



USB Power Delivery AC/DC Solution

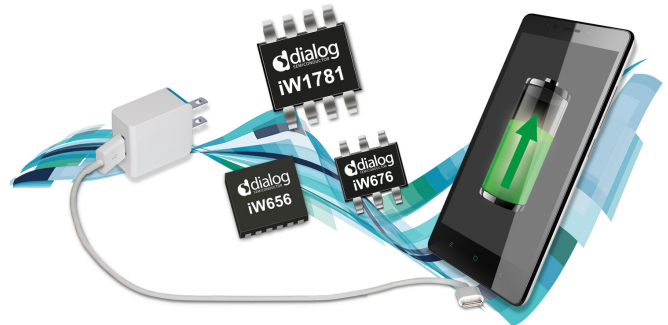
Complete System Solution for USB PD Travel Adapters

Dialog's iW656+iW1781+iW676 USB Power Delivery AC/DC chipset offers a complete system solution with the lowest component count for travel adapters.

The iW656 USB PD interface controller resides on the secondary side of the AC/DC power supply and manages the communication between the power adapter and mobile device.

The iW656 works with Dialog's iW1781 **RapidCharge™** primary-side controller. It transmits all necessary information via an optocoupler to the primary side, including voltage requests, output current limits, output voltage undershoot, output over-voltage, and fault and reset signals.

The iW676 synchronous rectifier eliminates the need for a parallel Schottky diode for higher efficiency and lower BOM cost, enabling the high power density needed for small form-factor USB PD adapters.



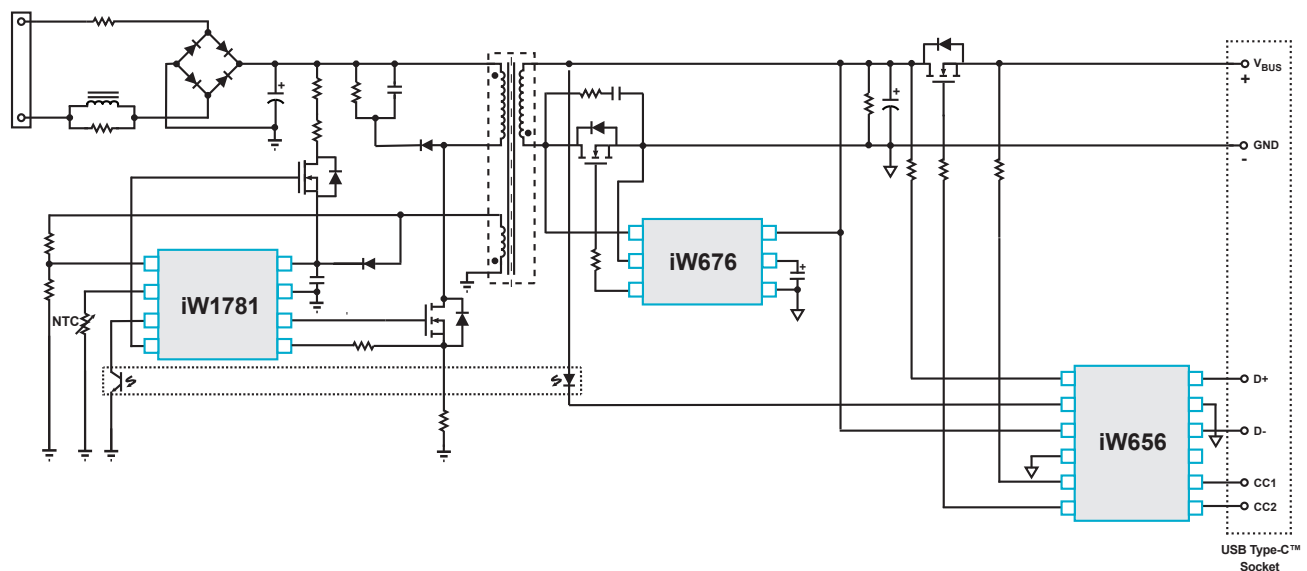
iW656+iW1781+iW676 Features

- ▶ USB-IF PD certified (USB PD 2.0)
- ▶ Compatible with USB Type-C™ Rev. 1.2
- ▶ Secondary-side NMOS V_{BUS} switch lowers system cost
- ▶ Ultra-low no-load power consumption < 20mW
- ▶ Robust protection features
 - Over-voltage protection
 - Over-current protection
 - Output short protection
 - Over-temperature protection
- ▶ Double-layer cable protection
 - D+/D-/CC1/CC2 over-voltage protection (iW656)
 - **SmartDefender™** advanced hiccup technology (iW1781)
- ▶ Optional support for
 - Qualcomm® Quick Charge™ 3.0
 - Qualcomm® Quick Charge™ 2.0
 - Direct Charge
 - Other **RapidCharge™** protocols

iW656+iW1781+iW676 USB PD AC/DC Adapter Chipset

AC/DC PWM Controller	USB PD Controller	Synchronous Rectifier Controller	Output Power Typical	Output Voltage Range	No-Load Standby Power	Efficiency
iW1781	iW656	iW676	15W – 45W	3 – 20V	< 20mW	90% efficiency with iW676 synchronous rectifier

iW656+iW1781+iW676 Typical Application Diagram



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