

DESCRIPTION

The JWH5087A is a monolithic buck switching regulator based on I2 architecture for fast transient response. Operating with an input range of 2.7V~16V, JWH5087A delivers 20A of continuous output current with two integrated N-Channel MOSFETs. The internal synchronous power switches provide high efficiency without the use of an external Schottky diode. The operation frequency is set easily to 700 kHz, 800 kHz, or 1000 kHz with the MODE configuration, allowing the JWH5087A frequency to remain constant regardless of the input and output voltages.

JWH5087A guarantees robustness with output short protection, over-voltage protection, thermal protection and under voltage protection.

JWH5087A is available in QFN3×4-21 package, which provides a compact solution with minimal external components.

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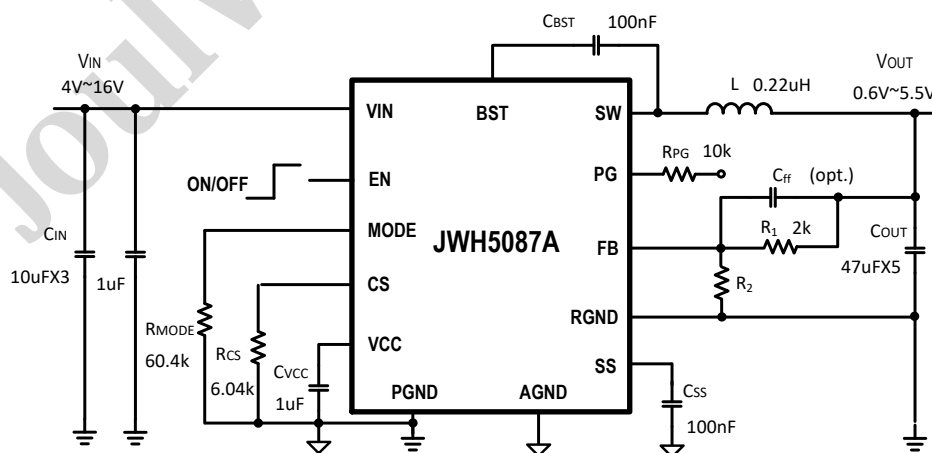
FEATURES

- 2.7V to 16V Operating Input Range with External 3.3V VCC Bias
- 4V to 16V Operating Input Range with Internal Bias or External 3.3V VCC Bias
- 20A Output Current
- Differential Output Voltage Remote Sense
- Programmable Accurate Current Limit Level
- $\pm 0.5\%$ Reference Voltage Over 0°C to $+70^{\circ}\text{C}$ Junction Temperature Range
- FCCM Operation Mode
- Power Good Indicator
- Programmable Soft-start Time
- Selectable Switching Frequency from 700kHz, 800kHz, and 1000kHz
- Output Discharge Function
- Non-latch OCP, UVP, OVP, UVLO
- Thermal Protection
- Available in QFN3X4-21 Package

APPLICATIONS

- Telecom and Networking Systems
- Server, Cloud-Computing, Storage
- Base Stations
- General Purpose Point-of-Load

TYPICAL APPLICATION



ORDER INFORMATION

DEVICE ¹⁾	PACKAGE	TOP MARKING ²⁾	ENVIRONMENTAL ³⁾
JWH5087AQFNAG#TR	QFN3X4-21	JWH5087A YW□□□□□	Green

Notes:

- 1)

JW□□□□#TR

Tape and Reel (If TR is not shown, it means Tube)

Package Code

Part No.
- 2) Line1:

JW □□□□

Product code

Joulwatt LOGO

Line2:

YW □□□□□

Lot number

Week code

Year code
- 3) All JoulWatt products are packaged with Pb-free and Halogen-free materials and compliant to RoHS standards.
- PIN CONFIGURATION
- TOP VIEW
- Pin configuration diagram for JWH5087A in QFN3X4-21 package. The diagram shows a 21-pin package with pins numbered 1 to 21. Pin 1 is BST, Pin 2 is AGND, Pin 3 is CS, Pin 4 is MODE, Pin 5 is SS, Pin 6 is RGND, Pin 7 is FB, Pin 8 is EN, Pin 9 is PG, Pin 10 is VIN, Pin 11 is PGND, Pin 12 is PGND, Pin 13 is PGND, Pin 14 is PGND, Pin 15 is PGND, Pin 16 is PGND, Pin 17 is PGND, Pin 18 is PGND, Pin 19 is VCC, Pin 20 is SW, Pin 21 is VIN.
- JWH5087A Rev.0.81
2024/07/11
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- 2 / 4

PIN DESCRIPTION

Pin	Name	Description
1	BST	Connect a 0.1uF capacitor between BST and SW pin to supply current for the top switch driver.
2	AGND	Analog ground pin. Select AGND as the control circuit reference point.
3	CS	Current limit. Connect a resistor to AGND to set the current limit trip point.
4	MODE	Frequency selection. Program MODE to select the operating switching frequency.
5	SS	Soft-start time setting pin. The soft-start time is determined by the capacitance between SS pin and AGND.
6	RGND	Differential remote sense negative input. Connect this pin directly to the negative side of the voltage sense point. Short to GND if remote sense is not used.
7	FB	Feedback (Differential remote sense positive input). An external resistor divider from the output to RGND (tapped to FB) sets the output voltage. It is recommended to place the resistor divider as close to FB as possible. Vias should be avoided on the FB traces.
8	EN	Enable control pin. Pull this pin high to turn on the regulator. Do not leave this pin floating.
9	PG	Power good monitor output. Open drain output when the output voltage is within 92.5% to 117% of internal reference voltage.
10, 21	VIN	Input voltage pin. VIN supplies power to the IC. Connect a 2.7V to 16V supply to VIN and bypass VIN to GND with a suitably large capacitor to eliminate noise on the input to the IC.
11-18	PGND	Power ground pin
19	VCC	Internal 3.2V LDO output. Power supply for internal analog circuits and driving circuit. Decouple this pin to ground with a minimum 1uF ceramic capacitor.
20	SW	SW is the switching node that supplies power to the output. Connect the output LC filter from SW to the output load.

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