ST PowerStudio

The dynamic electro-thermal simulation software for power devices

Predicting performance of SLLIMM™ and ACEPACK™ devices to ensure the best fit for your application mission profile

ST PowerStudio is a powerful and flexible simulation software for SLLIMM™ intelligent power modules and ACEPACK™ power modules.
The tool features a one-click comprehensive power and thermal analysis, avoiding long, complex and expensive application testing.
It provides a very accurate estimation of power loss, junction and case temperatures, and even explores non-testable parameters and helps in sizing a suitable heatsink.
Finally, the software helps developers select the proper device fitting the application mission profile, saving design time and resources.

KEY FEATURES

- Comprehensive power and thermal analysis
- User-friendly interface
- Static and dynamic mission profile
- Multi thermal set-up
- Simulation with or without heatsink
- Internal self-heating model
- Output data, tables and charts, for each power device
- Quick link to the device documentation
- Output PDF report
- Online forum
- Portable software
- Multilanguage (English, Chinese, and Japanese)

KEY BENEFITS

- Selection of proper device fitting the application mission profile
- Easier, faster and cheaper solution design
- Deep analysis of power loss and device temperatures
- Exploration of non-testable parameters
- Very accurate temperature-dependent output results
- Complex and long mission profile simulation
- Heatsink size estimation
- Internet connection not required for simulation

OVERVIEW

ST PowerStudio (STSW-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 very accurate estimation of the power loss as well as junction and case temperatures.

The software simulates mission profiles with a static load (single set of input conditions) or a dynamic load, changing the input conditions over time and performing very long simulation profiles.

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;
- 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, in function of time, 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.

SUPPORT AND ONLINE FORUM

In addition to dedicated documentation including a detailed user manual and other resources, ST facilitates connectivity with developers using ST PowerStudio through the ST Community with an on-line forum for additional support. Visit https://community.st.com/community/st-powerstudio

USER INTERFACE