

RSM3223 • RSM3224 • RSM3235 2.4V to 5V, 1A • 2A • 3A Buck CoolModule™

Features

High-Performance Power Conversion

- 2.4V to 5V Input Voltage Range
- Up to 1A (RSM3223), 2A (RSM3224) or 3A (RSM3235) Output Current
- 1% Output Voltage Accuracy
- 2MHz Switching Frequency
- Adjustable Output with 0.6V Feedback Reference
- Fixed 1.2V, 1.8V, 2.5V, or 3.3V Output Options

Advanced Control & Operating Modes

- Constant-On-Time (COT) Control for Fast Transient Response
- Automatic PFM/PWM Mode for Improved Light-Load Efficiency
- Forced PWM Mode for Fixed-Frequency Operation

Integrated Monitoring & Protection

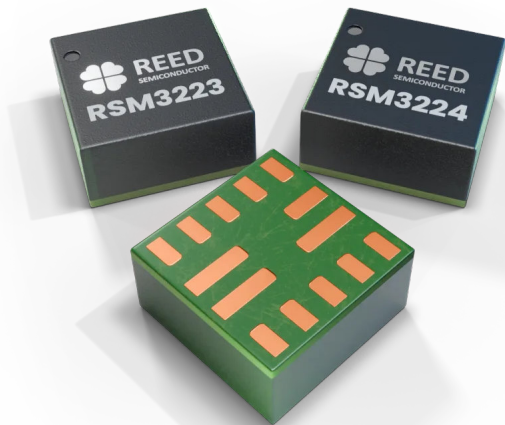
- Power-Good Output
- Output Discharge Function
- Overcurrent and Short-Circuit Protection

Integrated Inductor & Compact Packaging

- Integrated Inductor
- Compact 2.5mm × 2.5mm × 1.2mm, 14-pin LGA package

Applications

- Optical Transceiver Modules
- Smartphones & Mobile Devices
- Wearable Electronics
- Camera Modules
- Industrial IoT (IIoT) & Smart Sensors
- Narrowband IoT (NB-IoT) Devices



Description

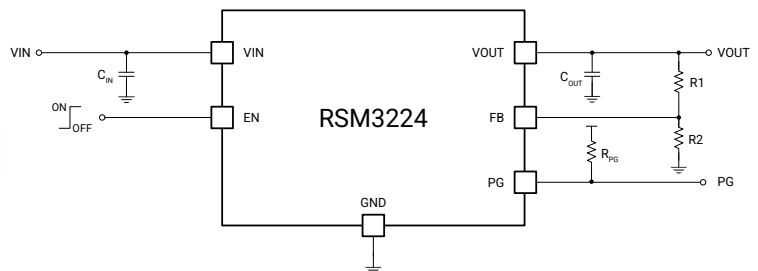
The RSM3223, RSM3224 and RSM3235 are compact, high-efficiency synchronous buck CoolModule™ devices with integrated inductors, delivering up to 1A and 2A of output current, respectively. Designed for space-constrained point-of-load (PoL) applications, both devices operate from a 2.4V to 5V input supply and integrate power conversion and magnetic components in a compact 2.5mm × 2.5mm × 1.2mm, 14-pin LGA package.

The devices employ Constant-On-Time (COT) control for fast transient response and support selectable PFM/PWM or forced PWM operation. Automatic transitions between PFM and PWM improve light-load efficiency, while forced PWM mode maintains 2MHz switching operation.

Both devices are available with an adjustable output using a 0.6V feedback reference or four fixed-output options: 1.2V, 1.8V, 2.5V, and 3.3V. Fixed-output variants eliminate the need for an external feedback resistor divider. Integrated power-good monitoring, output discharge, and overcurrent and short-circuit protection further simplify system design.

PART NUMBER	I _{OUT} (A)	PACKAGE	SIZE (mm)
RSM3223	1	LGA-14	2.5 × 2.5 × 1.2
RSM3224	2	LGA-14	2.5 × 2.5 × 1.2
RSM3235	3	LGA-14	2.5 × 2.5 × 1.2

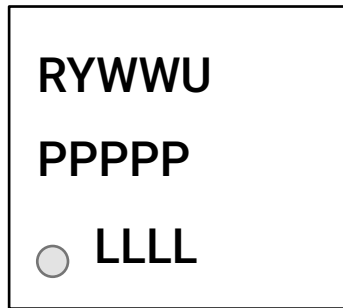
Typical Application Schematic



Ordering Information

PART NUMBER	PACKAGE	SIZE (mm)	MSL RATING	SHIPPING METHOD	PACKAGE MARKING
RSM3223	LGA-14	2.5 × 2.5 × 1.2	Level - 3	4000u Tape & Reel	M223
RSM3224	LGA-14	2.5 × 2.5 × 1.2	Level - 3	4000u Tape & Reel	M224
RSM3235	LGA-14	2.5 × 2.5 × 1.2	Level - 3	4000u Tape & Reel	TBD

Top Marking



Line 1

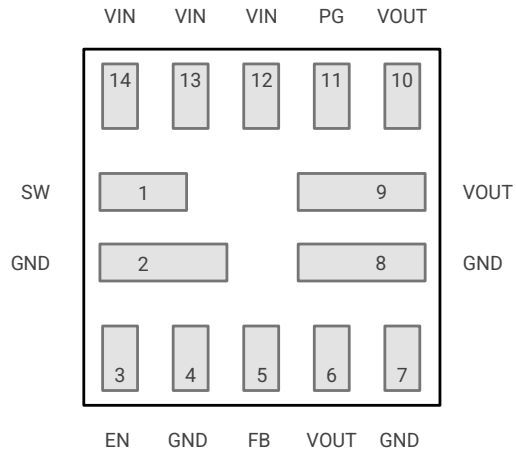
- R: Prefix of Reed Semiconductor (R is replaced by E for engineering lots)
- YY: Year code
- WW: Week code

Line 2

- PPPPP: Truncated part number

Line 3

- LLLL: Lot code

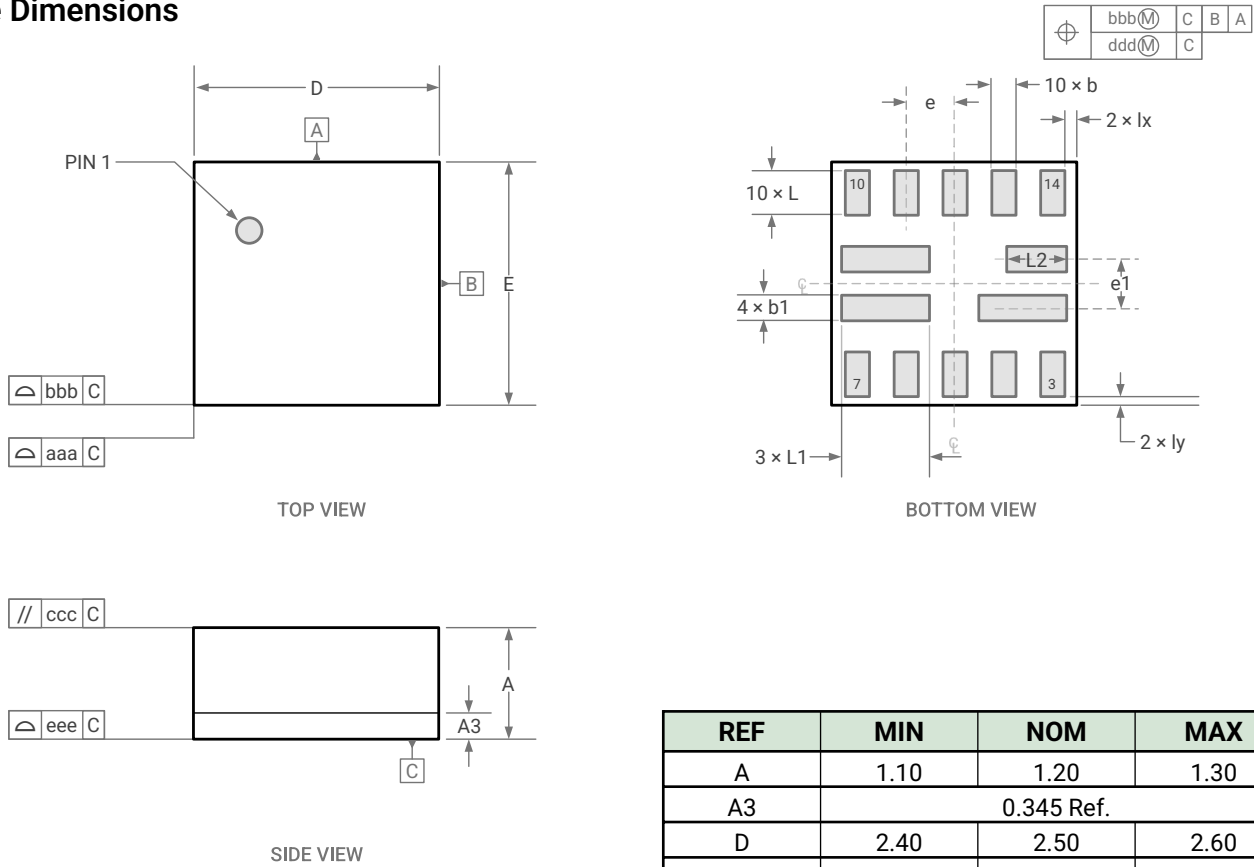
Package Reference**LGA-14 (2.5mm × 2.5mm × 1.2mm)**

Pin Descriptions

PIN	NAME	TYPE	DESCRIPTION
1	SW	P	Internal switching-node pad. Leave unconnected.
2, 4, 7, 8	GND	G	Ground. Connect to the ground terminals of the input and output capacitors using short, low-impedance connections.
3	EN	I	Enable input. Drive high to enable the device or low to disable it. An internal pulldown resistor is disconnected once the device is enabled and the output is regulated. The pulldown reconnects when a low level is detected.
5	FB	I	Output voltage feedback. For fixed-output variants, connect directly to the output capacitor using a short trace. For adjustable-output variants, connect to VOUT through a resistor divider.
6, 9, 10	VOUT	P	Regulated output voltage.
11	PG	O	Open-drain power-good output. Connect to VIN or another suitable pull-up voltage through a 1kΩ to 100kΩ resistor.
12–14	VIN	P	Input supply voltage. Place a 4.7μF or larger ceramic bypass capacitor close to the VIN pins.

Type: I = Input, O = Output, I/O = Bidirectional, P = Power, G = Ground, — = No Connect.

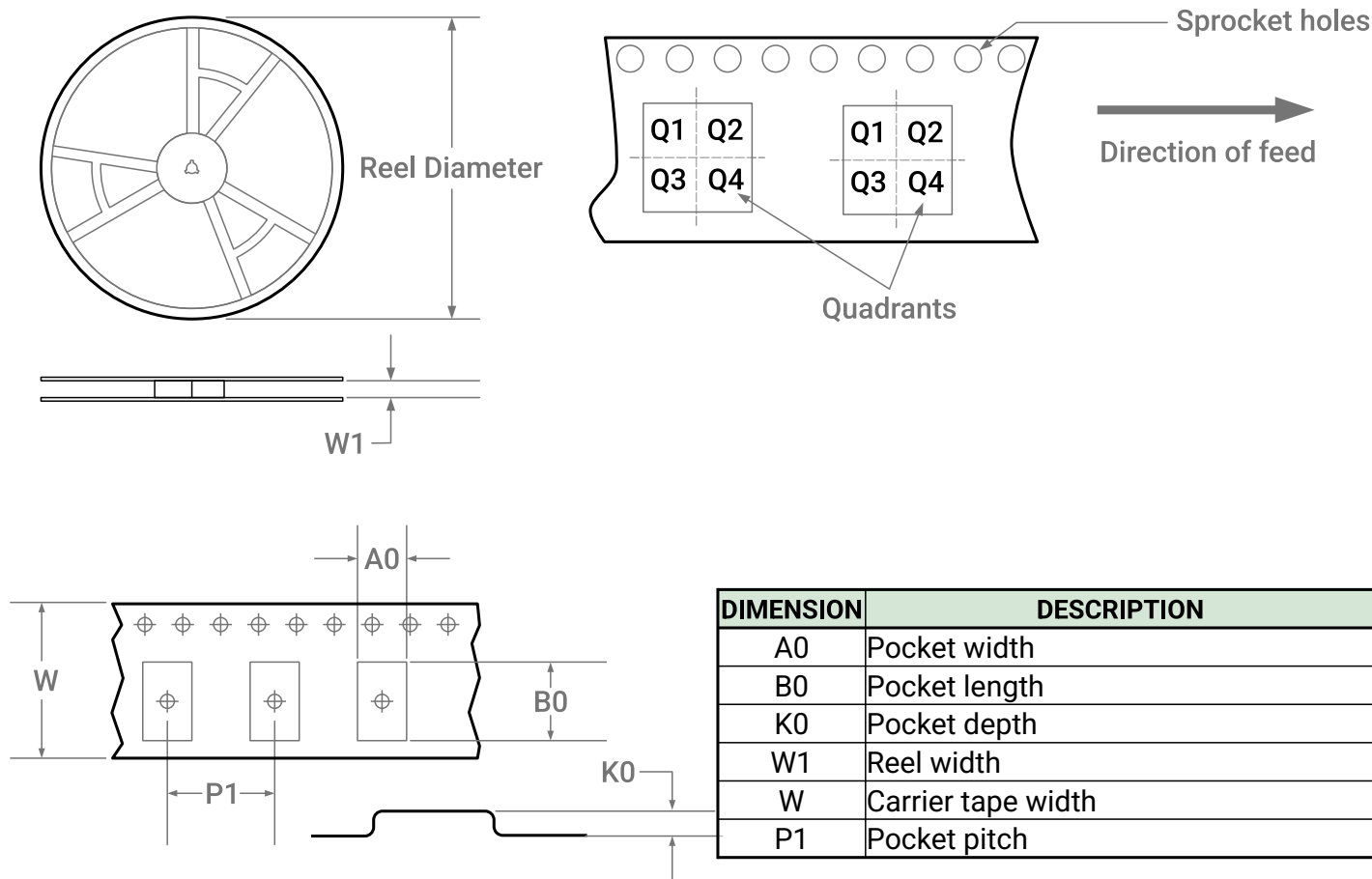
Package Dimensions



Notes

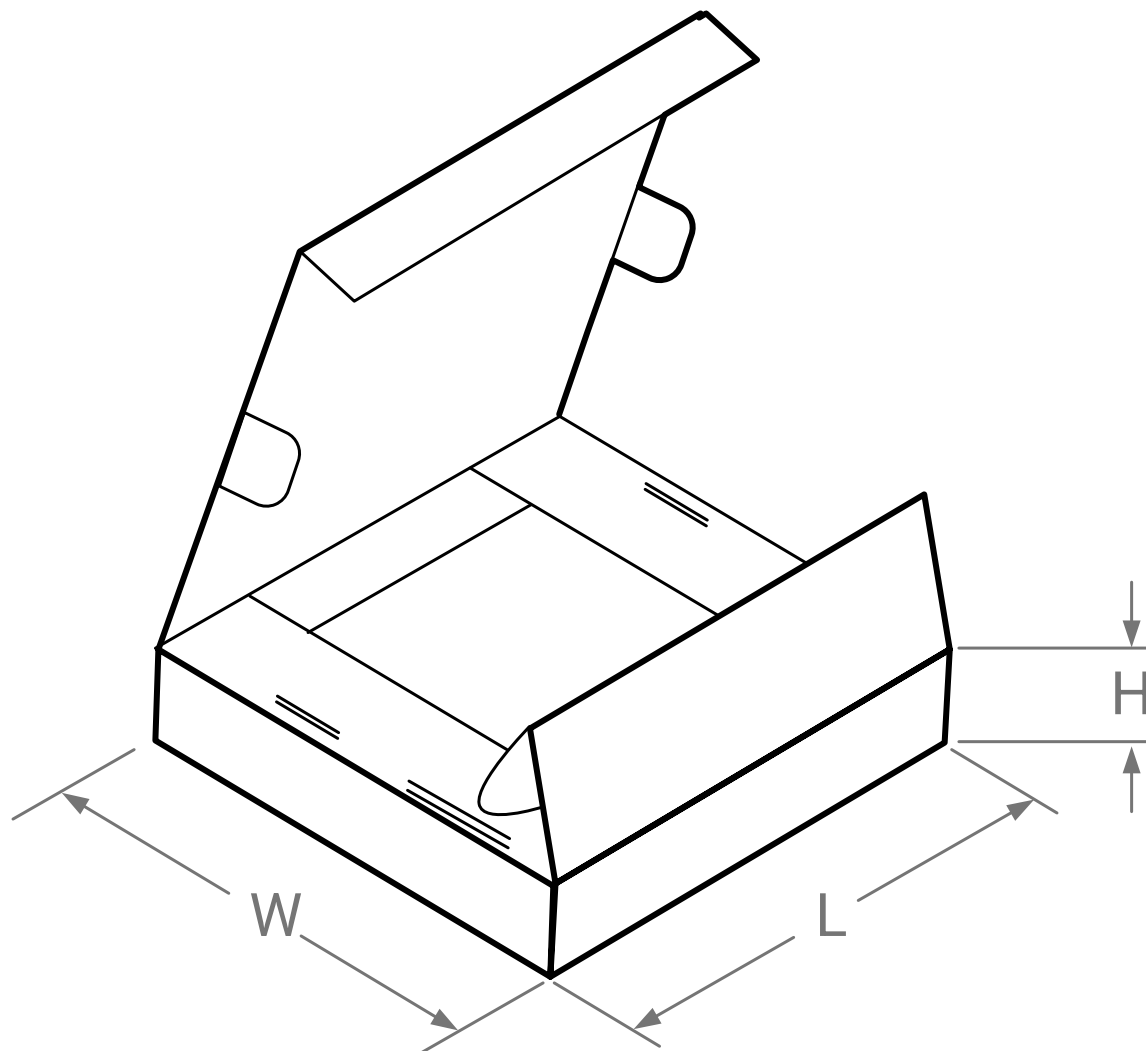
1. All dimensions are in millimeters.
2. Dimensions and tolerance per JEDEC MO-200.
3. Drawings are not to scale

Tape and Reel Information



PACKAGE SIZE	REEL DIAMETER	W1	A0	B0	K0	P1	W	QUADRANT
2.5 × 2.5	TBD	12.8	2.8	2.8	1.45	8.0	12.0	Q1

- Note:
1. All dimensions are nominal
 2. All dimensions are in millimeters (mm)

Pizza Box Dimensions


PACKAGE SIZE	UNITS / BOX	LENGTH	WIDTH	HEIGHT
2.5 × 2.5	4000	TBD	TBD	TBD

Notes:

1. All measurements are in millimeters;
2. All measurements are nominal.