

USB Power Delivery (Type-C PD) 45 W USB wall power adapter solution based on STCH02 and STUSB4700

Data brief



Features

- USB wall power adapter input: 85 V_{AC} to 264 V_{AC}
- USB voltage output: 5 V, 9 V and 15 V
- Current limit: 3 A for all voltage level profiles
- Load power limited to 45 W
- Cable compensation
- Isolated quasi-resonant flyback
- Efficiency 90% (approx.)
- USB Type-C Power Delivery compatible
- USB-IF certified

Description

This board has been physically tested and validated; it is not for sale.

This USB Power Delivery wall adapter is a USB-IF certified solution with a 45 W isolated power supply with USB Power Delivery controller.

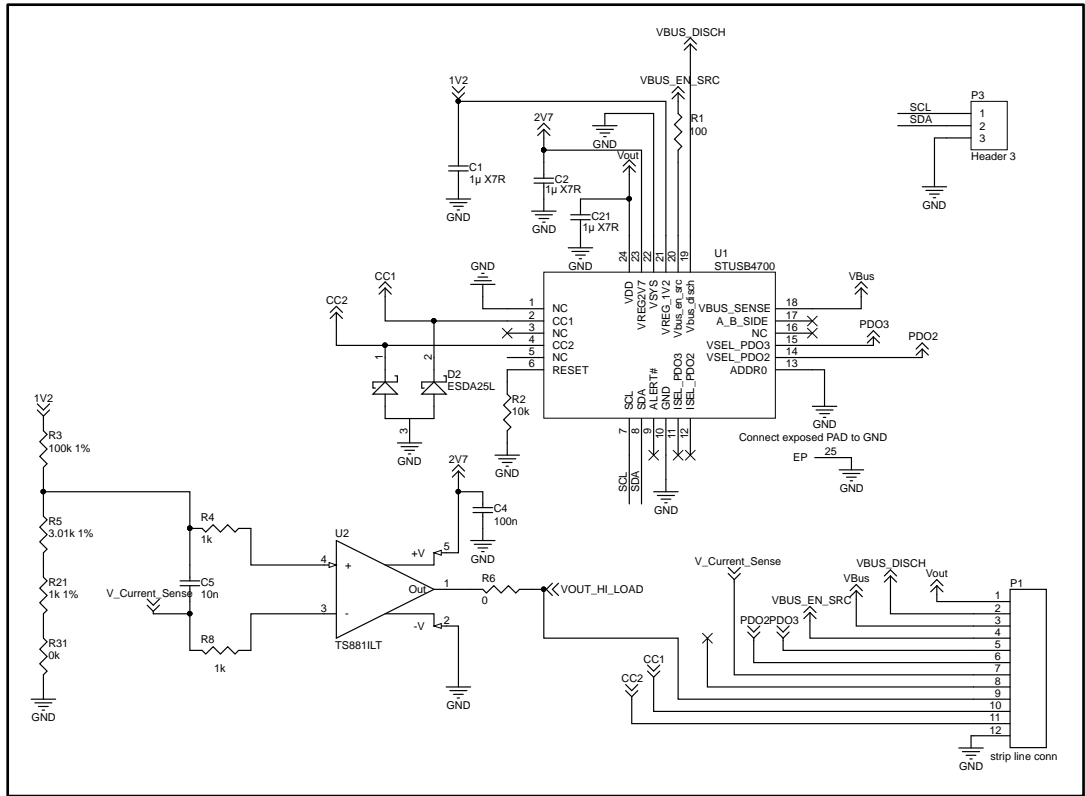
This USB Type-C PD wall power adapter design is for universal line voltage applications based on the STCH02 Primary controller and STUSB4700 USB PD controller.

The 5 V, 9 V and 15 V USB output voltage profiles all have a 3 A rating.

The offline power supply is implemented in an isolated flyback topology based on the STCH02 quasi-resonant controller with ultra-low standby power consumption. The USB Power Delivery (PD) is managed by the STUSB4700 and is Type-C compatible: power negotiation, V_{bus} discharge, protections, etc. are entirely managed by the IC.

The USB power supply architecture connects a power board with a controller board. This design optimizes the form factor and lets you scale the power section up or down to suit different USB Power Adapter applications.

Figure 2: Control board schematic diagram



Revision history

Table 1: Document revision history

Date	Version	Changes
19-Oct-2017	1	Initial version
13-Nov-2017	2	Updated cover page image, description and <i>Figure 2: "Control board schematic diagram"</i> .

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