

1 DESCRIPTION

The MT5721 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 (maximum 5V) and current limit (maximum 1.2A).

MT5721 has a very high overall AC to DC conversion efficiency (up to 97%), 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 8KB SRAM and 16KB OTP, full synchronous rectifier and special output LDO, robust and reliable over voltage, over current and over temperature protection circuits, bi-directional communication unit and various GPIO's and serial interfaces.

With the flexibility of SoC architecture and the unique implementation, the MT5721 is future proof in supporting WPC Qi specification's further updates and new proprietary protocols.

2 FEATURES

- 5W power delivery
- Fully programmable output voltage (up to 5V) and current limit (up to 1.2A)
- Embedded ARM Cortex M0 processor with 8KB SRAM and 16KB OTP
- Up to 97% AC input to DC output efficiency
- Fully integrated bi-directional current sensing
- 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 and FSK modulation and demodulation
- Independent I²C slave and I²C master interface with additional GPIO's
- Halogen free and RoHS compliant
- 2.48mm x 3.87mm (6x9 ball array) WLCSP

3 APPLICATIONS

- Standard wireless charging for smart phones with 5W received power
- Wireless charging for wearable devices with high integration and small form factor
- Rx function for phones or power banks where they can be wirelessly charged
- Other wireless power applications

4 TYPICAL APPLICATION CIRCUIT

