

# TPS650330-Q1 Automotive Camera PMIC

## 1 Device Overview

### 1.1 Features

- Qualified for automotive applications
- AEC-Q100 grade 1 qualified
  - -40°C to +125°C ambient operating temperature range
- Three step-down converters:
  - BUCK1  $V_{IN}$  range from 4 V to 18.3 V
  - BUCK1 output current up to 1500-mA
  - BUCK2 and BUCK3  $V_{IN}$  range from 3.0 V to 5.5 V
  - BUCK2 and BUCK3 output current up to 1200-mA
- Spread-Spectrum Clock (SSC) generation for reduced EMI
- 2.3-MHz Forced fixed switching frequency PWM operation
- One low dropout (LDO) regulator:
  - $V_{IN}$  range from 3.0 V to 5.5 V
  - Low noise
  - Adjustable output voltage via I<sup>2</sup>C
  - Up to 300-mA output current
- 4.0-mm × 4.0-mm 24-Pin VQFN with wettable flanks

### 1.2 Applications

- Automotive camera modules
  - Surround view camera modules
  - Rear view camera modules
  - Driver monitor camera modules
  - Power over coax (POC) camera modules
  - E-Mirror camera modules

### 1.3 Description

The TPS650330-Q1 device is a highly integrated power management IC for automotive camera modules. This device combines three step down converters and one low-dropout (LDO) regulator. The BUCK1 step-down converter has an input voltage range up to 18.3 V for connections to Power over Coax (PoC). All converters operate in a forced fixed-frequency PWM mode. The LDO can supply 300 mA and operate with an input voltage range from 3.0 V to 5.5 V. The step-down converters and the LDO have separate voltage inputs that enable maximum design and sequencing flexibility.

The TPS650330-Q1 is available in a 24-pin VQFN package (4.0 mm × 4.0 mm).

**Table 1-1. Device Information<sup>(1)</sup>**

PART NUMBER	PACKAGE	BODY SIZE (NOM)
TPS650330-Q1	VQFN (24)	4.0 mm × 4.0 mm

(1) For all available packages, see the orderable addendum at the end of the data sheet.



### 1.4 Application Circuit

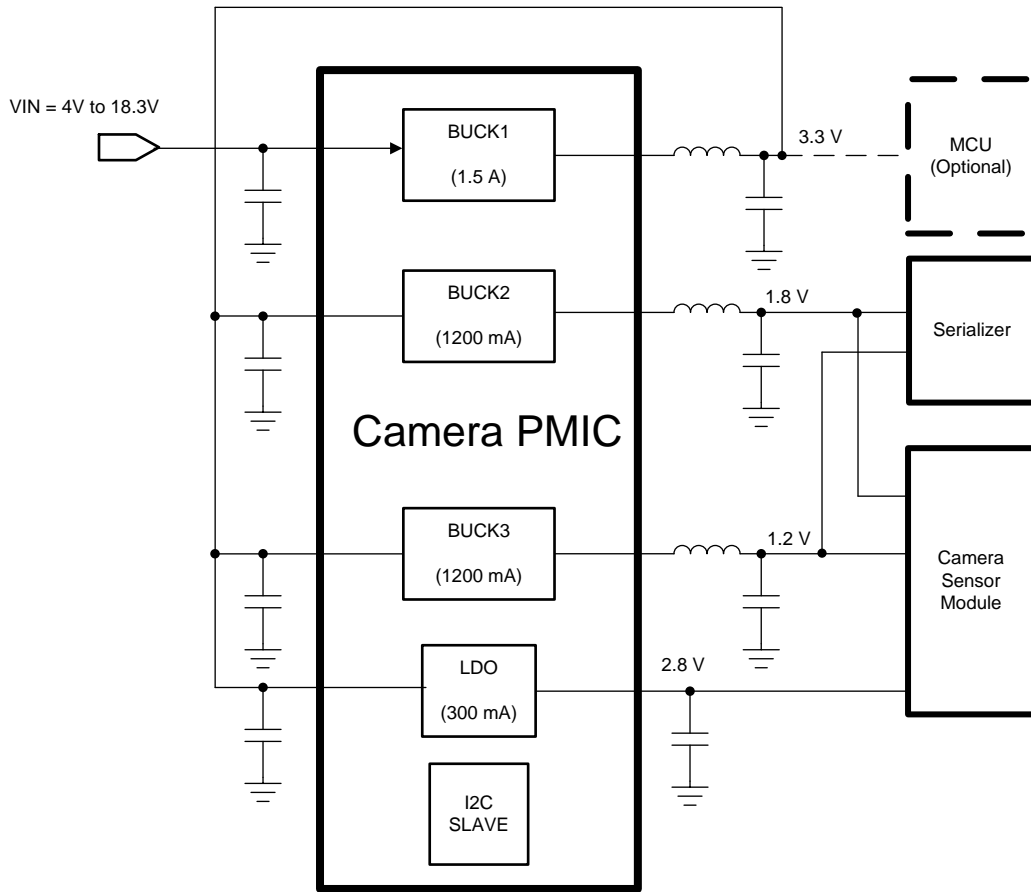


Figure 1-1. TPS650330-Q1 Application Circuit

PRODUCT PREVIEW

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## 2 Revision History

NOTE: Page numbers for previous revisions may differ from page numbers in the current version.

DATE	REVISION	NOTES
November 2017	*	Initial Release

## 3 Device and Documentation Support

### 3.1 Receiving Notification of Documentation Updates

To receive notification of documentation updates, navigate to the device product folder on ti.com. In the upper right corner, click on *Alert me* to register and receive a weekly digest of any product information that has changed. For change details, review the revision history included in any revised document.

### 3.2 Community Resources

#### 3.2.1 *Third-Party Products Disclaimer*

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### 3.3 Trademarks

All trademarks are the property of their respective owners.

### 3.4 Electrostatic Discharge Caution



This integrated circuit can be damaged by ESD. Texas Instruments recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage.

ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet its published specifications.

### 3.5 Glossary

[TI Glossary](#) This glossary lists and explains terms, acronyms, and definitions.

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