

SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE 13G/A

Under the Securities Exchange Act of 1934
(Amendment No. 2)*

MONOLITHIC POWER SYSTEMS, INC.

(Name of Issuer)

Common Stock, par value \$0.001 per share

(Title of Class of Securities)

609839105

(CUSIP Number)

December 31, 2014

(Date of Event Which Requires Filing of This Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- ☐ Rule 13d-1(b)
- ☒ Rule 13d-1(c)
- ☐ Rule 13d-1(d)

(Page 1 of 10 Pages)

*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

1	NAME OF REPORTING PERSON Adage Capital Partners, L.P.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	5	SOLE VOTING POWER 0
	6	SHARED VOTING POWER 1,993,469
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 1,993,469
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,993,469	
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 5.15%	
12	TYPE OF REPORTING PERSON PN	

1	NAME OF REPORTING PERSON Adage Capital Partners GP, L.L.C.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	5	SOLE VOTING POWER 0
	6	SHARED VOTING POWER 1,993,469
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 1,993,469
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,993,469	
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 5.15%	
12	TYPE OF REPORTING PERSON OO	

1	NAME OF REPORTING PERSON Adage Capital Advisors, L.L.C.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	5	SOLE VOTING POWER 0
	6	SHARED VOTING POWER 1,993,469
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 1,993,469
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,993,469	
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 5.15%	
12	TYPE OF REPORTING PERSON OO	

1	NAME OF REPORTING PERSON Robert Atchinson	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	5	SOLE VOTING POWER 0
	6	SHARED VOTING POWER 1,993,469
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 1,993,469
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,993,469	
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 5.15%	
12	TYPE OF REPORTING PERSON IN	

1	NAME OF REPORTING PERSON Phillip Gross	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH:	5	SOLE VOTING POWER 0
	6	SHARED VOTING POWER 1,993,469
	7	SOLE DISPOSITIVE POWER 0
	8	SHARED DISPOSITIVE POWER 1,993,469
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,993,469	
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 5.15%	
12	TYPE OF REPORTING PERSON IN	

Item 1(a). NAME OF ISSUER

The name of the issuer is MONOLITHIC POWER SYSTEMS, INC. (the "Company").

Item 1(b). ADDRESS OF ISSUER'S PRINCIPAL EXECUTIVE OFFICES

The Company's principal executive offices are located at 79 Great Oaks Boulevard, San Jose, CA 95119.

Item 2(a). NAME OF PERSON FILING

This statement is filed by:

- (i) Adage Capital Partners, L.P., a Delaware limited partnership ("ACP") with respect to the shares of Common Stock directly owned by it;
- (ii) Adage Capital Partners GP, L.L.C., a limited liability company organized under the laws of the State of Delaware ("ACPGP"), as general partner of ACP with respect to the shares of Common Stock directly owned by ACP;
- (iii) Adage Capital Advisors, L.L.C., a limited liability company organized under the laws of the State of Delaware ("ACA"), as managing member of ACPGP, general partner of ACP, with respect to the shares of Common Stock directly owned by ACP;
- (iv) Robert Atchinson ("Mr. Atchinson"), as managing member of ACA, managing member of ACPGP, general partner of ACP with respect to the shares of Common Stock directly owned by ACP; and
- (v) Phillip Gross ("Mr. Gross"), as managing member of ACA, managing member of ACPGP, general partner of ACP with respect to the shares of Common Stock directly owned by ACP.

The foregoing persons are hereinafter sometimes collectively referred to as the "Reporting Persons." Any disclosures herein with respect to persons other than the Reporting Persons are made on information and belief after making inquiry to the appropriate party.

Item 2(b). ADDRESS OF PRINCIPAL BUSINESS OFFICE OR, IF NONE, RESIDENCE

The address of the business office of each of the Reporting Persons is 200 Clarendon Street, 52nd floor, Boston, Massachusetts 02116.

Item 2(c). CITIZENSHIP

ACP is a limited partnership organized under the laws of the State of Delaware. ACPGP and ACA are limited liability companies organized under the laws of the State of Delaware. Messrs. Gross and Atchinson are citizens of the United States.

Item 2(d). TITLE OF CLASS OF SECURITIES

Common Stock, par value \$0.001 per share (the "Common Stock").

Item 2(e). **CUSIP NUMBER**
609839105

Item 3. **IF THIS STATEMENT IS FILED PURSUANT TO Rules 13d-1(b), OR 13d-2(b) OR (c), CHECK WHETHER THE PERSON FILING IS A:**

- (a) ☐ Broker or dealer registered under Section 15 of the Act;
- (b) ☐ Bank as defined in Section 3(a)(6) of the Act;
- (c) ☐ Insurance company as defined in Section 3(a)(19) of the Act;
- (d) ☐ Investment company registered under Section 8 of the Investment Company Act of 1940;
- (e) ☐ An investment adviser in accordance with Rule 13d-1(b)(1)(ii)(E);
- (f) ☐ An employee benefit plan or endowment fund in accordance with Rule 13d-1(b)(1)(ii)(F);
- (g) ☐ A parent holding company or control person in accordance with Rule 13d-1(b)(1)(ii)(G);
- (h) ☐ A savings association as defined in Section 3(b) of the Federal Deposit Insurance Act;
- (i) ☐ A church plan that is excluded from the definition of an investment company under Section 3(c)(14) of the Investment Company Act;
- (j) ☐ A non-U.S. institution in accordance with Rule 13d-1(b)(1)(ii)(J);
- (k) ☐ Group, in accordance with Rule 13d-1(b)(1)(ii)(K).

If filing as a non-U.S. institution in accordance with Rule 13d-1(b)(1)(ii)(J), please specify the type of institution: Not applicable.

Item 4. **OWNERSHIP**

- A. Adage Capital Partners, L.P., Adage Capital Partners GP, L.L.C. and Adage Capital Advisors, L.L.C.
 - (a) Amount beneficially owned: 1,993,469
 - (b) Percent of class: 5.15%. The percentages used herein and in the rest of this Schedule 13G/A are calculated based upon the 38,745,011 shares of Common Stock issued and outstanding as of October 24, 2014 as reflected in the Company's quarterly report on Form 10-Q for the period ended September 30, 2014 filed by the Company on October 31, 2014.
 - (c)
 - (i) Sole power to vote or direct the vote: 0
 - (ii) Shared power to vote or direct the vote: 1,993,469
 - (iii) Sole power to dispose or direct the disposition: 0
 - (iv) Shared power to dispose or direct the disposition of: 1,993,469

ACP has the power to dispose of and the power to vote the shares of Common Stock beneficially owned by it, which power may be exercised by its general partner, ACPGP. ACA, as managing member of ACPGP, directs ACPGP's operations. Neither ACPGP nor ACA directly own any shares of Common Stock. By reason of the provisions of Rule 13d-3 of the Securities Exchange Act of 1934 (the "Act"), ACPGP and ACA may be deemed to beneficially own the shares owned by ACP.

- B. Robert Atchinson and Phillip Gross
- (a) Amount beneficially owned: 1,993,469
 - (b) Percent of class: 5.15%
 - (c)
 - (i) Sole power to vote or direct the vote: 0
 - (ii) Shared power to vote or direct the vote: 1,993,469
 - (iii) Sole power to dispose or direct the disposition: 0
 - (iv) Shared power to dispose or direct the disposition: 1,993,469

Messrs. Atchinson and Gross, as managing members of ACA, have shared power to vote the Common Stock beneficially owned by ACP. Neither Mr. Atchinson nor Mr. Gross directly own any shares of Common Stock. By reason of the provisions of Rule 13d-3 of the Act, each may be deemed to beneficially own the shares beneficially owned by ACP.

Item 5. OWNERSHIP OF FIVE PERCENT OR LESS OF A CLASS

Not applicable.

Item 6. OWNERSHIP OF MORE THAN FIVE PERCENT ON BEHALF OF ANOTHER PERSON

Not applicable.

Item 7. IDENTIFICATION AND CLASSIFICATION OF THE SUBSIDIARY WHICH ACQUIRED THE SECURITY BEING REPORTED ON BY THE PARENT HOLDING COMPANY OR CONTROL PERSON

Not applicable.

Item 8. IDENTIFICATION AND CLASSIFICATION OF MEMBERS OF THE GROUP

Not applicable.

Item 9. NOTICE OF DISSOLUTION OF GROUP

Not applicable.

Item 10. CERTIFICATION

Each of the Reporting Persons hereby makes the following certification:

By signing below each Reporting Person certifies that, to the best of his or its knowledge and belief, the securities referred to above were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

SIGNATURES

After reasonable inquiry and to the best of his or its knowledge and belief, each of the undersigned certifies that the information set forth in this statement is true, complete and correct.

DATE: February 17, 2015

ADAGE CAPITAL PARTNERS, L.P.

By: Adage Capital Partners GP, L.L.C.,
its general partner

By: Adage Capital Advisors, L.L.C.,
its managing member

/s/ Robert Atchinson

Name: Robert Atchinson

Title: Managing Member

ADAGE CAPITAL PARTNERS GP, L.L.C.

By: Adage Capital Advisors, L.L.C.,
its managing member

/s/ Robert Atchinson

Name: Robert Atchinson

Title: Managing Member

ADAGE CAPITAL ADVISORS, L.L.C.

/s/ Robert Atchinson

Name: Robert Atchinson

Title: Managing Member

ROBERT ATCHINSON

/s/ Robert Atchinson

ROBERT ATCHINSON, individually

PHILLIP GROSS

/s/ Phillip Gross

PHILLIP GROSS, individually