

## 1 DESCRIPTION

The MT5705 is a SoC (System on Chip) for magnetic induction based wireless power receiver.

It is fully compliant with the latest WPC Qi specification (Version 1.2.4) of BPP (Baseline Power Profile). It is capable of wireless charging for 5W of delivered power with fully programmable output voltage and current limit.

MT5705 has a very high overall AC to DC conversion efficiency (up to 95%), thanks to the optimized and adaptive full synchronous rectifier control, very small  $R_{dson}$  of power MOSFET's, and extremely low bias current.

With the exception of a few external passive components, this SoC integrates everything that is needed for a wireless power receiving function. It is composed of an ARM Cortex M0 processor with 2KB SRAM and 8KB OTP, full synchronous rectifier and special output LDO, robust and reliable over voltage, over current and over temperature protection circuits, various GPIO's and serial interfaces.

With the flexibility of SoC architecture and the unique implementation, the MT5705 is future proof in supporting WPC Qi specification's further updates and new proprietary protocols.

## 2 FEATURES

- 5W power delivery
- Fully programmable output voltage and current limit
- Embedded ARM Cortex M0 processor with 2KB SRAM and 8KB OTP
- Up to 95% AC input to DC output efficiency
- Reliable and unique over voltage, current, temperature protection
- Specially designed output LDO with output clamping and fast response to line and load transient
- WPC compliant and proprietary communication protocols support with hardware ASK modulation
- Independent I<sup>2</sup>C slave interface with additional GPIO's
- Halogen free and RoHS compliant
- Available in 4.00mm x 4.00mm QFN32L package

## 3 APPLICATIONS

- Standard wireless charging for TWS
- Wireless charging for wearable devices with high integration and small form factor
- Rx function for power banks where they can be wirelessly charged
- Other wireless power applications

## 4 TYPICAL APPLICATION CIRCUIT

