

1 Descriptions

The TCW9050 is a highly integrated and efficient single-chip wireless power receiver/transmitter IC (TRx). As a receiver, it can deliver up to 50W to the charger system used in mobile phones. Optionally, the TCW9050 can serve as a wireless transmitter that can transmit up to 15W power to other wireless handheld devices. Both the TX and RX mode are compatible to WPC 1.2.4 protocol and in support for propriety protocol development.

The TCW9050 integrates a high efficiency synchronous full-bridge rectifier with ultra-low R_{DS} to convert the AC power signal from a wireless transmitter to DC power and a programmable low-dropout LDO allowing for terrific efficiency and system optimization.

The TCW9050 contains an industry-leading on-chip 32-bit MCU offering great flexibility for different applications with extremely low standby power consumption and a MTP memory makes a convenient for system firmware update.

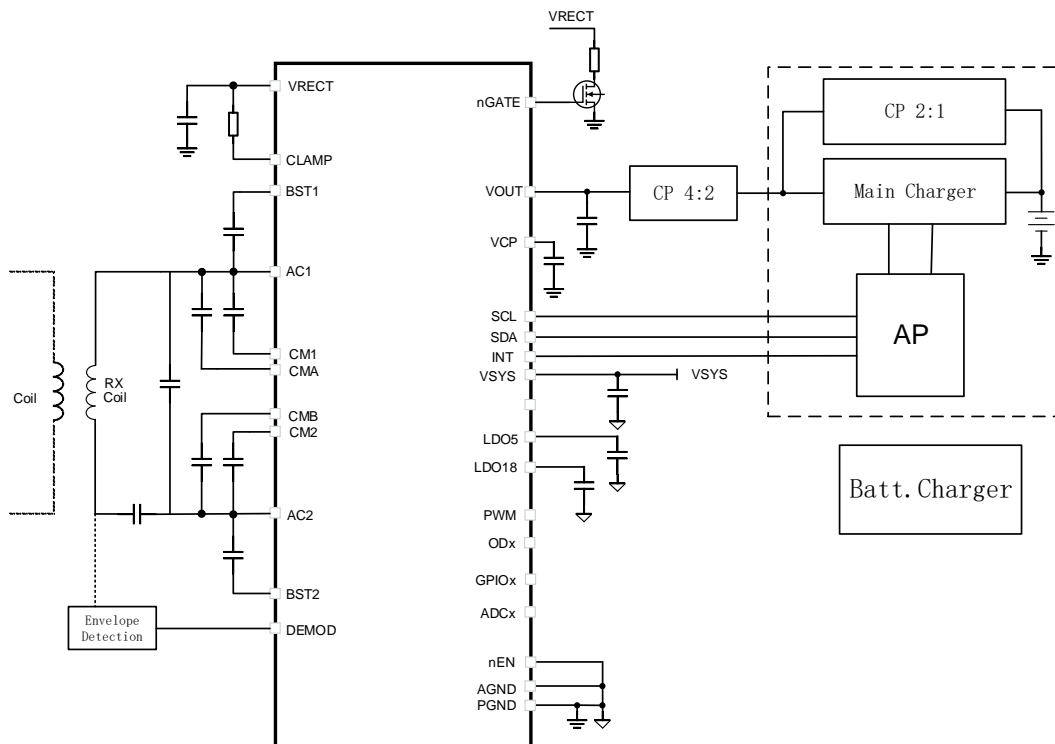
The TCW9050 includes under-voltage lockout, over voltage protection, over current protection and temperature sensor circuit to ensure the system safety.

The device is available in an ultra-small 2.90mm x 4.04mm WLCSP-54 package.

4 Device Information

ORDER NUMBER	PACKAGE	BODY SIZE
TCW9050_WED	54 pin WLCSP	2.90mm x 4.04mm

5 Typical Application Circuit



2 Features

- Deliver up to 50W power as a receiver and 15W in TX mode
- Integrated high-efficiency synchronous rectifier with ultra-low R_{DS}
- High performance LDO with programmable output voltage from 3.5V to 20V with 20mV step
- Embedded on-chip 32bit MCU and 32kB MTP for system design flexibility
- Support I2C interface and GPIOs
- 90% peak efficiency from TX input to RX output
- Reliable rectifier over voltage clamping
- Main LDO OCP/SCP/OPP protection
- Allow any cap application for Main LDO
- Ultra-low standby current
- Over temperature shutdown mode
- WLCSP-54 2.90mm x 4.04mm package

3 Applications

- Smart Phone
- Tablet PC
- Power Banks
- Other medical and industrial instrumentation