

# TPS54JA20 SIMPLIS Model Features and Limitations

## Model Usage Notes:

### A. Features have been modelled

1. Output Voltage Setting
2. Internal Fixed Soft-Start and External Adjustable Soft-start
3. External REFIN for Output Voltage Tracking
4. Frequency and Operation Mode Selection
5. Low-side FET Zero-Crossing
6. Current Sense and Positive Overcurrent Protection (OCP)
7. Low-side FET Negative Current Limit
8. Power Good
9. Over Voltage Protection (OVP)
10. Under Voltage Protection (UVP)
11. Out-Of-Bounds (OOB) Operation
12. Output Voltage Discharge
13. UVLO Protection
14. BOOT functionality
15. Remote Sense

### B. Features have not been modelled

1. Operating Current, Shutdown Current and Temperature dependent characteristics are not modelled.

### C. Application Notes

1. To run the POP/AC analysis, you must run complete Startup Transient simulation and then run the AC analysis. Also you must choose "Use snapshot from previous transient analysis" in POP Advanced options.
2. Ground Pins have been tied to 0V internally and hence model does not support Inverting topologies.