

# TPS62865 PSpice Transient Model Features and Limitations

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* Model Usage Notes:
* A. The following features have been modeled
*   a. 100% duty cycle operation
*   b. RON and variation with VIN
*   c. Current Limit and HICCUP
*   d. Output discharge functionality
*   e. Selectable Fixed and Adjustable output voltage configuration.
*   f. Power Save Mode or Forced PWM Mode.
*   g. Power Good and UVLO
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* B. Features have not been modeled
*   1. Operating Quiescent Current
*   2. Shutdown Current
*   3. Temperature dependent characteristics.
*   4. 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 and VOUT has been used to reach the steady state faster.
*      Keep STEADY_STATE = 0 and VOUT = output voltage value, to observe startup behaviour
*      Keep STEADY_STATE = 1 and VOUT = output voltage value, for faster Steady state.
*   2. After enabling the device (EN>1V), there is an enable delay (tDelay)= 700us before the device starts switching.
*      After tDelay output voltage ramps up the value set by external resistor R3 (at VSET/MODE pin) in 1ms.
*   3. For R3=10K or LOW and R3=249K or HIGH, Device works in Adjustable Output Voltage Configuration.
*   4. Once the device reaches steady state, VSET/MODE pin can be used to run the device in FPWM/PPM mode.
*      Set VSET/MODE = LOW, device runs in PFM
*      Set VSET/MODE = HIGH, device runs in FPWM
*      Connect VSET/MODE to 5.5V DC (not to VIN) to model the device in FPWM mode with an adjustable output voltage.
*      In the actual application, connect VSET/MODE to VIN.
*   5. The PG pin becomes high under the condition-  $0.91 \times VOUT\_NOM < VVOS < 1.11 \times VOUT\_NOM$ 
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