Description

The P9247-V is a highly integrated, magnetic induction, wireless power transmitter that supports up to 15W in compliance with the WPC-1.2.4 specification and 30W in proprietary applications. The device is compatible with all popular wireless charging protocols including the WPC Baseline Power Profile (BPP), Extended Power Profile (EPP), up to 7.5W charging for iPhones, and Android proprietary fast charging modes. This system on-chip solution (SoC) operates with an input voltage range of 5V to 19V and supports various types of wall adapters.

The P9247-V includes an industry-leading 32-bit ARM® Cortex®-M0 processor, offering a high level of programmability and extremely low standby power consumption.

The P9247-V generates power through the power coil, detects the presence of a wireless power receiver, decodes the communication packets from the receiver, and adjusts the transmitted power by controlling the voltage based on feedback from the receiver.

The transmitter Features support for Ventiva® Ionic Cooling Engine (ICE™). P9247-V application firmware integrates drivers for the cooling engine. ICE operation is based upon the principle of ionization which creates airflow without any moving parts and without any noise. This allows for high power transmitter design without needing a fan.

The P9247-V is available in a lead-free, space-saving 48-VFQFPN package. The product is rated for a -40ºC to +85ºC operating temperature range.

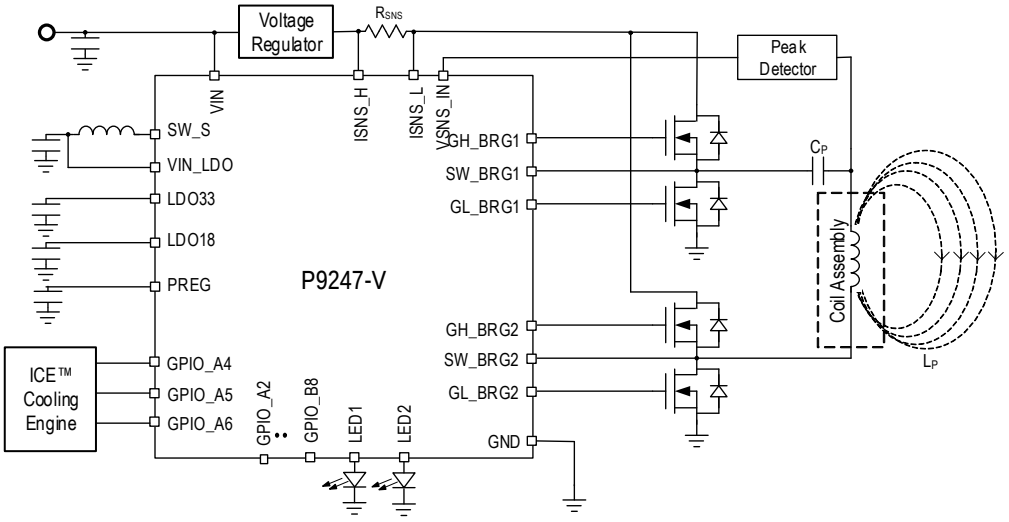
Features

- Power transfer up to 30W in proprietary mode and 15W at receiver side in EPP mode
- Ionic Cooling Engine (ICE™) support which allows for airflow without any moving parts and noise
- Real-time foreign object detection (FOD)
- Wide input voltage range: 5V to 19V
- Supports various types of wall adapters
- WPC-1.2.4 compatible
- Integrated drivers for external power MOSFETs
- Embedded 32-bit ARM® Cortex®-M0 processor (trademark of ARM, Ltd.)
- Simultaneous voltage and current demodulation scheme for WPC communication
- Integrated current sense amplifier
- Low standby power
- Active-LOW enable pin for electrical on/off
- Over-current and over-temperature protection
- Supports I2C interface
- -40°C to +85°C ambient operating temperature range
- 6 × 6 mm 48-VFQFPN RoHS-compliant package

Typical Applications

- High-power transmitter designs for Smartphones
- Proprietary transmitter pads for 30W power banks

Typical Application Circuit



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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/48-vfqfpn-package-outline-drawing-60-x-60-x-090-mm-body-epad-42-x-42-mm-040mm-pitch-ndg48p2

Special Notes: P9247-V 48-VFQFPN Package Assembly

- Unopened dry packaged parts have a one-year shelf life.
- The HIC indicator card for newly-opened dry packaged parts should be checked. If there is any moisture content, the parts must be baked for a minimum of 8 hours at 125°C within 24 hours prior to the assembly reflow process.

Marking Diagram

- Lines 1 and 2 indicate the part number.
- Line 3 indicates the following:
  - "#" denotes stepping.
  - "YY" is the last two digits of the year; "WW" is the work week number when the part was assembled.
  - "$" denotes the mark code.
- "LOT" denotes the lot number.

Ordering Information

Orderable Part Number	Description and Package	MSL Rating	Carrier Type	Ambient Temperature
P9247-VBNDGI[a]	P9247-V Wireless Power Transmitter with ICE™ for 30W applications with only bootloader pre-programmed, 6 × 6 mm 48-VFQFPN package	MSL3	Tray	-40°C to +85°C
P9247-VBNDGI8[a]	P9247-V Wireless Power Transmitter with ICE™ for 30W applications with only bootloader pre-programmed, 6 × 6 mm 48-VFQFPN package	MSL3	Reel	-40°C to +85°C

[a] The P9247-VB has only the bootloader pre-programmed into internal one-time programmable (OTP) memory. The P9247-VB must be used in conjunction with an external Winbond W25X20CLUXIG flash.

Revision History

Revision Date	Description of Change
December 17, 2019	Initial release.

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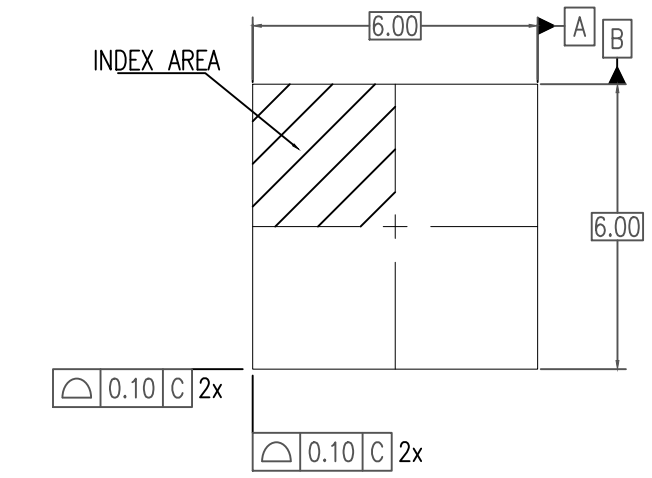
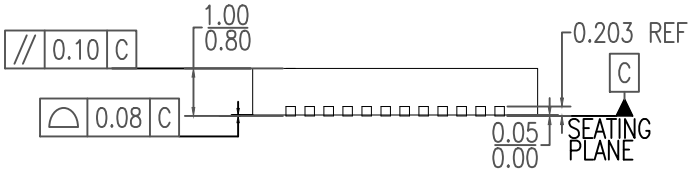
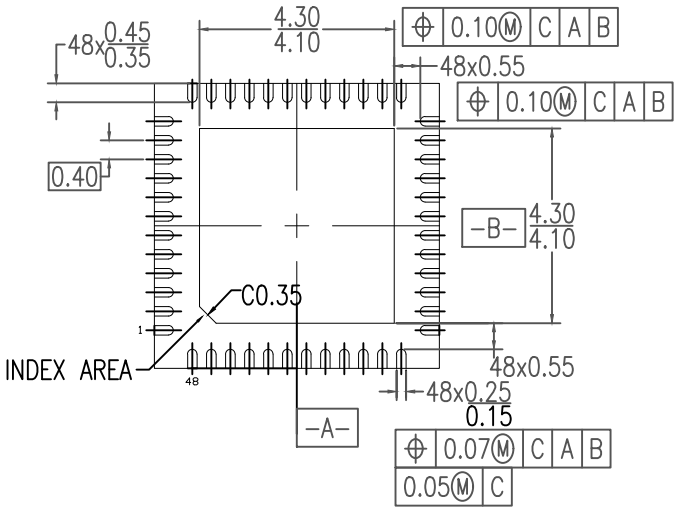


TOP VIEW

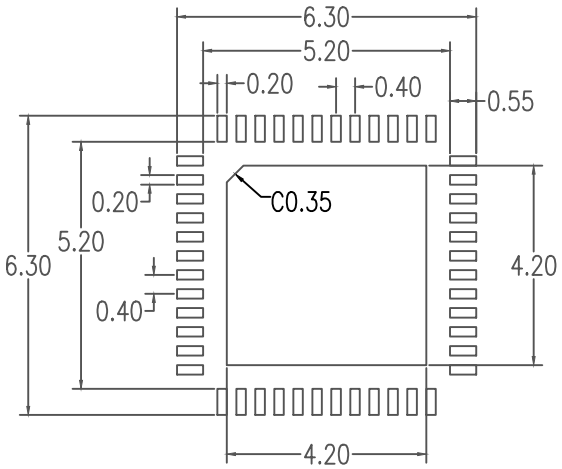


SIDE VIEW



BOTTOM VIEW

NOTES:
1. ALL DIMENSIONING AND TOLERANCING CONFORM TO ANSI Y14.5M–1982
2. ALL DIMENSIONS ARE IN MILLIMETERS.



RECOMMENDED LAND PATTERN DIMENSION

NOTES:

1. ALL DIMENSION ARE IN MM. ANGLES IN DEGREES.
2. TOP DOWN VIEW. AS VIEWED ON PCB.
3. LAND PATTERN RECOMMENDATION PER IPC-7351B GENERIC REQUIREMENT FOR SURFACE MOUNT DESIGN AND LAND PATTERN.

Package Revision History		
Date Created	Rev No.	Description
July 24, 2018	Rev 02	New Format Change QFN to VFQFPN, Recalculate Land Pattern
Sept 9, 2014	Rev 01	Add Chamfer