

Slow Start (SS/TR)

Connecting the STSEL pin to AGND and leaving SS/TR pin open enables the internal SS capacitor with a slow start interval of approximately 1.1 ms. Adding additional capacitance between the SS pin and AGND increases the slow start time. Table 6 shows an additional SS capacitor connected to the SS/TR pin and the STSEL pin connected to AGND. See Table 6 below for SS capacitor values and timing interval.

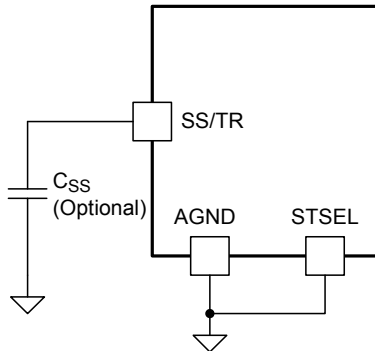


Figure 32. Slow-Start Capacitor (C_{SS}) and STSEL Connection

Table 6. Slow-Start Capacitor Values and Slow-Start Time

C _{SS} (pF)	open	2200	4700	10000	15000	22000	25000
SS Time (msec)	1.1	1.9	2.8	4.6	6.4	8.8	9.8

Overcurrent Protection

For protection against load faults, the TPS84621 incorporates output overcurrent protection. Applying a load that exceeds the regulator's overcurrent threshold causes the regulated output to shut down. Following shutdown, the module periodically attempts to recover by initiating a soft-start power-up as shown in Figure 33. This is described as a hiccup mode of operation, whereby the module continues in a cycle of successive shutdown and power up until the load fault is removed. During this period, the average current flowing into the fault is significantly reduced. Once the fault is removed, the module automatically recovers and returns to normal operation as shown in Figure 34.

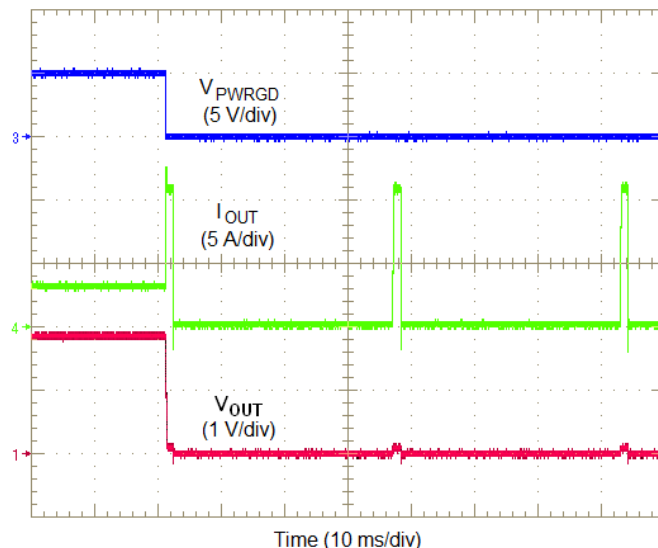


Figure 33. Overcurrent Limiting

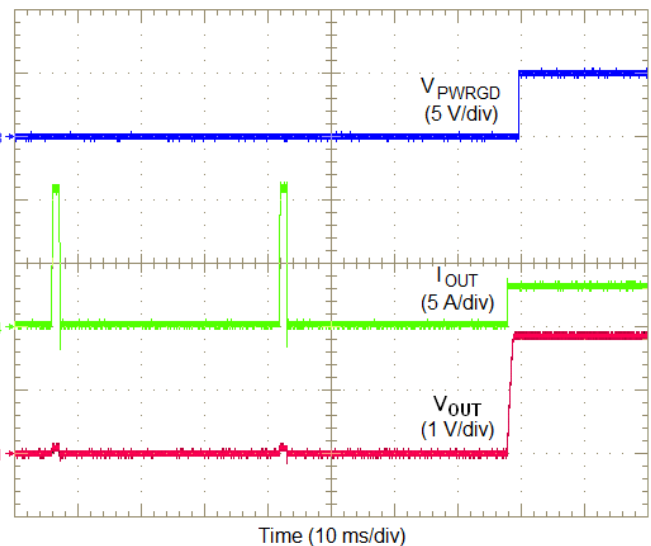


Figure 34. Removal of Overcurrent Condition