

Introduction to Simulation Model

LITIX™ Basic+ TLD2252-2EP

About this document

Scope and purpose

This document outlines LITIX™ Basic+ TLD2252-2EP main features by means of its digital twin, referred as simulation model, in typical application setups aiming to be an easy, time efficient and cost reduction solution for exploring device capabilities and integration in complex applications.

Information covered in this document does not substitute datasheet content and shall be regarded as complementary to it. For a more precise description of the device and its features, please consult the latest datasheet.

Intended audience

This application note along with the simulation model itself offers an interactive solution targeted for anybody who aims to explore the functionality and “what if” scenarios for **TLD2252-2EP** device.

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1 LITIX™ Basic+ TLD2252-2EP

The LITIX™ Basic+ TLD2252-2EP is a dual channel high-side driver IC with integrated output stages. It is designed to control LEDs with a current up to 120 mA. In typical automotive applications the device is capable of driving 3 red LEDs per chain (total 6 LEDs) with a total current of 100 mA and even above, if not limited by the overall system thermal properties. Practically, the output current is controlled by an external resistor or reference source, independently from load and supply voltage changes.

The available online circuits are listed below:

- 12V Automotive LED Driver IC TLD2252-2EP LITIX™ Basic+ Application circuit Dimming via PWMI with STOP/TAIL function
- 12V Automotive LED Driver IC TLD2252-2EP LITIX™ Basic+ Short circuit fault management

[Click here to open the circuits.](#)

2 Dimming via PWMI using STOP/TAIL function

The setup shows a typical application where OUT1 is controlled in PWM mode by tail signal. The PWM engine is programmed with a frequency of 250 Hz and a duty cycle of 10%. When a stop signal is present, PWM is deactivated forcing both channels to work with 100% duty cycle, delivering maximum output current in the LEDs.

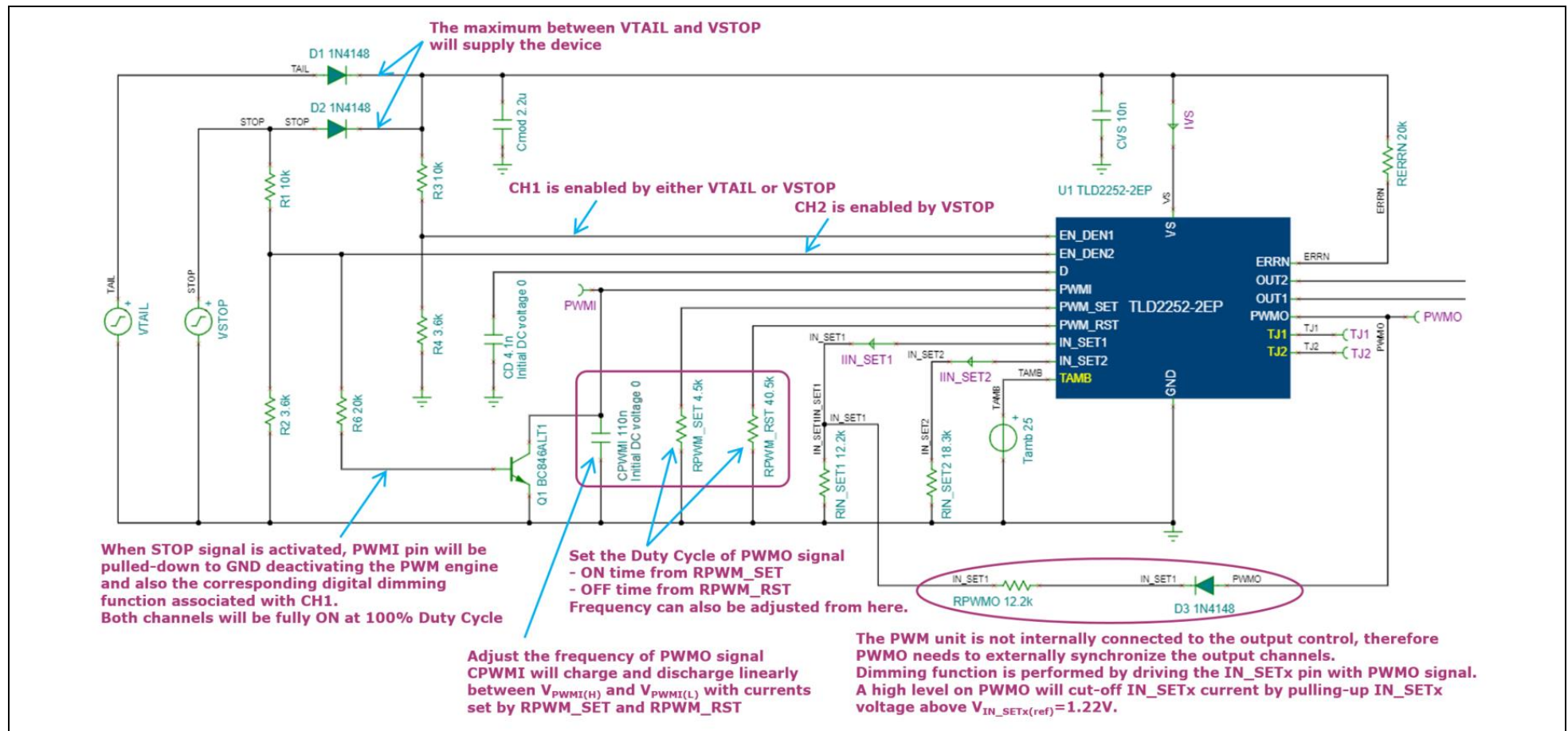


Figure 1 Test setup [click to open](#)

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LITIX™ Basic+ TLD2252-2EP

Dimming via PWMI using STOP/TAIL function

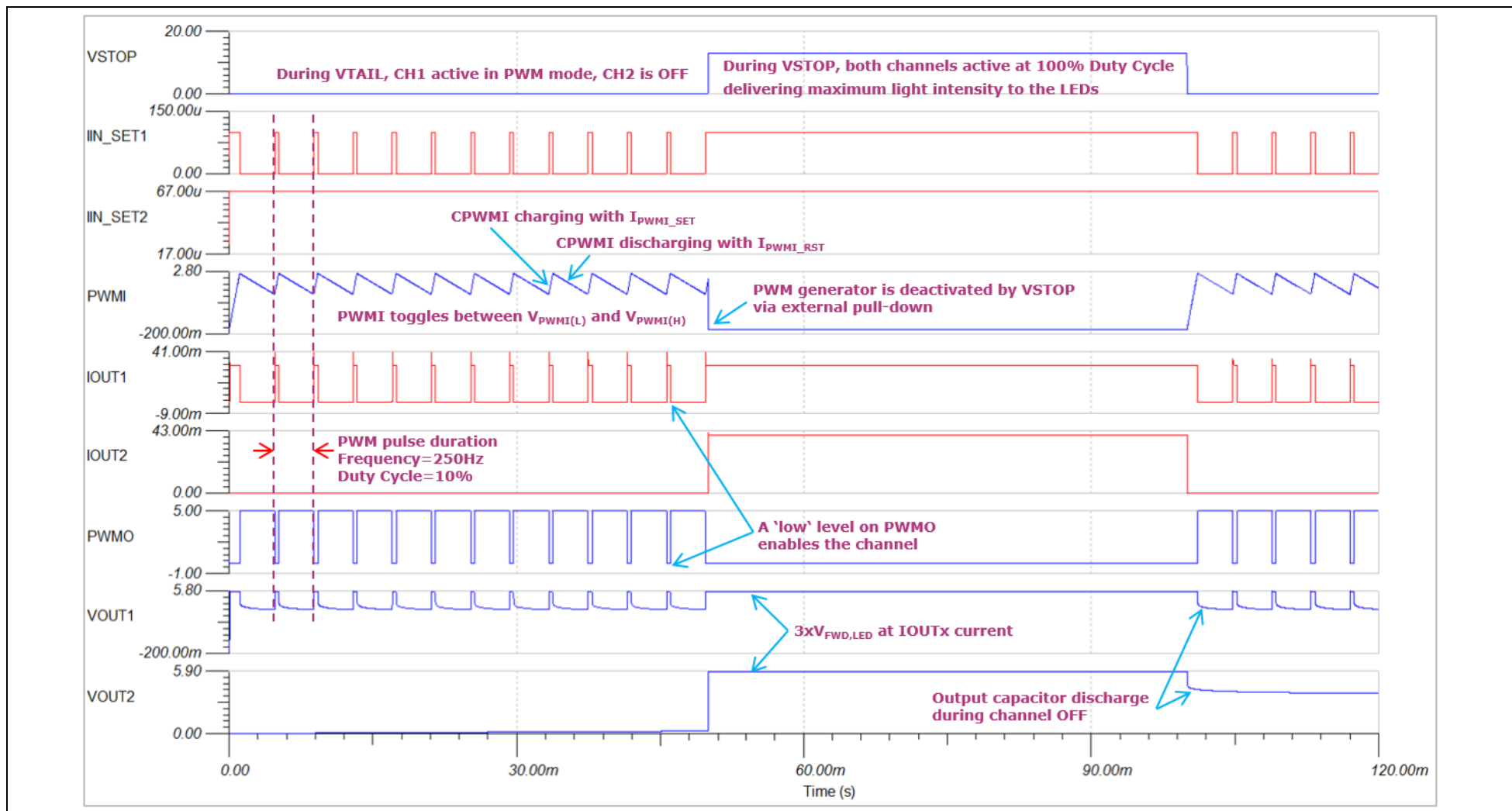


Figure 2 Simulation results

3 Short circuit fault management

The setup shows the double-fault management with D-pin connected to external capacitor. A short circuit event is applied on both OUT1 and OUT2 at 1 ms and 1.05 ms respectively. The fault signal is removed at 3 ms and 2.5 ms respectively.

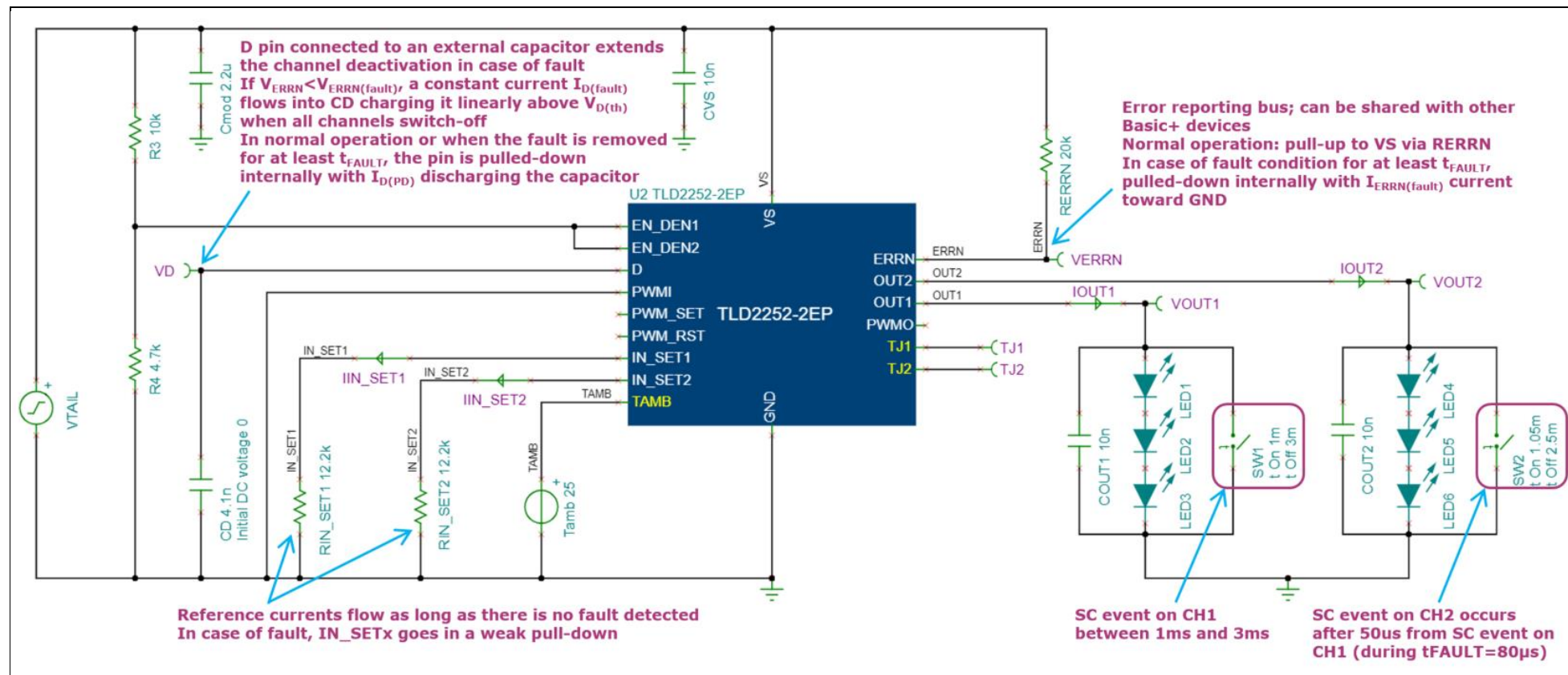


Figure 3 Test setup [click to open](#)

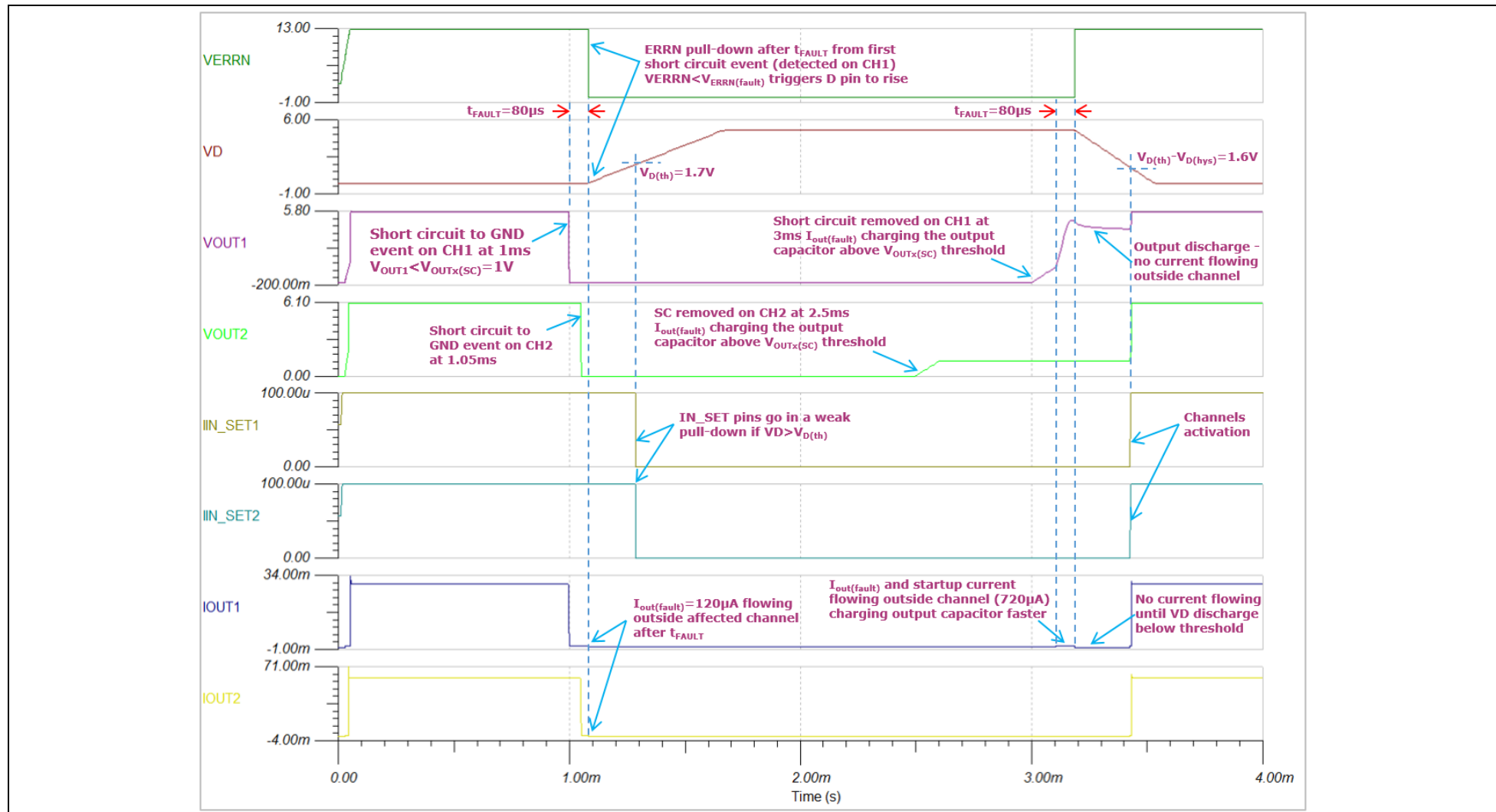


Figure 4 Simulation results

4 Revision history

Document version	Date of release	Description of changes
Rev.1.00	31.03.2020	Initial version created

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Email: erratum@infineon.com

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