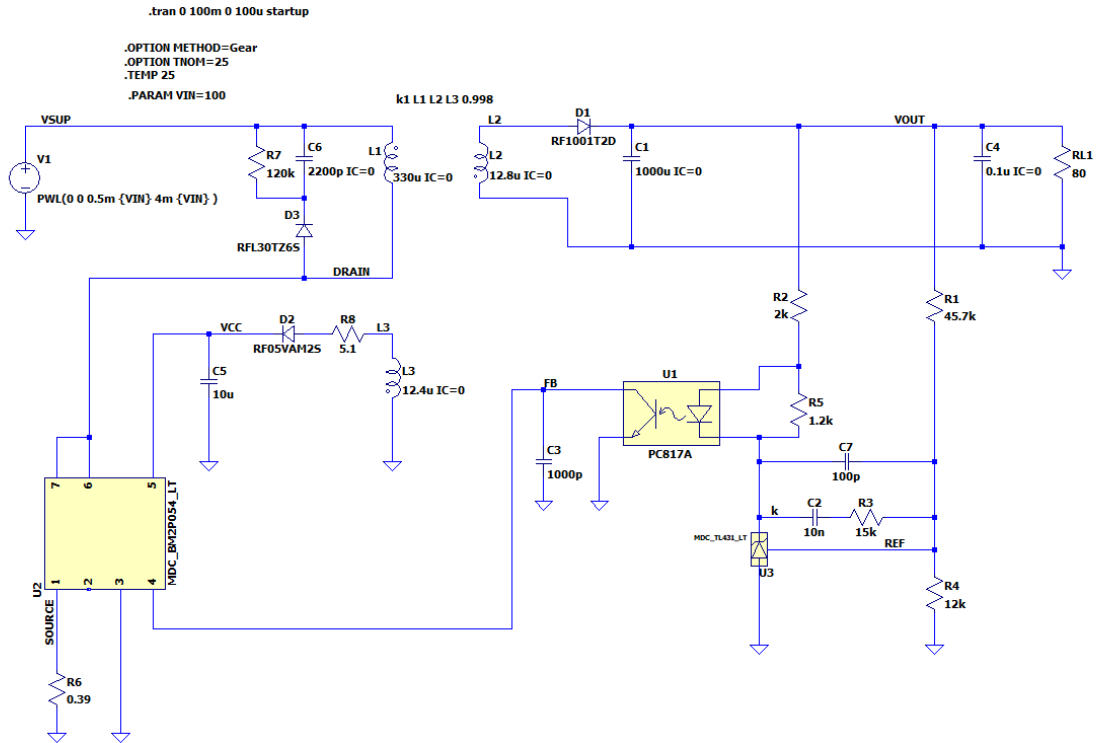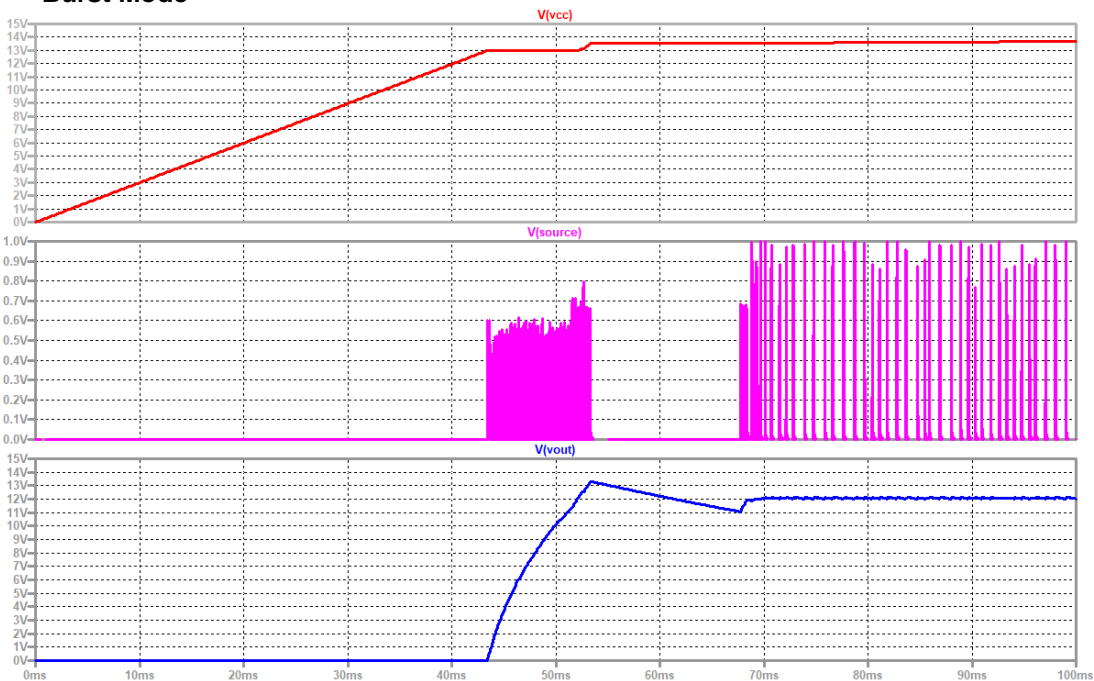
VCC Charge TestBench

Referred to Data Sheet

.tran 0 10m 0 100u startup

.OPTION METHOD=Gear
.OPTION TNOM=25
.TEMP 25
.PARAM VIN=100

k1 L1 L2 L3 0.998

VSUP

V1

PWL(0 0 0.5m {VIN} 4m {VIN})

R7 120k
C6 2200p IC=0
L1 330u IC=0
D3 RFL30TZ6S
DRAIN

L2
L2 12.8u IC=0
D1 RF1001T2D
C1 1000u IC=0
VOUT
C4 0.1u IC=0
RL1 8

R2 2k
R1 45.7k

VCC
D2 RF05VAM2S
R8 5.1
L3
C5 10n
L3 12.4u IC=0

FB
C3 1000p

U1
PC817A

R5 1.2k

C7 100p

MDC_TL431_LT

k
C2 10n
R3 15k
REF

U3

R4 12k

U2
7 6 5
1 2 3 4
MDC_BM2P054_LT
SOURCE
R6 0.39

Simulation results are following.
Explanatory notes   ― : simulated

VCC Charge

V(vcc)

Burst Mode Testbench

Referred to Data Sheet

.tran 0 100m 0 100u startup

.OPTION METHOD=Gear
.OPTION TNOM=25
.TEMP 25
.PARAM VIN=100

Simulation results are following.
Explanatory notes　　 ― : simulated

Burst Mode

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