NU1668: High Efficiency, High Integration Wireless Power Receiver and Transmitter

1 Features

- Integrated 27V High-efficiency Synchronous Rectifier.
- Integrated LDO to Provide Regulated Output Programmable VOUT from 3.5V to 21V with 10mV resolution.
- Low Dropout of LDO.
- Integrated Full Bridge Inverter and PWM Controller for transmitter.
- LDO5P0 Power Supply Path Management: Internal LDO or External VDD_TEST.
- Robust and Quick-responsive OVP, OCP, OTP, OPP and SCP.
- High Accuracy Current Sense, Accuracy is <2%.
- 10 Channels, 14bit ADC.
- Integrated 32Bit MCU Core.
- 400kHz I^2C Interface.
- In-system Programmability.
- Build-in Bi-directional Communications: ASK/FSK Modulation and ASK/FSK Demodulation.
- Integrated Q Factor Measurement.
- Programmable FOD Gain and Offset.
- INT Output.
- Support MST function.
- 54-WCSP 4mm x 2.8mm, 0.4mm pitch.

2 Applications

- WPC v1.3 Compliant Receiver with 30W Receiver output power(Maximum 50W is available).
- WPC 5W BPP Compliant Transmitter for Receiver power output with Maximum 10W Transmitter power input.
- Smartphones, Power Bank.
- Medical, Industrial and Consumer Equipment.

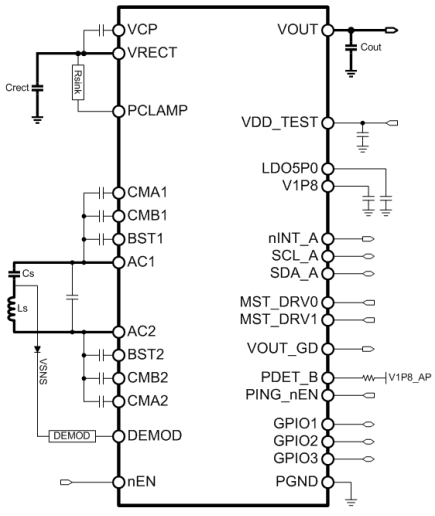
3 Descriptions

NU1668 is a highly integrated and efficient wireless power receiver and suitable for up to 50W output power application. It integrates a synchronous rectifier and a programable low drop-out regulator. The regulator can provide a wide range regulated voltage. NU1668 can conduct bi-directional communication with a transmitter system through ASK and FSK. The communication is compliant with WPC.

NU1668 can also be operated as a transmitter (Tx) to charge another receiver.

NU1668's flexibility is provided by an on-chip 32Bit MCU which can customize and optimize the device for various applications and custom needs. The programmability includes output power, bidirectional communication scheme, system protection, status reporting and error reporting.

NU1668 protection includes standard such as input under-voltage lockout, short-circuit protection, over-voltage protection, over-current protection, over-power protection and over-temperature protection.



Simplified Application Diagram