Forward V1

This is a Simplis simulation model of a 400V input Forward. The output voltage is 12V and capable of up to 10A output. This simulation shows the effects of going from resonant reset to hard reset as the load increases. The PWM is a UC3845 by Unitrode.

To better view the schematic, do the following from the SIMetrix command shell to set up the fonts for the text:

File → Options → Font → Schematic – user 1 → Arial,Bold,14

File → Options → Font → Schematic – user 2 → Times New Roman,Bold,22

The following are simulation circuits:

Forward_Combo.sxsch - This finds the periodic operating point, then performs an AC analysis and last performs a load transient of 5A at 50usec. Takes 11 sec to run on a 1Ghz machine.

Forward_Startup.sxsch - This model shows how the converter starts up. Takes 35 sec to run on a 1Ghz machine.

The following are required models to run the simulation circuits: The internal schematic can be viewed by highlighting the component, and clicking on Hierarchy → Descend Into

Gen_Opto.sxcmp - This is a component model of a general purpose opto.