

TPS65633 Increased Output Current

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ABSTRACT

This application note describes the operating conditions over which the V_{ELVDD} and V_{ELVSS} outputs of the TPS65633 can support output currents up to 500 mA.

The standard application circuit of the TPS65633 is rated for output currents up to 300 mA from V_{ELVDD} and V_{ELVSS} for input voltages in the range 2.9 V to 4.5 V. Some applications, such as those that support flash mode, need output currents higher than 300 mA.

The TPS65633 device can support V_{ELVDD} and V_{ELVSS} output currents up to 500 mA under the following conditions:

- $V_I \geq 3.6$ V
- V_{ELVSS} is not more negative than -4 V
- The inductor used for the V_{ELVDD} boost converter has a saturation current rating greater than 0.8 A
- The inductor used for the V_{ELVSS} inverting buck-boost converter has a saturation current rating greater than 1.5 A
- The DCR of the inductors used is ≤ 250 m Ω
- The thermal design of the system provides adequate heatsinking

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