

TPS546x25 SIMPLIS Transient Model Features and Limitations

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* Model Usage Notes:

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* A. Features have been modelled

- * 1. Output Voltage Setting using external FB as well as internal using VSEL_FB
- * 2. BOM can be selected in F11 command window
- * 3. Frequency, RAMP and Gain selected using MSEL2
- * 4. Mode Selection (FCCM and DCS Modes) can be selected using PMB_ADDR
- * 5. Overcurrent Protection (OCP) and Soft start can be selected using MSEL1
- * 6. Open-drain power-good output (PGOOD)
- * 7. Over Voltage Protection (OVP)
- * 8. Under Voltage Protection (UVP)
- * 9. EN and Enable delay
- * 10. TPS546E25, TPS546C25, and TPS546B25 are supported

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* B. Features have not been modelled

- * 1. Operating Quiescent Current
- * 2. Shutdown Current
- * 3. Temperature dependent characteristics
- * 4. Ground Pins have been tied to 0V internally and hence model does not support Inverting topologies.
- * 5. Telemetry (V/I/T) and input power monitoring

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* C. Application Notes

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- * 1. The parameter STEADY_STATE has been used to reach the steady state faster.
- * Keep STEADYSTATE = 0 to observe startup behavior.
- * Keep STEADYSTATE = 1 and appropriate IC on Inductor and capacitor to observe for faster Steady state.
- * 2. Once the PVIN over-voltage, VOUT UVP, VOUT OVP fault is triggered, the device latches off until Simulation is reset with the Fault cleared (No Fault Condition is present any more).
- * 3. The user must carefully enter these values in accordance with the datasheet. The description of these parameters are as below:
 - * - VIN: Input voltage
 - * - MSEL1, MSEL2, PMB_ADDR, VSEL_FB: to select operation mode (DCM) OR for FCCM mode and Switching Frequency, OCL, Soft start, Internal/external FB, ramp and gain, OCL, VOUT.
 - * - ILOAD: for load
- * 4- The BOM, VIN, ILOAD parameter can be adjusted as needed on the F11 window
- * 5- EN with delayed time can be supported on the STARTUP model by entering the {EN_Delay} time in the F11 window