

LTspice Model

High-side Driver

STMicroelectronics

VN7040ASTR

Model Information

Model A macro model
Call Name VN7040ASTR
Pin Assign 1:INPUT 2:SEn 3:GND 4:MultiSense 5:VCC 6:OUTPUT 7:OUTPUT 8:VCC
File List Model Library MDC_VN7040ASTR_LT.lib
 Model Report MDC_VN7040ASTR_LT.pdf(this file)

Verified Simulator Version LTspice version XVII

Note

References

The information which was used for modeling is as follow:

- [Data Sheet]
- Date/Version 04-Apr-2019
 - Product name VN7040ASTR
 - Company name STMicroelectronics N.V.

- [Characteristics listed]
- Characteristics UVLO
Overvoltage Clamp
Current limitation

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

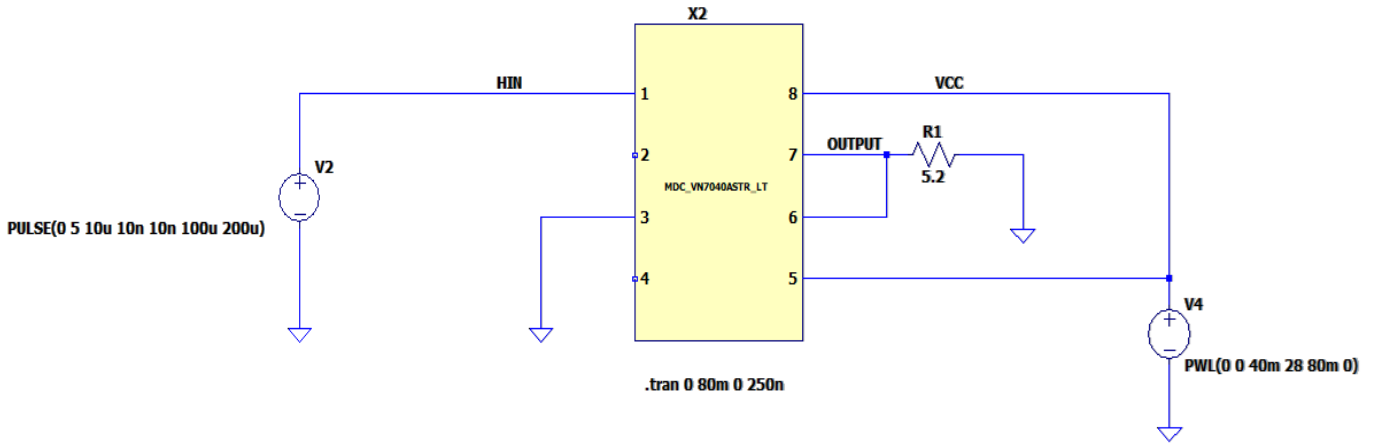
Model Functions Table

Functions	Implemented
Undervoltage shutdown	○
Overvoltage clamp(46V)	○
Load current limitation(34A)	○
Self limiting of fast thermal transients	※1
MultiSense diagnostic functions	※2
Sense enable/disable	○

※1 The temperature coefficient is unknown, shutdown is performed after a certain time has elapsed after reaching the current limit.

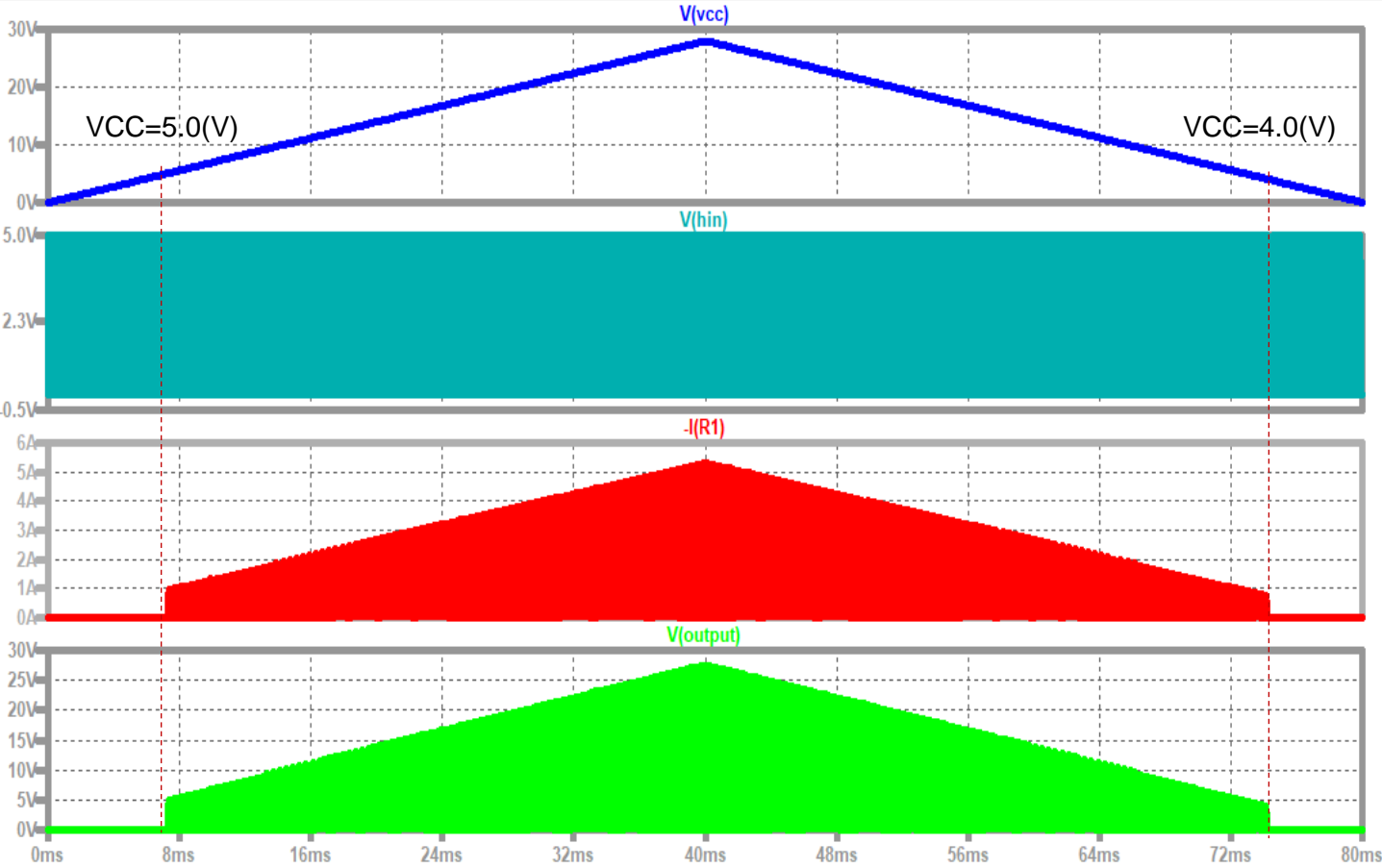
※2 Only for overcurrent shutdown.

UVLO Testbench
Referred to Data Sheet

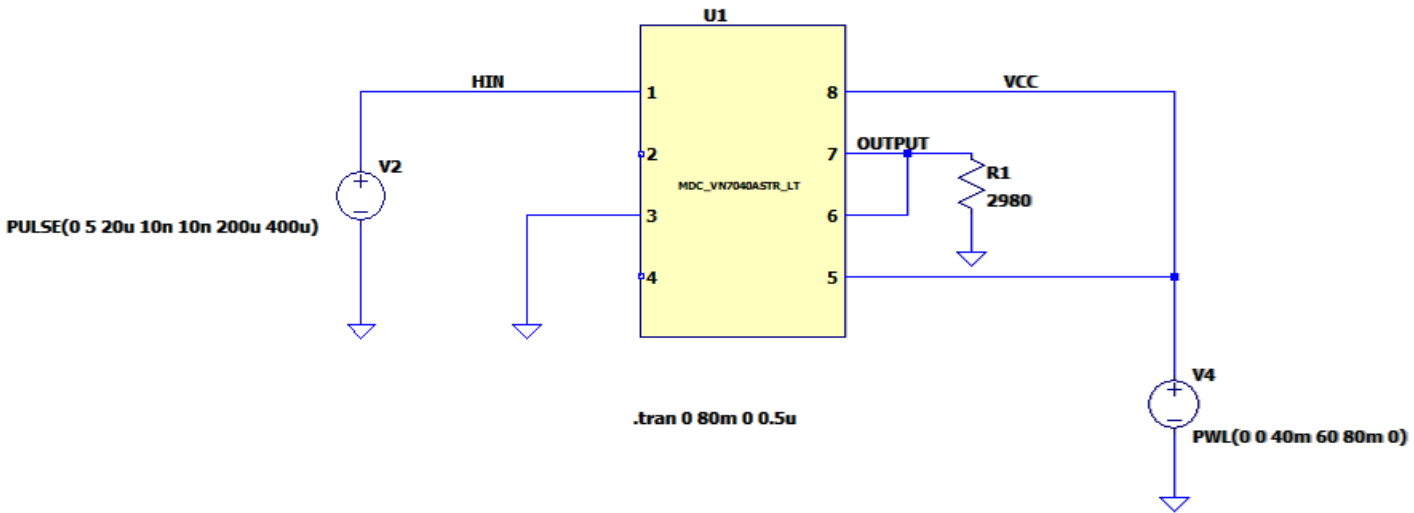


Simulation results are following.
Explanatory notes — : simulated

UVLO

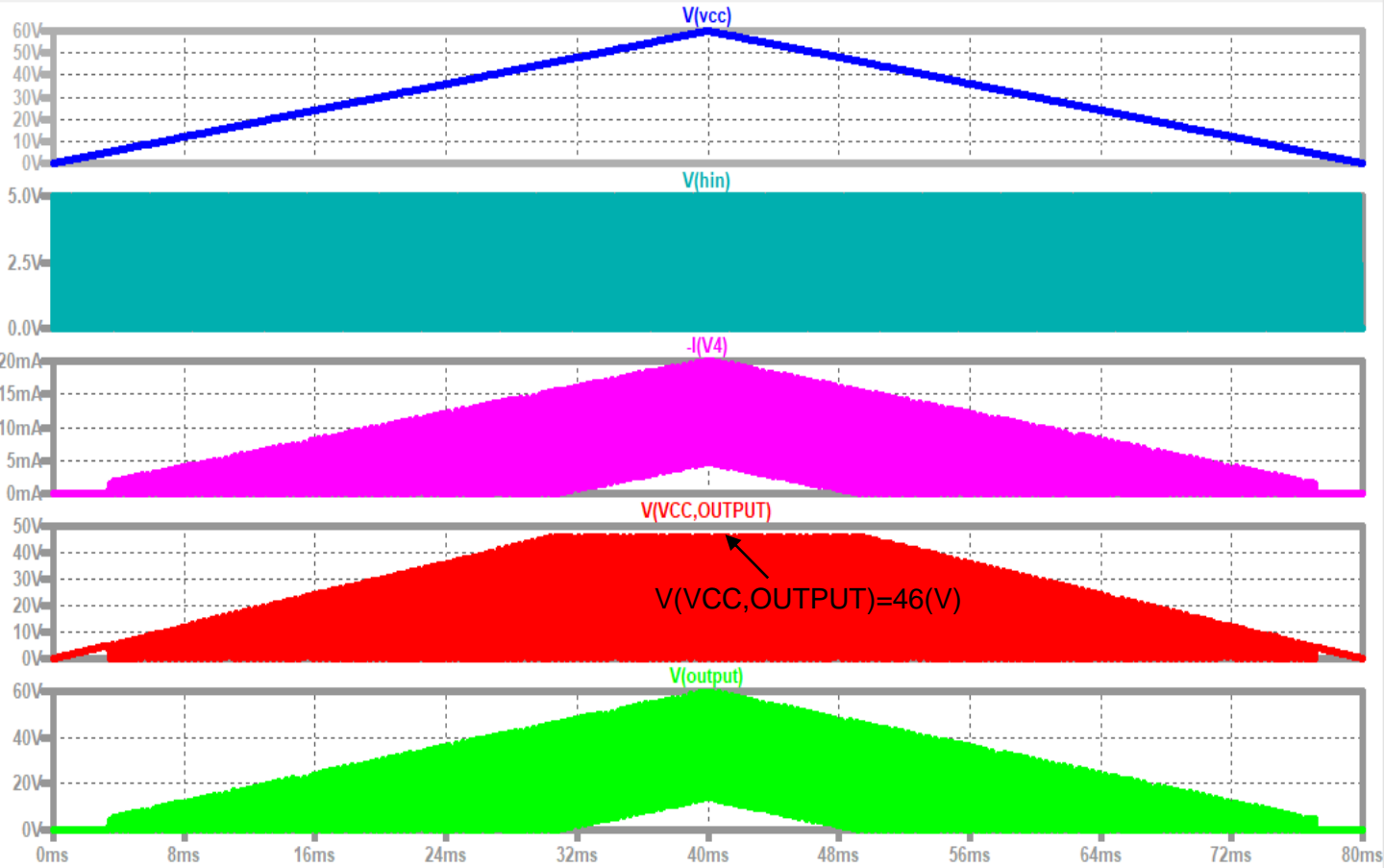


Overvoltage Clamp Testbench
Referred to Data Sheet



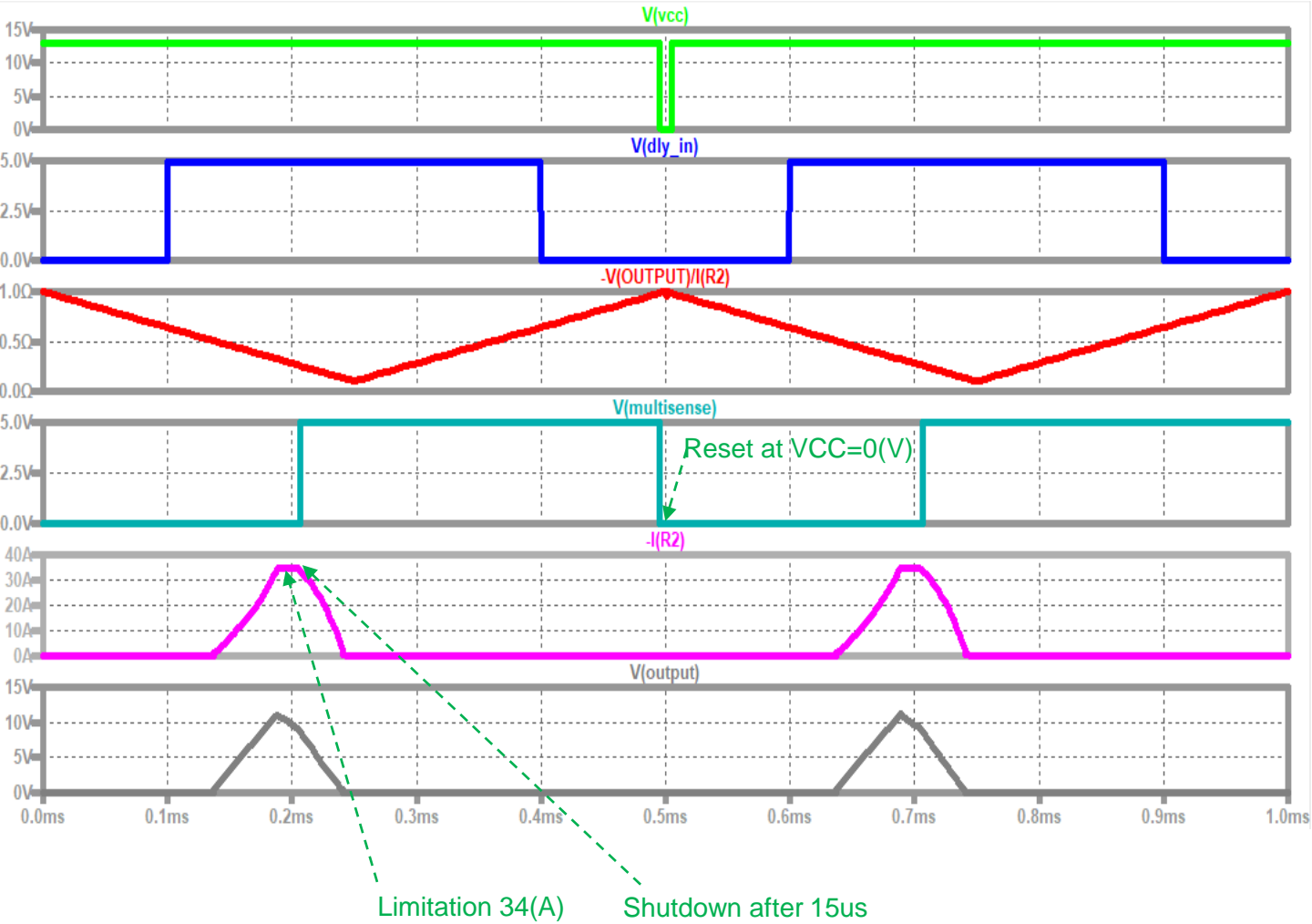
Simulation results are following.
Explanatory notes — : simulated

Overvoltage Clamp



Simulation results are following.
Explanatory notes — : simulated

Current limitation



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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/>