

# TPS628691A PSpice Transient Model Features and Limitations

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* Model Usage Notes:
* A. The following features have been modeled
*   a. RON and variation with VIN
*   b. Peak, Valley current limit
*   c. Output discharge functionality
*   d. Output voltage Programmability.
*   e. Power Save Mode or Forced PWM Mode.
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* B. Features have not been modeled
*   1. Operating Quiescent Current
*   2. Shutdown Current
*   3. Temperature dependent characteristics
*   4. SCL and SDA pin functionalities.
*   5. Ground pins have been tied to 0V internally. Therefore, this model cannot be used for inverting topologies.
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* C. Application Notes
*   1. The parameter STEADY_STATE has been used to reach the steady state faster.
*      Keep STEADY_STATE = 0 to observe startup behaviour
*      Keep STEADY_STATE = 1 for faster Steady state.
*   2. SOFTWARE_ENABLE= 0 - Disable the device. All registers values are still kept.
*      SOFTWARE_ENABLE= 1 - Re-enable the device with a new startup without the tDelay.
*   3. If ENABLE_FPWM_DURING_VOUT_CHANGE=1 and ENABLE_FPWM=0, and if the device goes from CCM to DCM,
*      128 cycles of FPWM is activated. After that the device goes to PFM.
*      If ENABLE_FPWM_DURING_VOUT_CHANGE= 0, then ENABLE_FPWM takes control.
*   4. The ramp speed is defined by VOUT_RAMP_SPEED(0->20mV/us, 1->10mV/us, 2->5mV/us, 3->1mV/us)
*   5. ENABLE_HICCUP= 1 - Enable HICCUP, Disable latching protection.
*      ENABLE_HICCUP= 0 - Disable HICCUP. Enable latching protection.
*   6. When ENABLE_OUTPUT_DISCHARGE=1, VOUT discharges through Discharge Resistor.
*      Else discharge is only through load.
*   7. If ENABLE_FPWM_DURING_VOUT_CHANGE=1 and ENABLE_FPWM=0, and if the
*      device goes from CCM to DCM, 128 cycles of FPWM is activated. After that the device goes
*      to PFM. If ENABLE_FPWM_DURING_VOUT_CHANGE= 0, then ENABLE_FPWM takes control.
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