

Description

The P9415 is a highly-integrated single-chip wireless power receiver targeted for 30W applications. The device can be configured to receive or transmit an AC power signal through magnetic induction. When the device is configured as a wireless power transmitter, it uses an on-chip full/half-bridge inverter, a PWM generator, and a modulator/demodulator for communication, and a micro-controller to produce an AC power signal to drive external L-C tank to Wattshare.

As a receiver, the P9415 receives an AC power signal from a wireless transmitter and converts it into rectified output voltage, which can be then used to power devices or supply the charger input in mobile applications. The P9415 feature Multiple-time programmable (MTP) non-volatile memory to easily update control firmware and device functions.

The P9415 receiver accommodates up to 20V out of the on-board LDO with the ultra-accurate current sense capability necessary for high-power applications. It is footprint compatible with IDT's existing P9382A 15V receiver to provide a compelling upgrade option delivering even faster charging times.

The device includes over-temperature and robust over voltage protection. Fault conditions associated with power transfer are managed by an industry-leading 32bit ARM® Cortex®-M0 processor offering a high level of programmability while consuming extremely low standby power. The processor can also control GPIOs to indicate operating and fault modes. The P9415 is available in an ultra-small WLCSP-53 package.

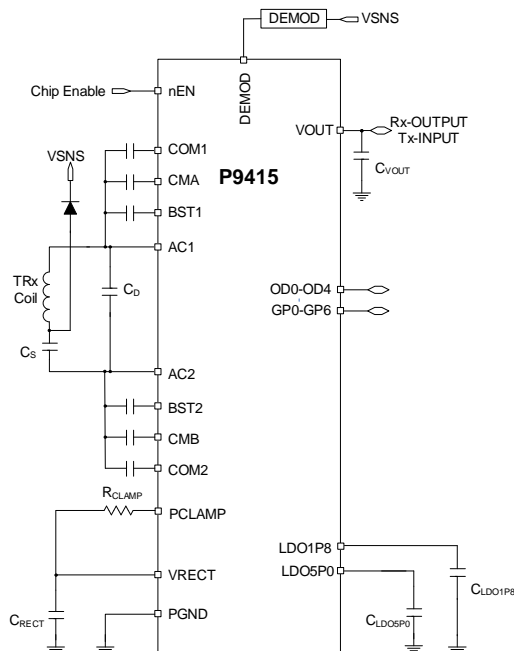
Features

- Delivers up to 30W as a receiver
- Wattshare up to 10W in Transmit mode
- Footprint compatible with IDT's existing P9382A 15V receiver
- WPC 1.2.4 compatible
- Supports proprietary fast charging modes with authentication
- Single Chip Medium Power Wireless Solution with 24kB Multiple-time programmable (MTP) non-volatile memory
- Full synchronous rectifier with low resistance switches
- High Performance LDO
- Embedded 32-bit ARM Cortex-M0 processor
- Reliable over-voltage clamping
- Best-in-class EMI
- Proprietary Rx-to-Tx modulation/demodulation for Bi-Directional communication
- Supports I²C 400kHz standard interface and GPIOs
- Package: 6 × 9 ball array, 2.82 × 4.22 mm, 53-WLCSP package with 0.4mm ball pitch

Typical Applications

Wireless power solution for Mobile Applications

Typical Applications Schematic

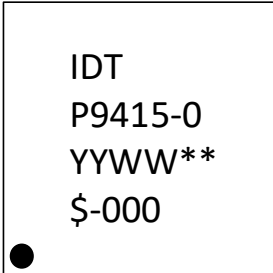


Package Outline Drawings

The package outline drawings are appended at the end of this document and are accessible from the link below. The package information is the most current data available.

www.idt.com/document/psc/awq53-package-outline-drawing-2820-x-4220-x-0500-mm-body-040mm-pitch-dsbga

Marking Diagram



Line 1. The company name.

Line 2. The part number.

Line 3. "YYWW" is the last 2 digits of the year and week that the part was assembled. "***" denotes sequential lot number.

Line 4. "\$" denotes assembly mark code. "000" denotes dash code.

Ordering Information

Orderable Part Number	Package	MSL Rating	Shipping Packaging	Ambient Temperature
P9415-0AWQI8	53-WLCSP, 2.82 × 4.22 × 0.4 mm pitch	MSL 1	Tape and Reel	-40° to +85°C



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