

TPSM843820 SIMPLIS Transient Model Features and Limitations

* TPSM843820

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** Released by: Texas Instruments Inc.

* Part: TPSM843820

* Date: 17NOV2023

* Model Type: TRANSIENT,AVERAGE

* Simulator: SIMPLIS

* Simulator Version: 8.40h

* EVM Order Number: TPSM843820EVM

* EVM Users Guide: SLUUCR3 – JANUARY 2023

* Datasheet: SLUSEU1 – JANUARY 2023

* Topologies Supported: Buck

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* Model Version: Final 1.00

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* Updates:

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* Final 1.00

* Release to Web.

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* Model Usage Notes:

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* A. Features have been modelled

* 1. Output Voltage Setting

* 2. Programmable Soft-Start

* 3. Frequency and Operation Mode Selection

* 4. Low-side FET Zero-Crossing

- * 5. Current Sense and Positive Overcurrent Protection(OCP)
- * 6. Low-side FET Negative Current Limit
- * 7. Power Good
- * 8. Over Voltage Protection(OVP)
- * 9. Under Voltage Protection(UVP)
- * 10. Output Voltage Discharge
- * 11. EN/VIN UVLO Protection
- * 12. BOOT functionality
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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.
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- * C. Application Notes
- * 1. The parameter STEADY_STATE has been used to reach the steady state faster.
- * Keep STEADYSTATE = 0 to observe startup behaviour.
- * Keep STEADYSTATE = 1 and appropriate IC on Inductor and capacitor to observe for faster Steady state and is must for AC Analysis.
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