

## MAXQ314

# Single-Phase Power-Measurement IC with I<sup>2</sup>C Interface

Single-Phase Power Measurement IC Saves Space in a Small, 5mm x 5mm Package

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### Status

All versions are No Longer Available. See [Ordering Information](#) for recommended replacements.

### Description

The MAXQ314 is a dedicated power-measurement IC that collects and calculates voltage, current, power, and power factor for a single-phase load. The results can be retrieved by an external master through the internal I<sup>2</sup>C bus. This bus is also used by the external master to configure the operation of the MAXQ314 and monitor the status of operations.

The MAXQ314 performs voltage and current measurements using an integrated ADC that can measure voltage and current. Other values such as power are calculated from that data. The MAXQ314 also has an integrated temperature sensor that provides the die temperature on demand. The internal current amplifier produces up to 32x gain and the voltage amplifier gain is 1x.

Designers must have the following documents to fully use all the features of this device. The data sheet contains pin descriptions, feature overviews, and electrical specifications. Errata sheets contain deviations from published specifications. The user's guides offer detailed information about device features and operation.

- MAXQ314 IC data sheet
- MAXQ314 revision-specific errata sheet ([Click here for availability](#))
- MAXQ Family User's Guide

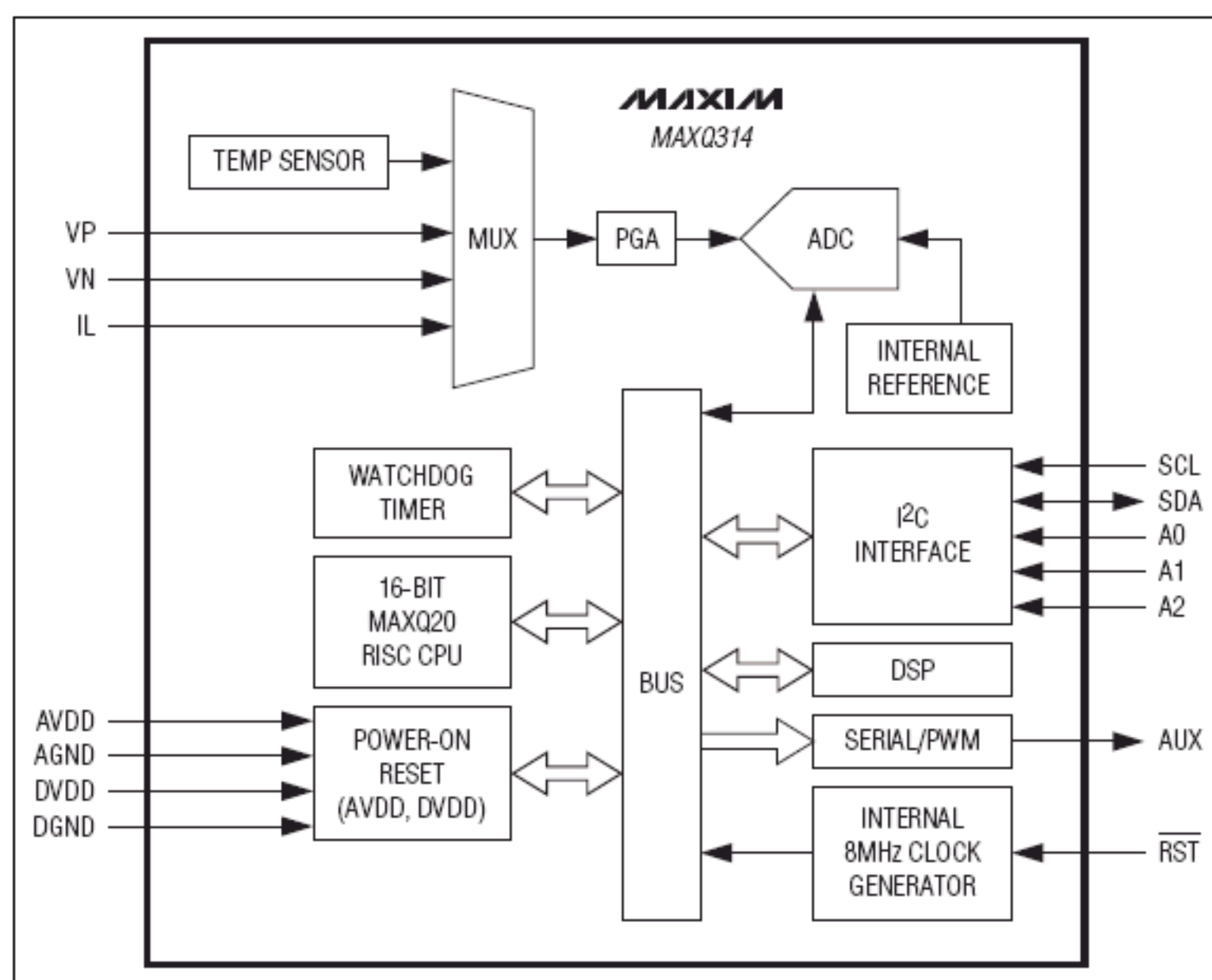
### Key Features

- High-Performance, Low-Power DSP Core
- On-Chip Digital Temperature Sensor
- Precision Internal Voltage Reference
- Active Power (W), <math>\pm 0.5\%</math> Error
- Reactive Power (VAR), <math>\pm 0.7\%</math> Error
- Apparent Power (VA), <math>\pm 0.7\%</math> Error
- Power Factor, <math>\pm 1\%</math> Error
- Voltage RMS, <math>\pm 0.2\%</math> Error
- Current RMS, <math>\pm 0.5\%</math> Error
- I<sup>2</sup>C-Compatible Serial Interface
- Continuous Output of I<sub>RMS</sub> in Serial or PWM

### Applications/Uses

- Single-Phase AC Power Monitoring

### Diagram



Block Diagram

### Technical Documents

- Product Guide 5168 [Microcontrollers](#)
- User Guides & Manuals 4811 [MAXQ® Family User's Guide](#)

### Product Guides

- [Microcontrollers \(PDF\)](#)

### Reliability Reports

- Reliability Report: [MAXQ314.pdf](#)

### Software/Models

none

### Ordering Information

Filters: Part Number:  Package:  Any Temperature:  Any  Tape and Reel  Sample

Part Number	Free Sample	Buy	Status	Recommended Replacement	Package: TYPE PINS FOOTPRINT DRAWING CODE/VAR *	Temp	RoHS/Lead-Free? Materials Analysis
MAXQ314+		N/A	No Longer Available	78M6612	TQFN;20 pin;26 mm <sup>2</sup> Outline Drawing:21-0140 (PDF) Land Pattern: 90-0009 (PDF) Use pkgcode/variation: T2055+4*	-40°C to +85°C	RoHS/Lead-Free: Lead Free Materials Analysis
MAXQ314-KIT		N/A	No Longer Available	78M6612-EVM-1	KIT; Land Pattern: Not Available	0°C to +70°C	See data sheet
MAXQ314-RAN+		N/A	No Longer Available	78M6612	TQFN; Land Pattern: Not Available	-40°C to +85°C	See data sheet

#### Notes:

- Other options and links for purchasing parts are listed at: <http://www.maxim-ic.com/sales>.
- Didn't Find What You Need? Ask our applications engineers. Expert assistance in finding parts, usually within one business day.
- Part number suffixes: T or T&R = tape and reel; += RoHS/lead-free; #= RoHS/lead-exempt; -D = drypack; -U/+U on DS parts = cut tape. More: See [Full Data Sheet](#) or [Maxim Product Naming Conventions](#).
- \* Some packages have variations, listed on the drawing. "PkgCode/Variation" tells which variation the product uses. Note that "+", "#", "-" in the part number suffix describes RoHS status. Package drawings may show a different suffix character.

### More Information

[MAXQ Family User's Guide](#)

#### Your Comments

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### Didn't Find What You Need?

- [Next Day Product Selection Assistance from Applications Engineers](#)
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