LITIX™ LINEAR
TLD1211SJ
Single channel high side driver
Spice Transient Model

How to get started



Infineon

Details on the Delivery Package

- The package contains a complete setup for **MicroCap** using the transient spice model for the Infineon **TLD1211SJ**.
- The model library is encrypted to protect Infineon IP.
- Additional files included:
  - **TLD1211SJ_encrypted.lib**: device spice model library
  - **TLD1211SJ.shp**: device shape view
  - **TLD1211SJ.cmp**: device component view
  - **LR_E6xF_4B_typ_TRS.lib**: LED spice model library
  - **LR_E6xF_4B_typ_TRS.shp**: LED shape view
  - **LR_E6xF_4B_typ_TRS.cmp**: LED component view

There are two predefined test benches to select from and ready for use. For more information please consult Application Information section from datasheet.

- **Application1**: LED driving via Integrated Output Stage for typical load currents
- **Application2**: LED driving via External Output Stage for higher output currents

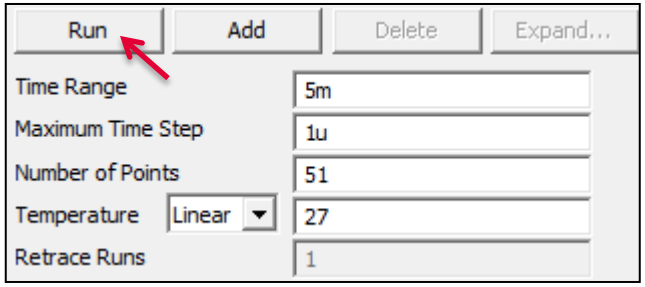
- **Not implemented:**
  - thermal behavior
  - current consumption from VS

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How to get started [1]

- Make sure you have a fully licensed version of **MicroCap11** for Windows installed
- Extract the files to your C:\ drive
- Open the .cir file 

- Start the simulation (press **ALT+1** and **F2** on keyboard)

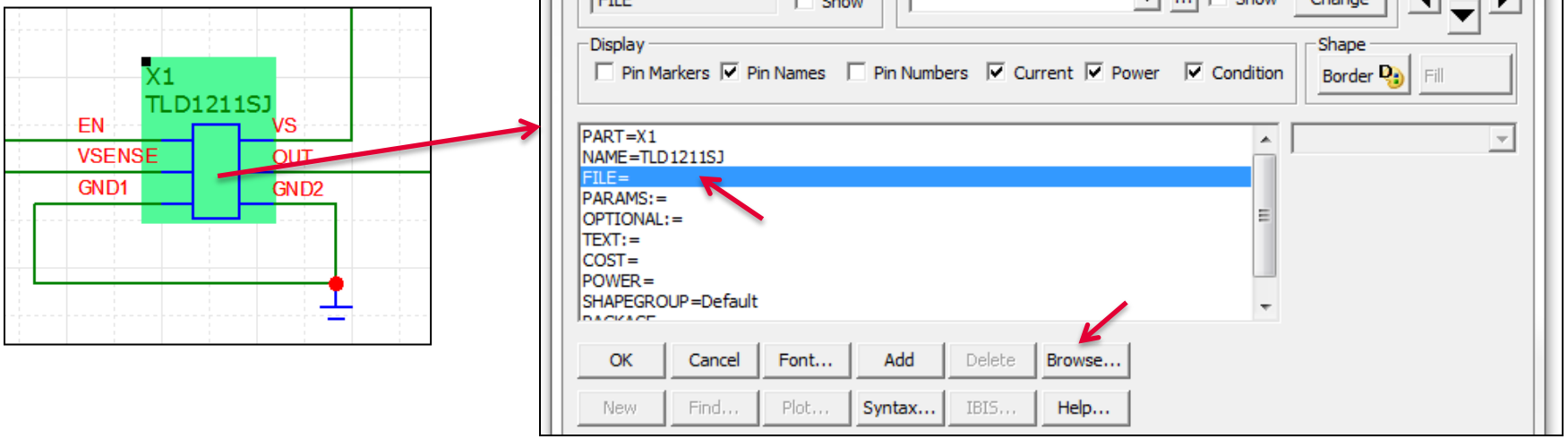


- Note: if model libraries are not found, follow the instructions on how to install mode libraries on the next slide

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How to get started [2]

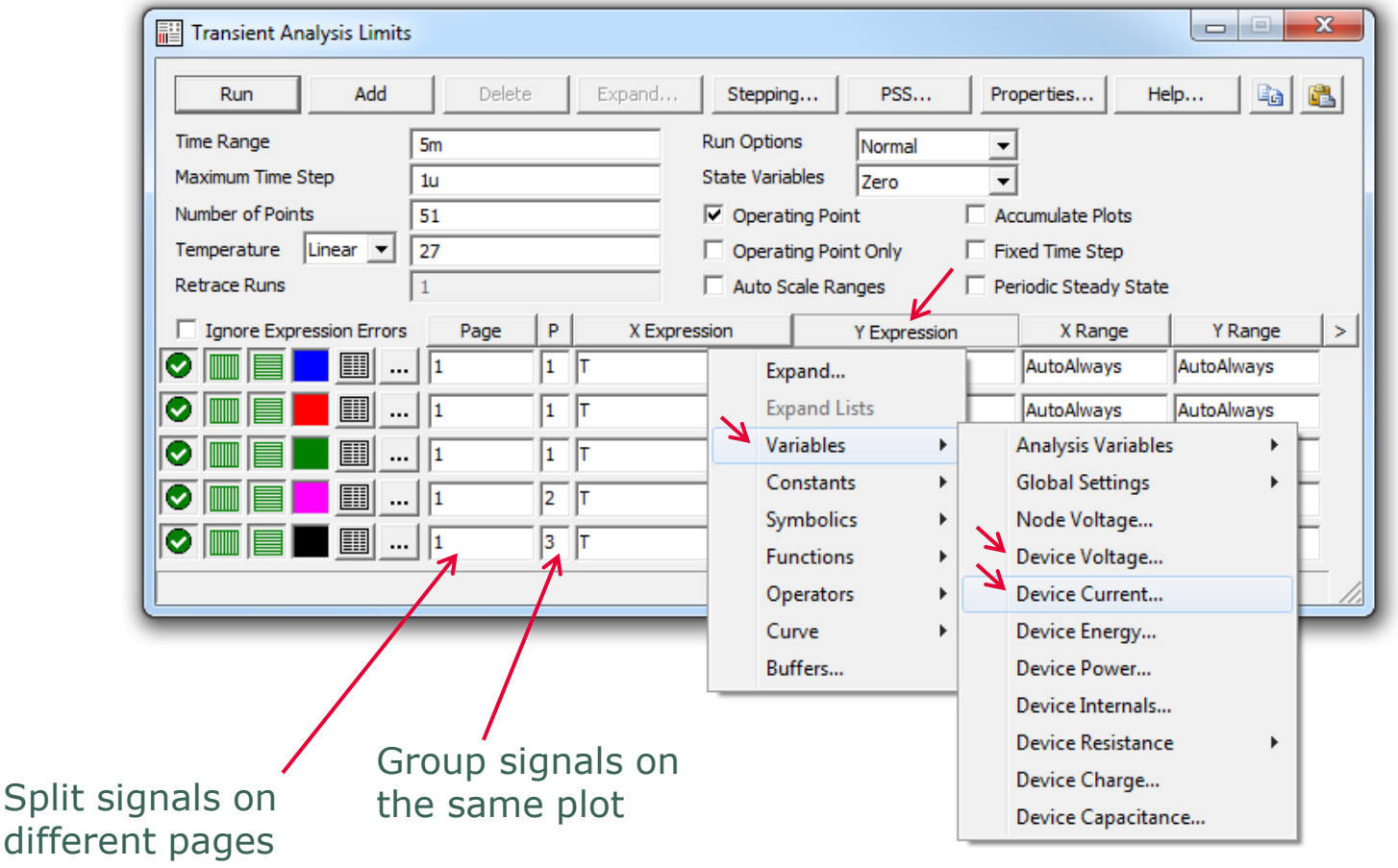
- Model library installation methods (either 1 or 2):
  1. Copy all .lib files included in the package to your local installation folder *…\MicroCap11\LIBRARY*
  2. Double click on the symbol, select **FILE=** and **Browse…** for the .lib file located inside **Test_Setup** folder



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Probing and signal plotting

- Open Transient Analysis Limits window to configure the list of signals
- All signals are available under Y Expression → Variables



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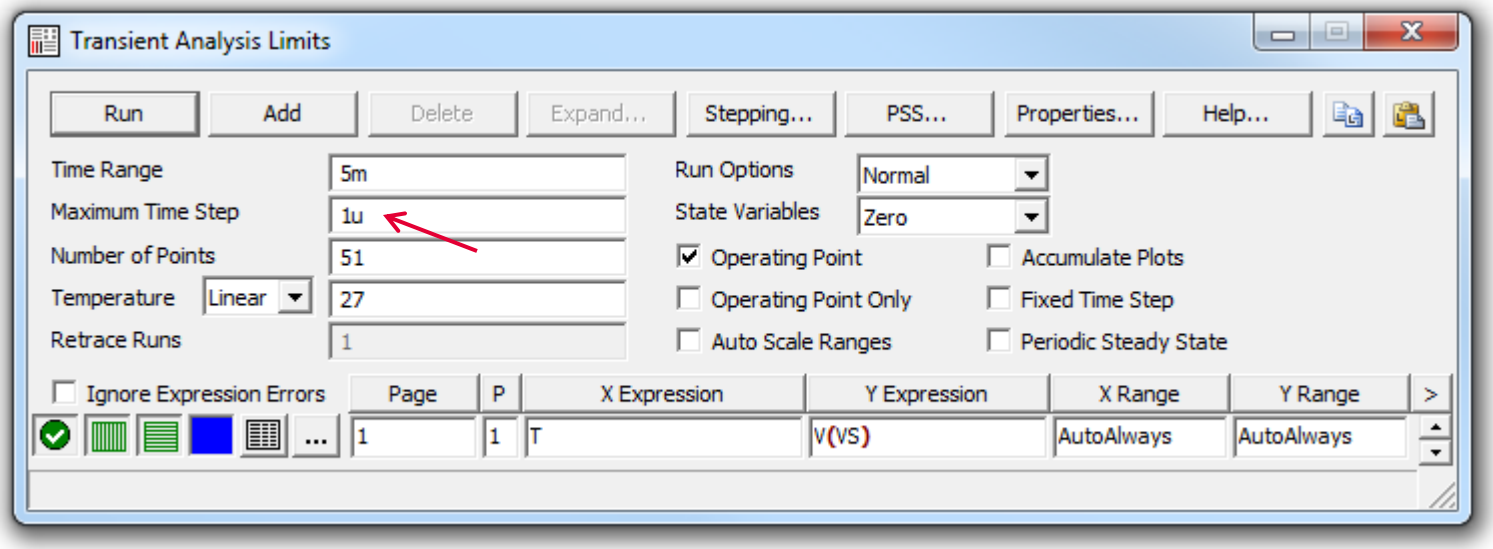
The next slides are showing some general recommendations on how to adjust the simulator settings for:

- improved accuracy
- improved convergence

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Settings & Adjustments [1]

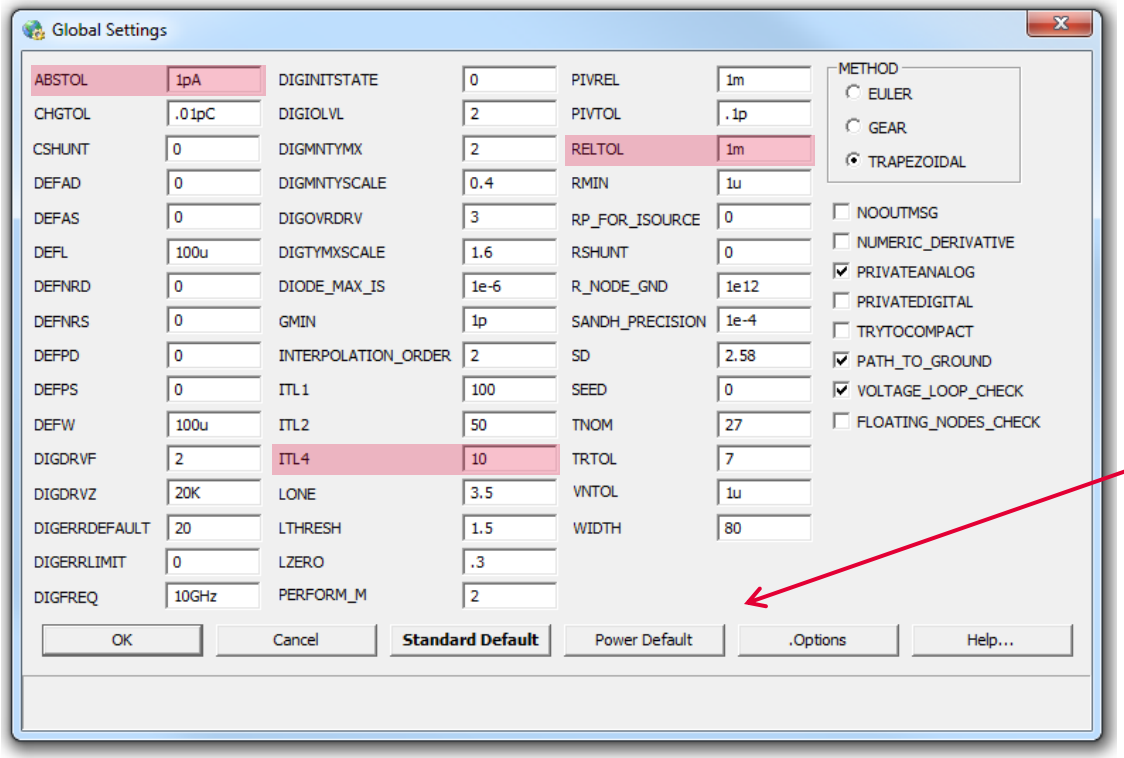
- The purpose of the following guidelines is to show some workarounds in case of non-convergence; the optimal setting depends on testbench configuration and suggested values should not be taken as reference
- Go to: Analysis → Transient… or press **ALT+1**
- To speed up the simulation, change the *Max Time Step* in Transient Analysis Limits. Note: high values may produce less accuracy



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Settings & Adjustments [2]

- The model is not guaranteed to work in every test situation with the default simulator settings. Therefore when the simulation does not converge it is recommended to gradually loosen the parameters.
- Go to: Options → Global Settings… or press **CTRL+SHIFT+G**
- Increasing *ABSTOL* from 1p to 1n or *RELTOL* from 1m to 10m or *ITL4* from 10 to 50 sometimes helps overcoming convergence issues. *RELTOL* over 10m may impact results accuracy.

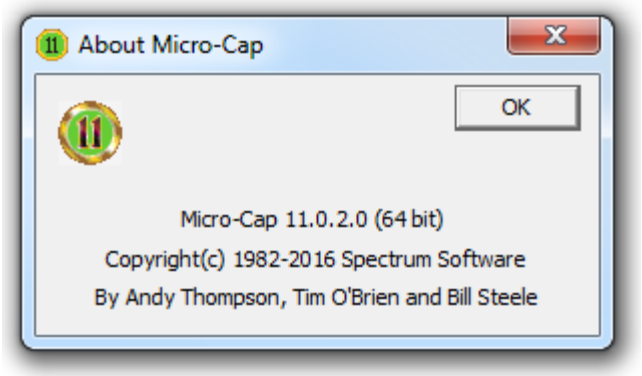


Predefined setup for power devices simulation

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Simulator version

- The spice model has been verified using version 11.0.2.0 release.



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