

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

**FORM S-8
REGISTRATION STATEMENT**

*Under
The Securities Act of 1933*

MONOLITHIC POWER SYSTEMS, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

77-0466789
(I.R.S. Employer
Identification No.)

**6409 Guadalupe Mines Road
San Jose, CA 95120**
(Address of Principal Executive Offices, including Zip Code)

**MONOLITHIC POWER SYSTEMS, INC. 2004 EQUITY INCENTIVE PLAN
MONOLITHIC POWER SYSTEMS, INC. 2004 EMPLOYEE STOCK PURCHASE PLAN**
(Full title of the plan)

Michael R. Hsing
President and Chief Executive Officer
**6409 Guadalupe Mines Road
San Jose, CA 95120
(408) 826-0600**
(Name, address, and telephone number, including area code, of agent for service)

Copies to:

Carmen Chang
Wilson Sonsini Goodrich & Rosati
Professional Corporation
650 Page Mill Road
Palo Alto, CA 94304
(650) 493-9300

Saria Tseng
Vice President and General Counsel
Monolithic Power Systems, Inc.
6409 Guadalupe Mines Road
San Jose, CA 95120
(408) 826-0600

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

CALCULATION OF REGISTRATION FEE

Title of securities to be registered	Amount to be registered (1)	Proposed maximum offering price per share	Proposed maximum aggregate offering price	Amount of registration fee (2)
Common Stock \$0.001 par value per share, to be issued pursuant to the 2004 Equity Incentive Plan	1,758,265 shares	\$21.66 (3)	\$38,084,020	\$2,715
Common Stock \$0.001 par value per share, to be issued pursuant to the 2004 Employee Stock Purchase Plan	703,306 shares	\$18.41 (4)	\$12,948,567	\$923
Total Registration Fee				\$3,638

- (1) Pursuant to Rule 416, this Registration Statement shall also cover any additional shares of Registrant's Common Stock that become issuable under the Monolithic Power Systems, Inc. 2004 Equity Incentive Plan by reason of any stock dividend, stock split, recapitalization or any other similar transaction effected without the Registrant's receipt of consideration that results in an increase in the number of the Registrant's outstanding shares of Common Stock.
- (2) Amount of the registration fee was calculated pursuant to Section 6(b) of the Securities Act of 1933, as amended (the "Securities Act"). The registration fee is based on \$71.30 per \$1,000,000 of the maximum aggregate price at which shares are proposed to be offered.
- (3) Estimated in accordance with Rules 457(c) and (h) under the Securities Act of 1933, as amended, solely for the purpose of calculating the registration fee on the basis of the average of the high and low prices of the Registrant's Common Stock as reported on the Nasdaq Global Select Market on January 27, 2010, which amount was \$21.66 per share.
- (4) The proposed maximum offering price per share of \$18.41 was determined by discounting the proposed maximum offering price per share (as computed in note 3 above) by 15% in accordance with the terms of the Monolithic Power Systems, Inc. 2004 Employee Stock Purchase Plan.

Registration of Additional Securities

Pursuant to General Instruction E

This Registration Statement registers additional shares of common stock of Monolithic Power Systems, Inc. (the "Registrant") to be issued pursuant to the Registrant's 2004 Equity Incentive Plan and the Registrant's 2004 Employee Stock Purchase Plan. Accordingly, we incorporate by reference the contents of the previous Registration Statements on Form S-8 (Commission File No. 333-120886) filed by the Registrant with the Securities and Exchange Commission ("SEC") on December 1, 2004, the Registration Statement on Form S-8 (Commission File No. 333-132411) filed with the SEC on March 14, 2006, as amended February 8, 2007, the Registration Statement on Form S-8 (Commission File No. 333-140563) filed with the SEC on February 9, 2007, the Registration Statement on Form S-8 (Commission File No. 333-149027) filed with the SEC on February 4, 2008 and the Registration Statement on Form S-8 (Commission File No. 333-157095) filed with the SEC on February 4, 2009 (collectively, the "Previous Forms S-8").

PART II

INFORMATION REQUIRED IN REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The following periodic reports that were filed after the Previous Forms S-8 to maintain current information about the Registrant, are hereby incorporated into this Registration Statement and made a part hereof by this reference:

The reports that the Registrant has most recently filed with the SEC are listed below:

- (a)(1) The Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2008, filed with the Commission on February 27, 2008;
- (b)(1) The Registrant's Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2009, filed with the Commission on April 28, 2009;
- (b)(2) The Registrant's Quarterly Report on Form 10-Q for the fiscal quarter ended June 30, 2009, filed with the Commission on July 30, 2009;
- (b)(3) The Registrant's Quarterly Report on Form 10-Q for the fiscal quarter ended September 30, 2009, filed with the Commission on October 22, 2009;
- (b)(4) The Registrant's Current Report on Form 8-K filed with the Commission on January 13, 2009;
- (b)(5) The Registrant's Current Report on Form 8-K filed with the Commission on February 4, 2009;
- (b)(6) The Registrant's Current Report on Form 8-K filed with the Commission on March 9, 2009;
- (b)(7) The Registrant's Current Report on Form 8-K filed with the Commission on December 24, 2009;
- (b)(8) The Registrant's Current Report on Form 8-K filed with the Commission on December 31, 2009;
- (c)(1) The description of the Registrant's Common Stock contained in its registration statement on Form 8-A, filed with the Commission on November 16, 2004, and any subsequent amendment and restatement or report filed with the Commission for the purposes of updating such description.

In addition, all documents subsequently filed by the Registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), prior to the filing of a post-effective amendment to the Registration Statement that indicates that all of the shares of Common Stock offered have been sold or that deregisters all of such shares then remaining unsold, shall be deemed to be incorporated by reference in this Registration Statement and to be a part hereof from the date of the filing of such documents. For the purposes of this Registration Statement, any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded to the extent that a statement contained herein or in any other subsequently filed document that also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Registration Statement.

Item 8. Exhibits.

The following exhibits are filed as part of this Registration Statement:

<u>Exhibit No.</u>	<u>Description</u>
5.1	Opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation.
23.1	Consent of Wilson Sonsini Goodrich & Rosati, Professional Corporation (included in Exhibit 5.1).
23.2	Consent of Independent Registered Public Accounting Firm.
24.1	Power of attorney (included in signature page to this Registration Statement).

EXHIBIT INDEX

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OPINION OF WILSON SONSINI GOODRICH & ROSATI, PROFESSIONAL CORPORATION

February 3, 2010

Monolithic Power Systems, Inc.
6409 Guadalupe Mines Road
San Jose, CA 95120

Re: Registration Statement on Form S-8

Ladies and Gentlemen:

We have examined the Registration Statement on Form S-8 to be filed by you with the Securities and Exchange Commission on or about February 3, 2010 (the "Registration Statement"), in connection with the registration under the Securities Act of 1933, as amended, of an aggregate of 2,461,571 shares of Common Stock, par value \$0.001 per share (the "Shares"), reserved for issuance pursuant to the 2004 Equity Incentive Plan and the 2004 Employee Stock Purchase Plan (the "Plans"). As your legal counsel, we have examined the proceedings taken and are familiar with the proceedings proposed to be taken by you in connection with the sale and issuance of the Shares under the Plans.

It is our opinion that the Shares, when issued and sold in the manner described in the Plans, will be legally and validly issued, fully paid and nonassessable.

We consent to the use of this opinion as an exhibit to the Registration Statement, and further consent to the use of our name wherever appearing in the Registration Statement and any amendments thereto.

Very truly yours,

WILSON SONSINI GOODRICH & ROSATI
Professional Corporation

/s/ Wilson Sonsini Goodrich & Rosati, P.C.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement on Form S-8 of our report relating to the consolidated financial statements of Monolithic Power Systems, Inc. and subsidiaries (the "Company") dated February 26, 2009 (which report expresses an unqualified opinion and includes explanatory paragraphs relating to the adoption of Statement of Financial Accounting Standards No. 157, *Fair Value Measurements*, and Financial Accounting Standards Board Interpretation No. 48, *Accounting for Uncertainty in Income Taxes – An interpretation of FASB Statement No. 109*), and our report relating to the effectiveness of the Company's internal control over financial reporting dated February 26, 2009 appearing in the annual report on Form 10-K of the Company for the year ended December 31, 2008.

/s/ Deloitte & Touche LLP

San Jose, California
February 3, 2010