

RSM3206 • RSM3207 2.4V to 5.5V, 4A • 6A Buck CoolModule™ with I²C

Features

High-Performance Power Conversion

- 2.4V to 5.5V Input Voltage Range
- Up to 4A (RSM3206) or 6A (RSM3207) Output Current
- 0.4V to 3.3V Output Voltage Range
- $\pm 1\%$ Output Voltage Accuracy
- 2.4MHz Switching Frequency

Advanced Control & I²C Programmability

- Adaptive Constant-On-Time (COT) Control for Fast Transient Response
- I²C-Compatible Interface Up to 1.2MHz
- Dynamic Voltage Scaling via VID Pin
- I²C-Selectable Operating Modes and Functions:
 - PFM or Forced PWM Operation
 - Auto-Retry or Latch-Off Overcurrent Protection
 - Output Voltage Ramp Slew Rate
 - Output Discharge

Integrated Monitoring & Protection

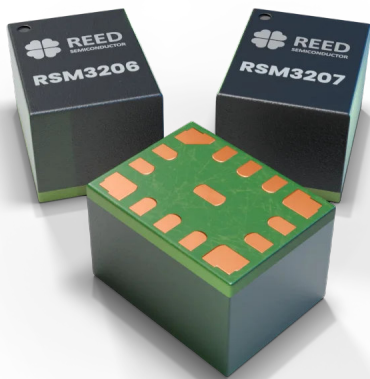
- Programmable Overcurrent Protection
- Configurable Output Discharge

Integrated Inductor & Compact Packaging

- Integrated Inductor
- Compact 2.3mm × 3mm × 1.95mm, 15-Pin LGA Package
- RoHS compliant and Green

Applications

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



Description

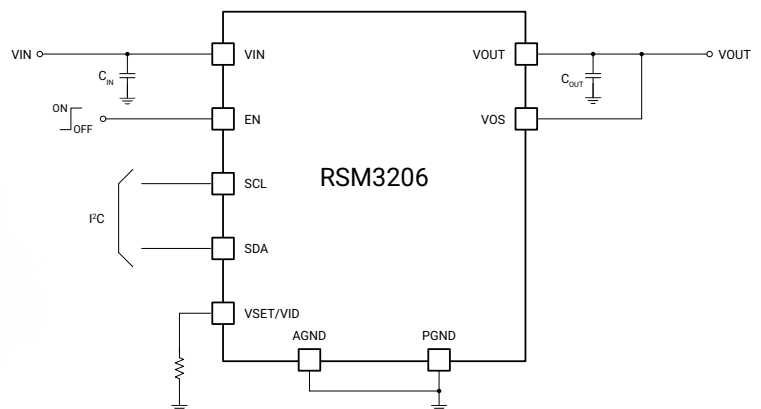
The RSM3206 and RSM3207 are compact, high-efficiency 4A and 6A buck CoolModule™ devices, respectively, with integrated inductors and an I²C-compatible interface. Designed for high-density point-of-load (PoL) applications, both devices operate from a 2.4V to 5.5V input supply and provide an adjustable 0.4V to 3.3V output. The devices integrate power conversion and magnetic components in a compact 2.3mm × 3mm × 1.95mm, 15-pin LGA package.

The devices employ Adaptive Constant-On-Time (COT) control for fast transient response and support I²C-selectable PFM or forced PWM operation. A dedicated VID pin enables dynamic voltage scaling, allowing the output voltage to be adjusted during operation.

The I²C interface supports configuration of the output voltage ramp slew rate, Auto-Retry or Latch-Off overcurrent protection, and output discharge. These programmable functions provide flexible power management while reducing external component requirements and simplifying system design.

PART NUMBER	I _{OUT} (A)	PACKAGE	SIZE (mm)
RSM3206	4	LGA-15	2.3 × 3 × 1.95
RSM3207	6	LGA-15	2.3 × 3 × 1.95

Typical Application Schematic



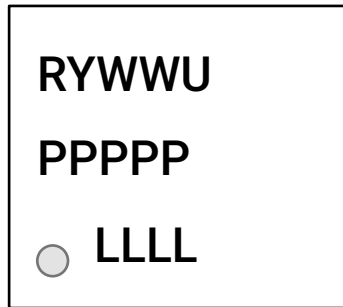
Device Comparison Table

PART NUMBER	VSET/VID	VSET/PG	EN FAULT	V _{OUT} (min) (V)	V _{OUT} (max) (V)	I _{OUT} (max) (A)			
RSM3206AR	●		1	0.4	1.675	4			
RSM3207AR						6			
RSM3206BR		●				0	0.8	3.35	4
RSM3207BR									6
RSM3206DR	●		0	0.8	3.35				4
RSM3207DR									6
RSM3206ER						4			
RSM3207ER						6			

Ordering Information

PART NUMBER	PACKAGE	SIZE (mm)	MSL RATING	SHIPPING METHOD	PACKAGE MARKING
RSM3206AR	LGA-15	2.3 × 3 × 1.95	Level - 3	TBD	TBD
RSM3207AR	LGA-15	2.3 × 3 × 1.95	Level - 3	TBD	TBD
RSM3206BR	LGA-15	2.3 × 3 × 1.95	Level - 3	TBD	TBD
RSM3207BR	LGA-15	2.3 × 3 × 1.95	Level - 3	TBD	TBD
RSM3206DR	LGA-15	2.3 × 3 × 1.95	Level - 3	TBD	TBD
RSM3207DR	LGA-15	2.3 × 3 × 1.95	Level - 3	TBD	TBD
RSM3206ER	LGA-15	2.3 × 3 × 1.95	Level - 3	TBD	TBD
RSM3207ER	LGA-15	2.3 × 3 × 1.95	Level - 3	TBD	TBD

Top Marking



Line 1

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

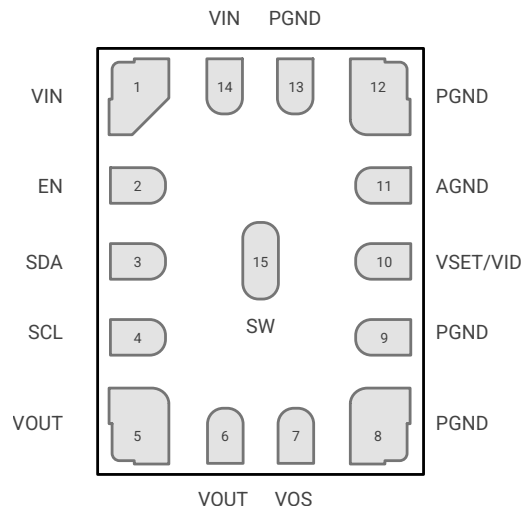
Line 2

- P P P P P: Truncated part number

Line 3

- L L L L: Lot code

Package Reference



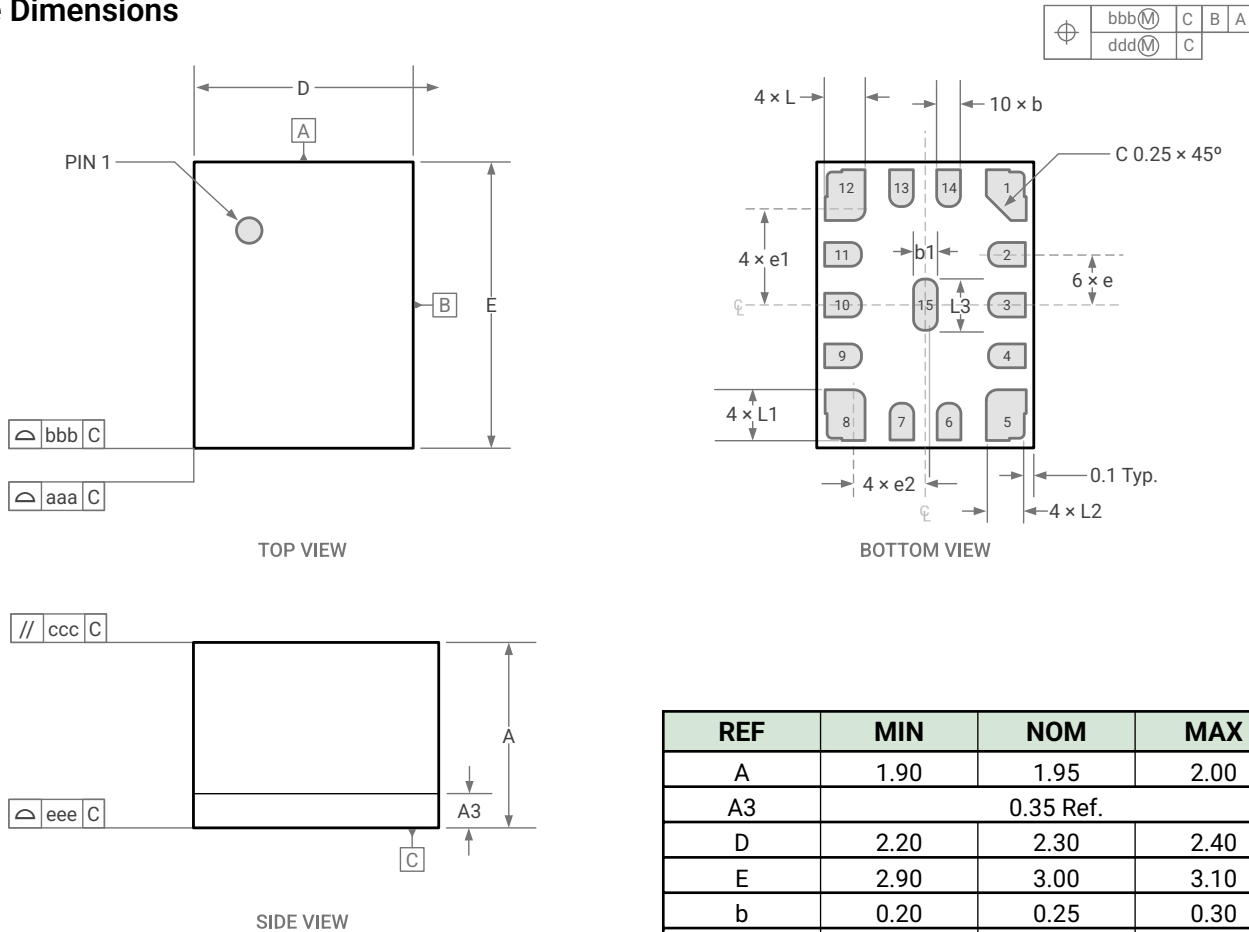
LGA-15 (2.3mm × 3mm × 1.95mm)

Pin Descriptions

PIN	NAME	TYPE	DESCRIPTION
1, 14	VIN	P	Input power supply.
2	EN	I	Device enable. High = enabled; Low = disabled. Do not leave floating.
3	SDA	I/O	I ² C serial data.
4	SCL	I	I ² C serial clock.
5, 6	VOUT	P	Regulated power output.
7	VOS	I	Output voltage sense input.
8, 9, 12, 13	PGND	G	Power ground.
10	VSET/VID	I	A resistor to GND sets the startup output voltage and I ² C address. After startup, Low selects VOUT Register 1; High selects VOUT Register 2.
11	AGND	G	Analog ground.
15	SW	P	Internal power-stage switching node.

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

Package Dimensions

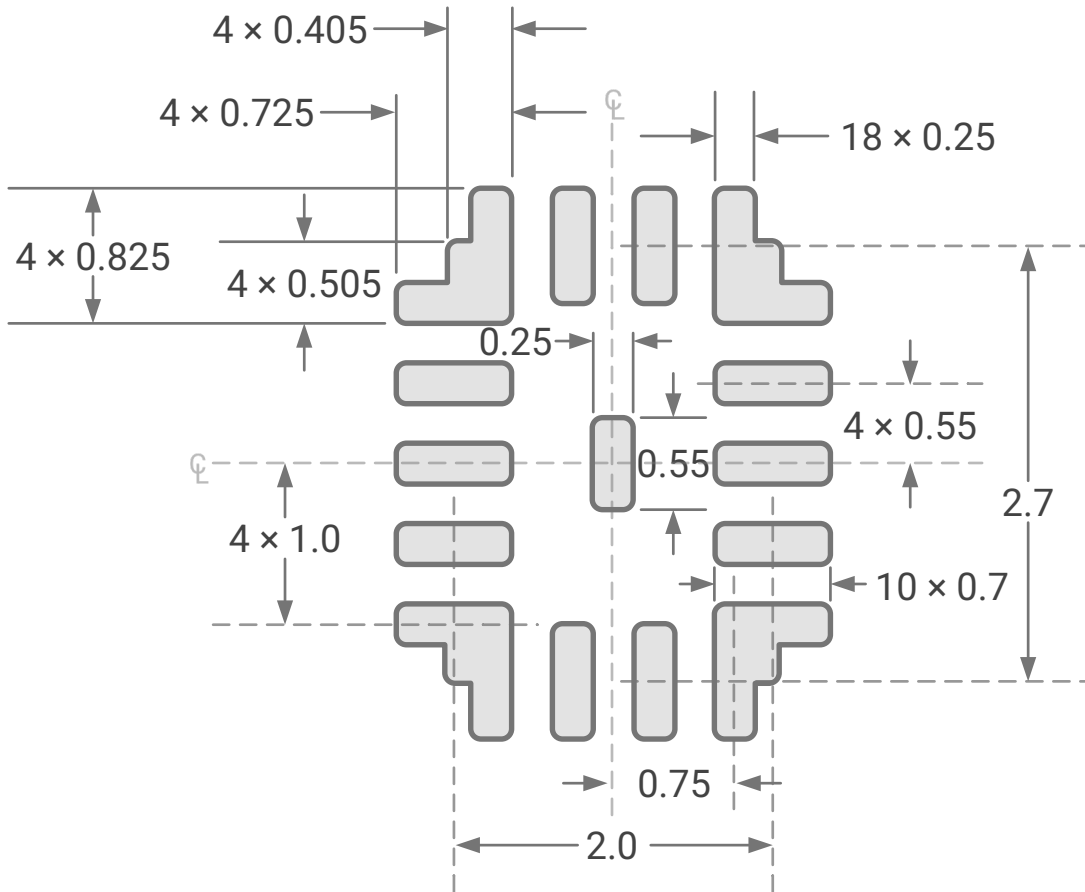


REF	MIN	NOM	MAX
A	1.90	1.95	2.00
A3	0.35 Ref.		
D	2.20	2.30	2.40
E	2.90	3.00	3.10
b	0.20	0.25	0.30
b1	0.20	0.25	0.30
e	0.50 BSC		
e1	1.00 BSC		
e2	0.75 BSC		
L	0.35	0.40	0.45
L1	0.475	0.525	0.550
L2	0.375	0.425	0.475
L3	0.50	0.55	0.60
Geometric Tolerancing			
aaa	0.10		
bbb	0.10		
ccc	0.10		
ddd	0.05		
eee	0.08		

Notes

1. All dimensions are in millimeters.
2. Dimensions and tolerance per JEDEC MO-303.
3. Drawings are not to scale.

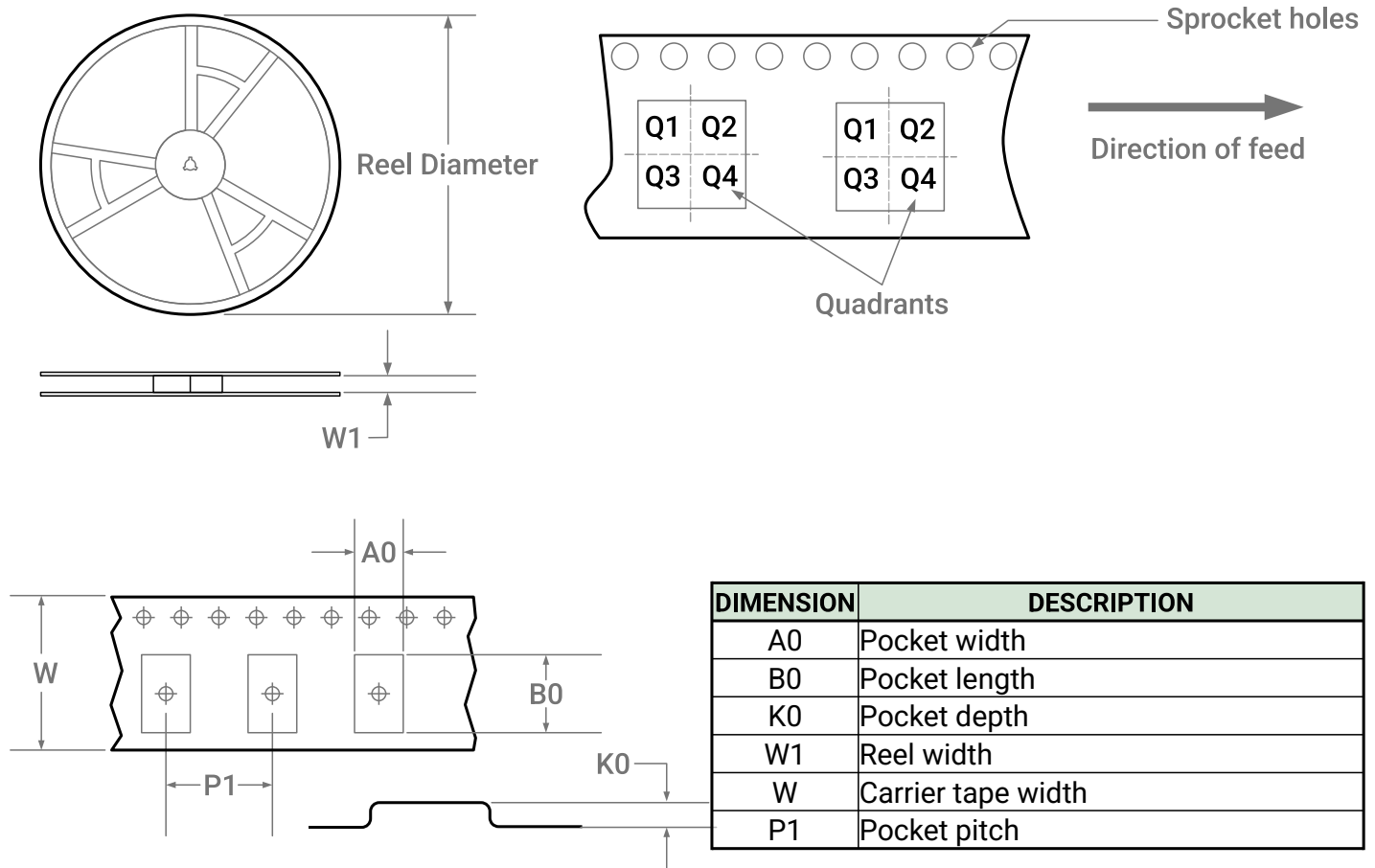
Recommended Land Pattern



Notes

1. All dimensions are in millimeters.
2. Drawings are not to scale.

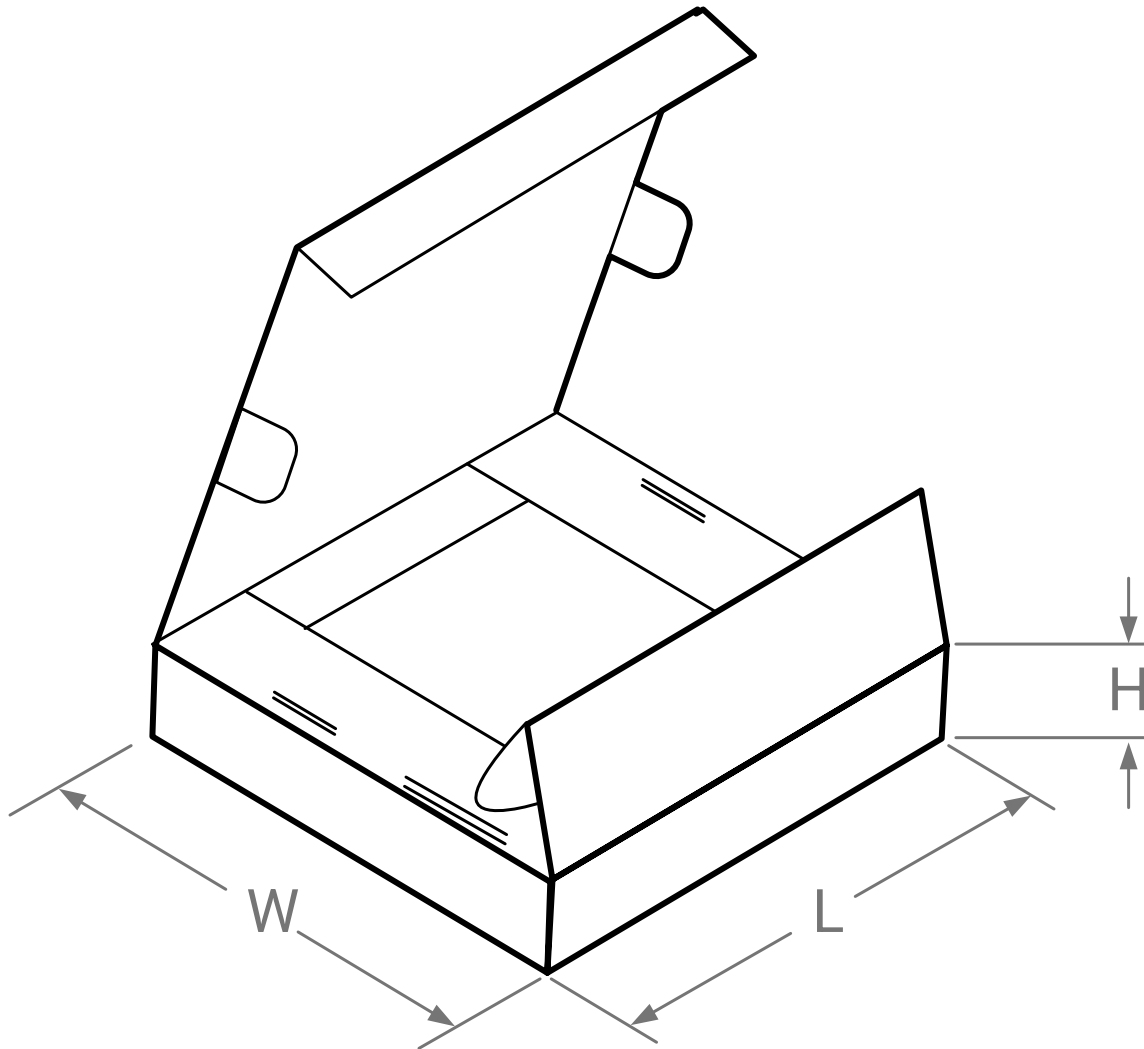
Tape and Reel Information



PACKAGE SIZE	REEL DIAMETER	W1	A0	B0	K0	P1	W	QUADRANT
2.5 × 2.5	TBD							

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	354	337	55

Notes:

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