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\*\* Released by: Texas Instruments Inc.

\* Part: TPSM843B22

\* Date: 08June2023

\* Model Type: TRANSIENT

\* Simulator: SIMPLIS

\* Simulator Version: 8.40h

\* EVM Order Number: TPSM843B22EVM

\* EVM Users Guide: SLUUCK9 – April 2023

\* Datasheet: SLUSE06 – March 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. VCC UVLO Protection

\* 13. BOOT functionality

\* 14. This model can be used to simulate all the above features for the TPSM843B22, TPSM843A26, and TPSM843A22 by selecting the right device in F11 window.

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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 behavior.
- \* Keep STEADYSTATE = 1 and appropriate IC on Inductor and capacitor to observe for faster Steady state and is must for AC Analysis.
- \* 2. This model can be used to simulate TPSM843B22, TPSM843A26, and TPSM843A22 by selecting the right device in F11 window.

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