# 3W Qi V1.3-Compliant Wireless Power Receiver and Power Supply

## Features

- Integrated Wireless Power Supply Receiver Solution
  - High Efficiency Full Synchronous Rectifier.
  - WPC Qi V1.3 Compliant communication Control
  - Single IC Required Between RX Coil and Output
- WPC Qi V1.3 FOD Function
  - High Accurate Current Sense
  - Easy to debug for certification by Resistance
- Current limit by external programming resistor
- Dynamic Rectifier $V_{RECT}$
  - Improve the Load Transient Response
  - Optimize the dynamic efficiency for full load output
- Rectifier Overvoltage Clamp ($V_{OVP}$=18V)
- Support 18-V Maximum Input
- Over Temperature, Over Voltage and Over Current Protection
- LED Output Indication
- Charging Complete and Fault Host Control
- VOUT with High Voltage Protection and Reverse current prevention
- QFN 3mm*3mm 16Pin Pack
- Specially optimized for small power and small or irregular coil applications

## Applications

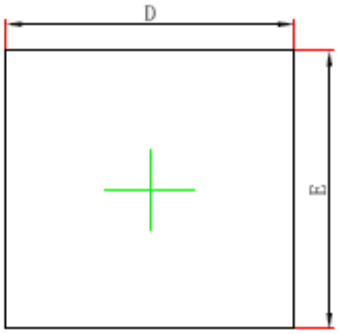
- Wearable product
- Hand-held Device
- Portable Products（Audio, Media, Headsets）

## Description

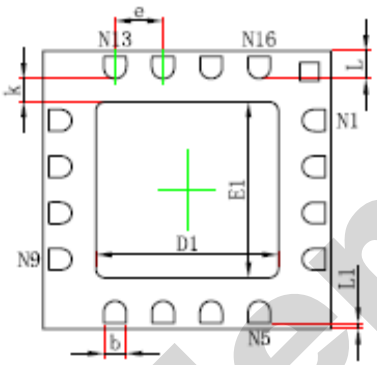
- CP2022 is a single-chip, advanced, flexible, secondary-side device for wireless power transfer in portable applications capable of providing up to 3W. It has high integration, high efficiency, low power consumption.
- CP2022 receiver the power that uses the near field electromagnetic induction principle, the power transfer is through coupling between the transmitter coil (primary) and receiver coil (secondary), Global feedback is established from the secondary to the primary to control the power transfer process using the Qi V1.3 protocol.
- CP2022 integrated a low resistance synchronous rectifier (AC to DC), low-dropout regulator (LDO), digital control, and accurate voltage and current loops to improve the high efficiency and decrease the power dissipation.
- CP2022 also integrated a digital controller that comply with the WPC V1.3 standard, it can calculate the amount of power received by the mobile device, the controller then communicates this information to the transmitter to allow the transmitter to determine if a foreign object is present within the magnetic interface and introduces a higher level of safety within magnetic field. This foreign object detection (FOD) method is part of requirement under the WPC V1.3 specification.
- CP2022 Output stage is LDO, the output voltage is adjusted dynamically according to the output current to achieve the best transient and efficiency.
- CP2022 Output voltage and current can be flexibly configured according to the application case.

# Package Information

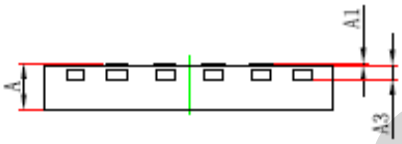
**QFNWB3x3-16L (P0.50T0.60) Package Outline Dimensions**




Top View




Bottom View




Side View

| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|---|---|---|---|---|
| | Min. | Max. | Min. | Max. |
| A | 0.450/0.500/0.550 | 0.550/0.600/0.650 | 0.018/0.020/0.022 | 0.022/0.024/0.026 |
| A1 | 0.000 | 0.050 | 0.000 | 0.002 |
| A3 | 0.152REF. | | 0.006REF. | |
| D | 2.924 | 3.076 | 0.115 | 0.121 |
| E | 2.924 | 3.076 | 0.115 | 0.121 |
| D1 | 1.800 | 2.000 | 0.071 | 0.079 |
| E1 | 1.800 | 2.000 | 0.071 | 0.079 |
| k | 0.200MIN. | | 0.008MIN. | |
| b | 0.230 | 0.330 | 0.009 | 0.013 |
| e | 0.500TYP. | | 0.020TYP. | |
| L | 0.250 | 0.350 | 0.010 | 0.014 |
| L1 | 0.013 | 0.113 | 0.000 | 0.004 |