

January 10<sup>th</sup>, 2014  
VERSION: 2.0

## triacs PSpice models PC/WINDOWS INSTALLATION STEPS

1. Copy all the files to the ORCAD\CAPTURE\LIBRARY\PSICE directory.
2. Run ORCAD Schematics program.
3. Select the PART... option in the PLACE menu.
4. Click on ADD LIBRARY... button.
5. Search and select standard\_snubberless\_triacs\_symbols.olb file.
6. Press the OPEN button. The symbols will be automatically loaded.
7. Press CANCEL button.
8. Now, select EDIT SIMULATION PROFILE option in the PSPICE menu.
9. Select LIBRARY option in Configuration files menu.
10. Click BROWSE... button
11. Search and select the standard\_snubberless\_triacs\_pspice.lib file.
12. Press the OPEN button.
13. Press the ADD AS GLOBAL button.
14. Press the OK button.
15. Congratulations, you are now ready to use your new STMicroelectronics model library.

\*\*\*\*\*

\* TRIACs PSpice Models \*

\*\*\*\*\*

\* This TRIAC model simulates:

- \*  $-I_{GT}$  (the same for all quadrants) MAX of the specification
- \* note: for 4 quadrants TRIAC,  $I_{GT}$  Q4 is taken into account for all quadrants
- \*  $-I_L$  (the same for all quadrants) typ of the specification ( $I_{L\_Spice} = I_H / 2$ )
- \*  $-I_H$  (the same for both polarity) typ of the specification ( $I_{H\_Spice} = I_H / 3$ )
- \*  $-V_{DRM}$
- \*  $-V_{RRM}$
- \*  $-(dI/dt)_C$  and  $(dV/dt)_C$  parameters are simulated only if those constraints exceed very highly the specified limits.
- \* -Power dissipation is realistic and correspond to a typical TRIAC
- \* All these parameters are constant, and don't vary neither with temperature nor other parameters.

\*

\* The "STANDARD" parameter switch between 4 quadrants TRIACs (STANDARD = 1) and 3 quadrants TRIACs (STANDARD = 0).

\* The "STANDARD" parameter maintains or suppress the triggering possibility of the TRIAC in the fourth quadrant, and has absolutely

\* NO EFFECT on other parameters.

\* For a correct TRIAC behavior, the "Maximum step size" must be below or equal 20 $\mu$ s.

\*\*\*\*\*