

High-Power and High-Efficiency High-Integration Wireless Power Transmitter

1 Features

- AEC-Q100 Grade 1
- Wide Input Voltage: 3V to 21V
- Integrates high efficiency Full-Bridge FETs with 17mΩ R_{ds(on)}
- Support up to 30W output power
- FET Driver Optimized for Low EMI
- High accuracy input current sense with ±1% precision for FOD;
- Integrated high precision Q Factor Measurement
- Integrated high precision Resonant-Tank-Frequency Measurement
- Integrated Low-Error-Rate Digital Demodulation
- Voltage, peak current and average current demodulation mode selectable
- Address selectable for the multi-channel charging applications
- Integrate 5V LDO
- Support external VCC operation
- Robust OVP, OCP, SCP and OTP Protection
- INT pin available for Fault Indication
- I2C Interfaces
- Good thermal performance
- 5mm×4mm QFN Package

2 Applications

- Wireless Power Transmitter Compliant with WPC Extended Power Profile (EPP)
- Automotive 15-30W wireless power transmitter
- High-end Industry customer
- Motor Drivers

3 Descriptions

NU8057Q is a new generation of high-power and high-efficiency wireless power transmitter solution. It integrates four 17mΩ low R_{ds(on)} power FETs and has good thermal performance in high power applications.

The NU8057Q integrates all critical functions, such as high-efficiency power FETs, low-EMI FET drivers, bootstrap circuit, 5V integrated LDO power supply, high-precision input current measurement. The proprietary current-measurement circuit provides the accurate current reading used for the FOD (Foreign Object Detection) power measurement, in-band communication, Q factor detection, and digital demodulation.

In the high efficiency demodulation mode, DMO1 and DMO2 can output voltage and current DDM signal simultaneously. In the normal demodulation mode, only DMO1 can output DDM signal based on the register setting.

The NU8057Q also includes protection functions such as input under-voltage indication, over-voltage protection, over current protection and thermal shutdown. These provisions further enhance the reliability of the total system solution.

The NU8057Q is available in a compact 5mm×4mm QFN package.

4 Device Information

Part Number	Package	Dimension
NU8057Q	QFN21	5mm×4mm