

PCA9482UK

7 A 2:1, 1:2, and 1:1 mode switched capacitor direct charger

Rev. 1.0 — 8 November 2022

Short data sheet

1 General description

The PCA9482UK is a highly-integrated switched-capacitor converter with an embedded OVPFET, targeted to provide two times the output current for fast charging applications with a 1-cell battery. The device works in 2:1 switching operation with very high efficiency (>96.5 %, at $V_{VOUT} = 4\text{ V}$, $I_{VOUT} = 5\text{ A}$), in 1:2 switching operation or in 1:1 mode with forward and reverse direction.

As absolute maximum voltage for each VIN and VOUT, VIN input is designed to support up to 16.5 V with no pre-biased scheme and 20 V with the pre-bias enabled for USB VBUS, and VOUT input is designed to support up to 7 V with the pre-bias enabled for a 1-cell battery application.

The device provides multiple safety schemes such as OV (Overvoltage), UV (Undervoltage), switching pin short, thermal shutdown and others.

The device features all the functions with I²C-bus interface, with up to 1 MHz.

2 Features and benefits

- Integrated 2:1 or 1:2 unregulated switched capacitor and bidirectional bypass mode with switched-capacitor converter, >96.5 % efficiency at 5 A output current
- 20 V tolerant DC voltage on VIN and 7 V on VOUT
- OVP FET with IVIN Regulation and Battery voltage/current loop
- Dual-Phase Switched-Capacitor to optimize efficiency and a number of components
- Minimized power dissipation schemes embedded on an internal regulation
- Multiple safety schemes
 - Over-temperature protection (OTP)
 - Over-voltage protection (OVP)
 - Under-voltage protection (UVP)
 - Input/Output or flying capacitor short detection
 - Watchdog timers
- 1 Mbit/s I2C bus target interface
- 3.02 x 2.72 mm, 6 x 7, 42 WLCSP with 0.4 mm pitch

3 Applications

Smartphone, tablet, and other portable electronic devices with high-voltage direct charging.



4 Ordering information

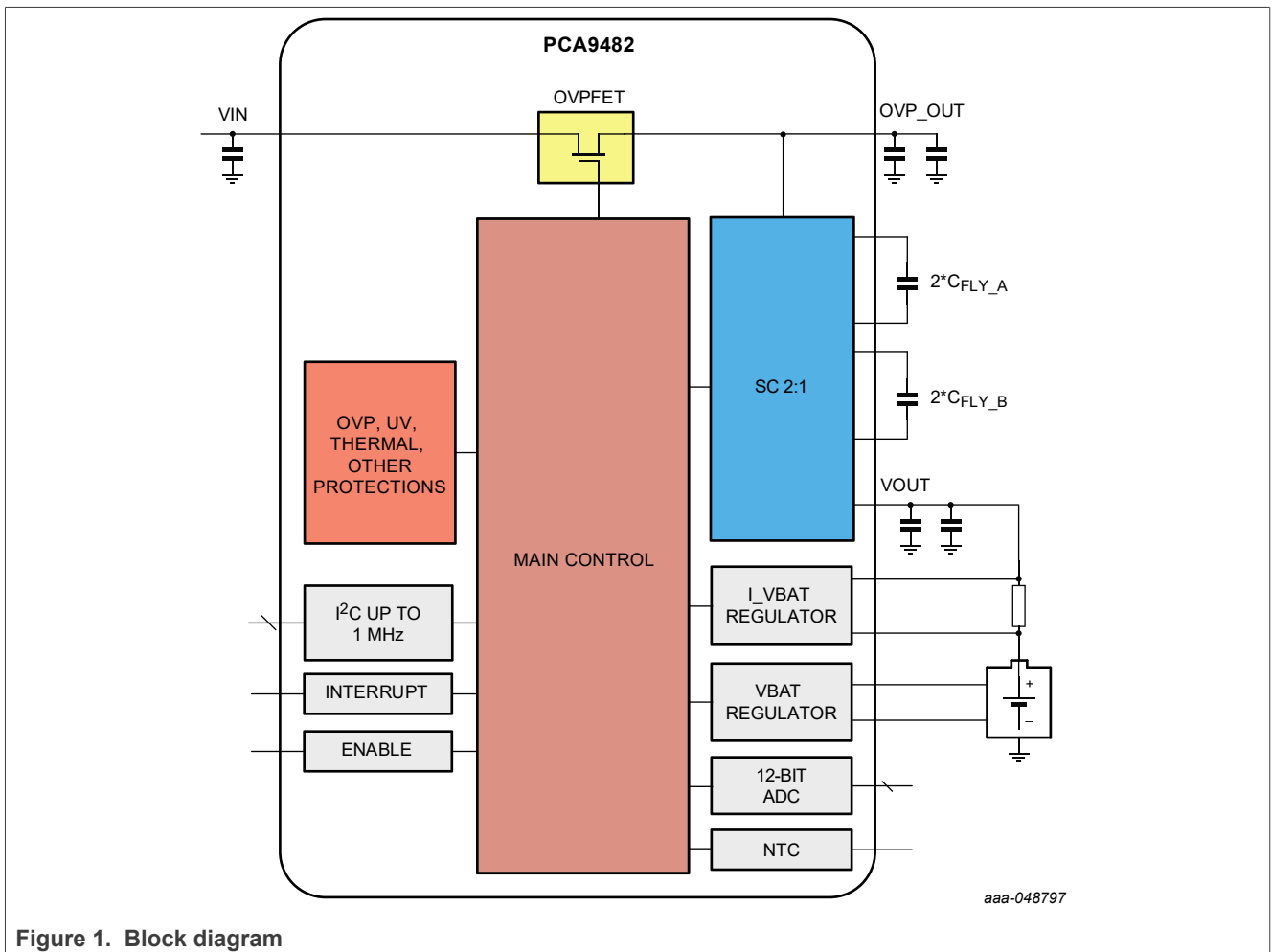
Table 1. Ordering information

Type number	Topside marking	Package		
		Name	Description	Version
PCA9482UK	9482UK	WLCSP42	WLCSP42 (6x7 ball array) 0.4mm pitch 3.02 x 2.72 x 0.525mm (back side coating included),	SOT1459-8

4.1 Ordering options

Type number	Orderable part number	Package	Packing method	Minimum order quantity	Temperature
PCA9482UK	PCA9482UKZ	WLCSP42	REEL 13"Q1 DP CHIPS	8000	T _{amb} = -40 °C to 85 °C

5 Block diagram



6 Legal information

6.1 Data sheet status

Document status ^{[1][2]}	Product status ^[3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

[1] Please consult the most recently issued document before initiating or completing a design.

[2] The term 'short data sheet' is explained in section "Definitions".

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