RSM3203 • RSM3204 • RSM3205 2.4V to 5.5V 1A • 2A • 3A Buck Power Modules

Features

Performance

- 2.4V to 5.5V input voltage
- Up to 3A output current
- Up to 4MHz switching frequency
- 1% output voltage accuracy

Control

- Constant-On-Time (COT) control
- Selectable PFM/PWM or Forced PWM operation

Integrated Features

- Power-good output
- Output discharge function

Protection

- Overcurrent protection
- Short-circuit protection

Package

- ROHS compliant
- 2.0 × 2.5 × 1.1mm LGA package

Applications

- Optical Modules
- Smart phones
- Wearable electronics
- Camera modules
- IoT smart sensors/NB-IoT

Description

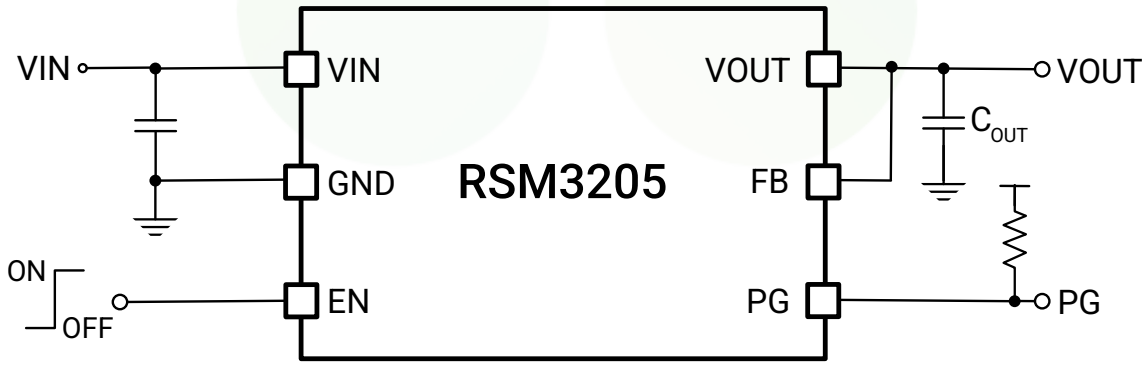
The RSM3203, RSM3204, and RSM3205 are a family of compact, high-efficiency synchronous buck power modules with an integrated inductor, optimized for space-constrained applications. Operating from a 2.4V to 5.5V input, the family provides up to 1A, 2A, or 3A of output current while switching at frequencies up to 4MHz, minimizing the size of external components.

The devices support selectable PFM/PWM operation for maximum efficiency at light loads or forced PWM operation for low-noise applications. Four selectable output voltage options simplify design while minimizing the number of required external components.

Integrated protection features include power-good indication, output discharge, overcurrent protection, and short-circuit protection. The devices are offered in a compact 2.0mm × 2.5mm, 10-pin LGA package.

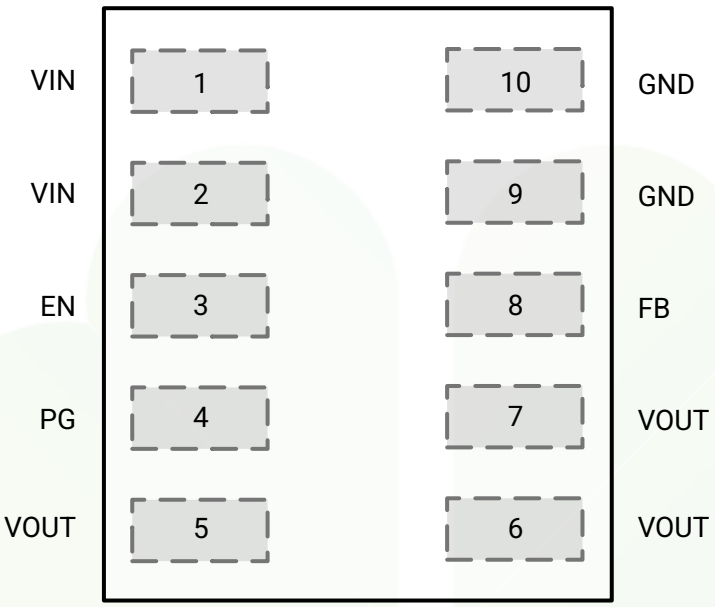
PART NUMBER	PACKAGE	DIMENSIONS (mm)	OUTPUT CURRENT (A)
RSM3203	LGA-10	2.0 × 2.5	1
RSM3204			2
RSM3205			3

Typical Application Circuit



Package Reference

Top View



LGA-10 (2.0mm × 2.5mm)

Pin Descriptions

PIN	NAME	TYPE	DESCRIPTION
1, 2	VIN	P	Input power supply. Place a 4.7 µF or larger ceramic bypass capacitor as close as possible between VIN and GND.
3	EN	I	Enable input. Drive HIGH to enable the device and LOW to disable it. An internal pulldown resistor keeps the device disabled when EN is left floating.
4	PG	O	Open-drain power-good output. Connect a 1 kΩ to 100 kΩ pull-up resistor to VIN or another logic supply.
5 - 7	VOUT	P	Regulated output voltage. Connect directly to the output capacitor using a short, low-impedance trace.
8	PG	I	Feedback input. Connect directly to VOUT for fixed-output operation or to the midpoint of an external resistor divider for adjustable-output operation.
9, 10	GND	G	Ground return. Connect to the ground plane and place the input and output capacitors close to the GND pins.

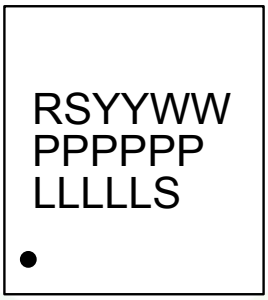
Device Comparison Table

PART NUMBER	CURRENT RATING (A)	V_{FB} (V)	MODE
RSM3203AR	1	0.6	PFM/PWM
RSM3203BR	1	1.2	PFM/PWM
RSM3203CR	1	1.8	PFM/PWM
RSM3203DR	1	2.5	PFM/PWM
RSM3203ER	1	3.3	PFM/PWM
RSM3203FR	1	0.6	Forced PWM
RSM3204AR	2	0.6	PFM/PWM
RSM3204BR	2	1.2	PFM/PWM
RSM3204CR	2	1.8	PFM/PWM
RSM3204DR	2	2.5	PFM/PWM
RSM3204ER	2	3.3	PFM/PWM
RSM3204FR	2	0.6	Forced PWM
RSM3205AR	3	0.6	PFM/PWM
RSM3205FR	3	0.6	Forced PWM

Ordering Information

PART NUMBER	PACKAGE	SIZE (mm)	MSL	SHIPPING METHOD	PACKAGE MARKING
RSM3203AR	LGA-10	2.0 × 2.5	Level-3	3000u Tape & Reel	TBD
RSM3203BR	LGA-10	2.0 × 2.5	Level-3	3000u Tape & Reel	TBD
RSM3203CR	LGA-10	2.0 × 2.5	Level-3	3000u Tape & Reel	TBD
RSM3203DR	LGA-10	2.0 × 2.5	Level-3	3000u Tape & Reel	TBD
RSM3203ER	LGA-10	2.0 × 2.5	Level-3	3000u Tape & Reel	TBD
RSM3203FR	LGA-10	2.0 × 2.5	Level-3	3000u Tape & Reel	TBD
RSM3204AR	LGA-10	2.0 × 2.5	Level-3	3000u Tape & Reel	TBD
RSM3204BR	LGA-10	2.0 × 2.5	Level-3	3000u Tape & Reel	TBD
RSM3204CR	LGA-10	2.0 × 2.5	Level-3	3000u Tape & Reel	TBD
RSM3204DR	LGA-10	2.0 × 2.5	Level-3	3000u Tape & Reel	TBD
RSM3204ER	LGA-10	2.0 × 2.5	Level-3	3000u Tape & Reel	TBD
RSM3204FR	LGA-10	2.0 × 2.5	Level-3	3000u Tape & Reel	TBD
RSM3205AR	LGA-10	2.0 × 2.5	Level-3	3000u Tape & Reel	TBD
RSM3205FR	LGA-10	2.0 × 2.5	Level-3	3000u Tape & Reel	TBD

Top Marking



Line 1

- RS: Prefix of Reed Semiconductor (RS replaced by RE for engineering lot)
- YY: Year code
- WW: Week code

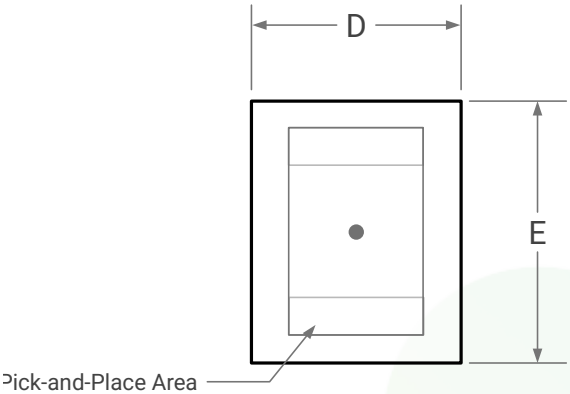
Line 2

- PPPPPP; Truncated part number

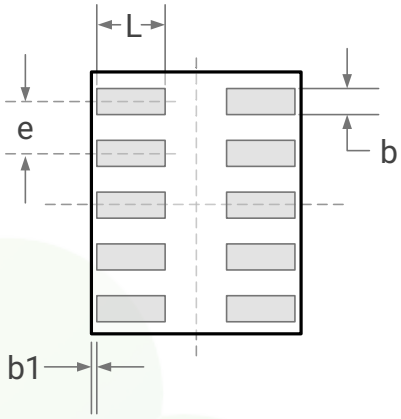
Line 3

- LLLLL: Lot code
- S: Assembly site code

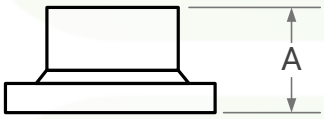
PACKAGE DIMENSIONS



TOP VIEW



BOTTOM VIEW



SIDE VIEW

Notes

1. All dimensions are in millimeters.
2. Lead coplanarity: 0.1 millimeter max.
3. Drawing is not to scale.
4. Use a Ø1.3 mm or smaller pick-and-place nozzle on the designated pick-and-place area.

REF	MIN	NOM	MAX
A	–	–	1.1
D	1.90	2.00	2.10
E	2.40	2.50	2.60
b	0.20	0.25	0.30
L	0.60	0.65	0.70
b1	0.05 Typ.		
e	0.50 Typ.		