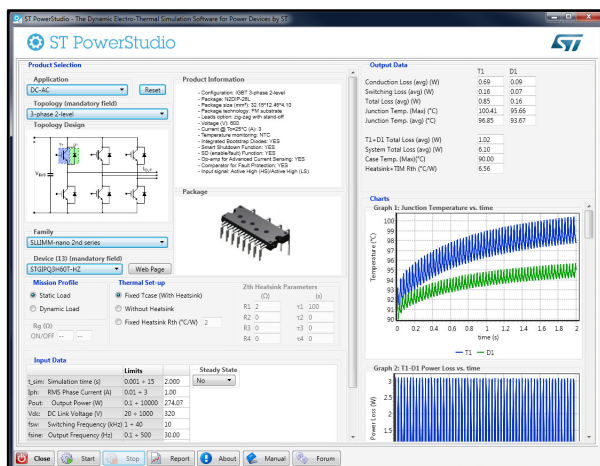# STSW-POWERSTUDIO

ST PowerStudio: the dynamic electro-thermal simulation software for power devices

Data brief

- Additional graphs for power loss analysis vs load current and switching frequency
- Output data for each power device
- Enables heatsink size estimation
- Output file report
- Web connectivity
- Multilanguage (English, Chinese, Japanese)
- Built-in user manual
- Free evaluation version

Description

ST PowerStudio is a dynamic electro-thermal simulation software dedicated to power devices by ST. The software provides a comprehensive power and thermal analysis able to predict the device performance, shortening the solution design and saving time and resources. Furthermore, the tool helps to select the proper device fitting the application mission profile.

ST PowerStudio is based on a very precise built-in electrical and thermal model, for each device, and thanks to an iterative calculation, taking into account the self-heating effects, it provides a highly accurate estimation of the power loss and the junction and case temperatures.

Table 1: Device summary

Reference	Part number
ST PowerStudio	STSW-POWERSTUDIO

Features

- Comprehensive power and thermal analysis
- Intuitive and user-friendly interface with grouped device controls
- Advanced product selector
- Static and dynamic mission profile
- Simulation time selection with very long mission profile duration
- Several thermal set-up input conditions
- Supports simulation without or with heatsink (allowing the user defined heatsink parameters)
- Internal self-heating model
- Virtual scopes for real-time power loss and junction/case temperatures evaluation

For further information contact your local STMicroelectronics sales office

1 General information

The software is able to simulate mission profile with static load (single set of input conditions) or a dynamic load, changing the input conditions over the time and performing very long simulation profile. Several thermal set-up input conditions can be simulated, such as:

- devices without heatsink, estimating the case and the junction temperatures;
- fixed case temperature (with heatsink), estimating the junction temperature and the heatsink R_{th};
- fixed heatsink thermal resistance, estimating the case and junction temperatures;
- fixed heatsink thermal impedance, estimating the case and junction temperatures and considering the thermal inertia of the system;

Simulation results are shown on tables and on dedicated scope views, as function of the time, the load current and switching frequency. An output report is provided with the summary of all the information and results for an easy comparison or archiving.

ST PowerStudio supports a large selection of power devices (SLLIMM™-nano, SLLIMM-nano 2nd series, SLLIMM, SLLIMM 2nd series, ACEPACK™) and facilitates the connectivity with st.com for dedicated documentations and resources. An on-line forum provides additional support to ST PowerStudio users. Access to the forum is available at https://community.st.com/community/st-powerstudio.

2 System requirements

- Windows® OS: XP, Vista, 7, 8 and 10
  - system type: 32/64-bit OS

SLLIMM™ and ACEPACK™ are a registered trademark of STMicroelectronics. All other names are the property of their respective owners.

3 Revision history

Table 2: Document revision history

Date	Revision	Changes
03-Nov-2017	1	Initial release.

IMPORTANT NOTICE – PLEASE READ CAREFULLY