

Wireless Power Transmitter/Receiver (TRx) Supporting Medium Power

Description

The SM5903 is a wireless power transmitter and receiver that meet the specification for WPC1.2.4 & PMA supporting up to 20W in case of receiver operation.

The SM5903 can be configured as transmitter or receiver to support an AC power signal through magnetic induction. When the device is operated as a wireless power transmitter, it uses an on-chip full/half-bridge inverter, pulse-width modulation (PWM) generator, modulator/demodulator for communication and a microcontroller to produce an AC power signal to drive an external L-C tank.

As a receiver, the SM5903 receives an AC power signal from a wireless transmitter and converts it into a rectified output voltage, which can be used to power devices or supply the charger input in mobile applications. The receiver (Rx) integrates a high efficiency synchronous full bridge rectifier and control circuits used to modulate the load to send message packets to the transmitter (Tx) to optimize power delivery for the magnetic induction. The integrated, low Rds-ON synchronous rectifier and ultra-low dropout linear regulator offer high efficiency making the product ideally suited for battery-operated applications.

The SM5903 includes MCU with 64KB EEPROM which are offering a high level of programmability. In addition, the device includes over-temperature, voltage protection and programmable current limit.

The SM5903 is available in 2.45mm x 3.75mm, 52-Bump WLCSP Package.

Applications

- Rx solution for Mobile and Smart Phones
- Tablets
- Portable Devices

Features

- Wireless Power Receiver with WPC1.2.4 & PMA Compliant Communication
- Delivers Power up to 20W
- TRx Function for Battery Power Sharing
- Compatible WPC1.2 for Tx
- Embedded Full Synchronous Rectifier with Low Rds-ON
- Embedded MCU with 64KB EEPROM
- Supporting Modulation and Demodulation for Two Way Communication
- High Performance LDO with Programmable Current and Voltage
- Dedicated Remote Temperature Sensing
- Protections for VRECT Overvoltage, VLDO Overcurrent and Overtemperature
- Frequency Detection & Measurement
- Support Full-speed I²C Interface and GPIOs

Ordering Information

Part	Temp. Range	Pb-Free	Package
SM5903	-40°C to +85°C	Yes	52-Bump WLCSP 0.4mm pitch

SM5903

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