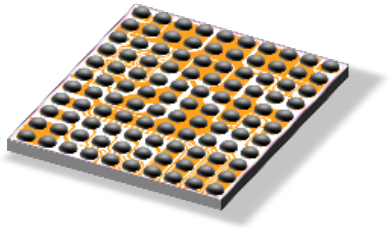
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STWLC88

Data brief

Qi-compliant inductive wireless power receiver for 50W applications



Features

- Up to 50 W output power
- Up to 12 W output power in Tx mode
- Qi EPP 1.2.4 inductive wireless standard communication protocol compliant
- Integrated 27 V synchronous rectifier with ≥ 98% efficiency
- Low drop-out linear regulator with output current and input voltage control loops
- Programmable LDO regulator with output voltage up to 20 V in steps 25 mV
- 32-bit, 64 MHz ARM Cortex microcontroller core
- RAM/FTP (Few Times Programmable) Firmware patching and advance features
- 8-channels, 10-bit A/D converter
- 8 configurable GPIOs
- I2C Slave, Master interface
- Supports external flash for design in
- High speed SPI (master) for external interface
- Accurate current sense system for Foreign Object Detection (FOD)
- Q-factor measurement for Object Detection in Transmitter mode
- ASK V/I Modulator
- Overvoltage, overcurrent and thermal protection
- Wide rectifier input frequency of 50-300 kHz
- Flip chip 110 bumps (4.07 x 4.49 mm)

Product status link
STWLC88

Product summary	
Order code	STWLC88JR
Package	Flip chip (4.077 x 4.490mm)
Packing	Tape and reel

Application

- Smartphones
- Tablets
- Laptops
- Power banks
- E-cigarettes

Description

The STWLC88 is a highly integrated wireless power receiver solution suitable for applications up to 50W. The chip has been designed to support the latest Qi specifications for inductive communication protocol with Extended Power Profile (EPP) and proprietary STSuperCharge (STSC) protocol for fast charging.

This solution requires low external BOM count. Because of the integrated low impedance synchronous rectifier and low drop-out linear regulator, STWLC88 achieves high efficiency and low power dissipation.

The STWLC88 features embedded FTP non-volatile memory to enable I2C interface customization and support of proprietary communication and charging protocols.

The STWLC88 is also capable of operating in transmitter (Tx) mode to share power for charging other devices with the output power up to 12W depending on the coil used.

The Flip Chip (4.07 x 4.49 mm) and low BOM count makes it very suitable for very compact application.

Revision history

Table 1. **Document revision history**

Date	Version	Changes
28-Oct-2020	1	Initial release.

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