

**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:

**Robert T. Clarkson
Jones Day
1755 Embarcadero Road
Palo Alto, CA 94303
650-739-3996**

**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	1,753,151 shares	\$ 15.01 (3)	\$ 26,314,797	\$ 3,055
Common Stock \$0.001 par value per share, to be issued pursuant to the 2004 Employee Stock Purchase Plan	701,260 shares	\$ 12.76(4)	\$ 8,947,026	\$ 1,039
Total Registration Fee			\$	4,194

- (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 \$116.10 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, 2011, which amount was \$15.01 per share.
 - (4) The proposed maximum offering price per share of \$12.76 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.
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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, the Registration Statement on Form S-8 (Commission File No. 333-157095) filed with the SEC on February 4, 2009 and the Registration on Form S-8 (Commission File No. 333-164673) filed with the SEC on February 3, 2010 (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, 2009, filed with the Commission on February 16, 2010;
- (b)(1) The Registrant's Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2010, filed with the Commission on April 29, 2010;
- (b)(2) The Registrant's Quarterly Report on Form 10-Q for the fiscal quarter ended June 30, 2010, filed with the Commission on July 28, 2010;
- (b)(3) The Registrant's Quarterly Report on Form 10-Q for the fiscal quarter ended September 30, 2010, filed with the Commission on November 3, 2010;
- (b)(4) The Registrant's Current Report on Form 8-K filed with the Commission on February 3, 2010;
- (b)(5) The Registrant's Current Report on Form 8-K filed with the Commission on June 14, 2010;
- (b)(6) The Registrant's Current Report on Form 8-K filed with the Commission on July 28, 2010;
- (b)(7) The Registrant's Current Report on Form 8-K filed with the Commission on September 15, 2010;
- (b)(7) The Registrant's Current Report on Form 8-K filed with the Commission on January 3, 2011; and
- (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 Jones Day.
23.1	Consent of Jones Day (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).

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of San Jose, State of California, on February 2, 2011.

MONOLITHIC POWER SYSTEMS, INC.

By: /s/ Michael R. Hsing
Michael R. Hsing
President and Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Michael R. Hsing and Meera Rao, and each of them individually, his attorney-in-fact, with the power of substitution, for him in any and all capacities, to sign any and all amendments to this Registration Statement (including post-effective statements), and all post-effective amendments thereto, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that such attorney-in-fact, or his substitute, may lawfully do or cause to be done by virtue hereof. This Power of Attorney may be signed in several counterparts.

Pursuant to the requirements of the Securities Act of 1933, this registration statement on Form S-8 has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Michael R. Hsing</u> Michael R. Hsing	President, Chief Executive Officer and Director (<i>principal executive officer</i>)	February 2, 2011
<u>/s/ Meera Rao</u> Meera Rao	Chief Financial Officer (<i>principal financial and accounting officer</i>)	February 2, 2011
<u>/s/ Karen A. Smith Bogart</u> Karen A. Smith Bogart	Director	February 2, 2011
<u>/s/ Herbert Chang</u> Herbert Chang	Director	February 2, 2011
<u>/s/ Victor K. Lee</u> Victor K. Lee	Director	February 2, 2011
<u>/s/ Douglas McBurnie</u> Douglas McBurnie	Director	February 2, 2011
<u>/s/ James C. Moyer</u> James C. Moyer	Director	February 2, 2011
<u>/s/ Umesh Padval</u> Umesh Padval	Director	February 2, 2011
<u>/s/ Jeff Zhou</u> Jeff Zhou	Director	February 2, 2011

EXHIBIT INDEX

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OPINION OF JONES DAY

February 2, 2011

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

Re: Registration Statement on Form S-8 Filed by Monolithic Power Systems, Inc.

Dear Ladies and Gentlemen:

We have acted as counsel for Monolithic Power Systems, Inc., a Delaware corporation (the "Company"), in connection with the registration under the Securities Act of 1933, as amended (the "Act"), of an aggregate of 2,454,411 shares (the "Shares") of common stock, par value \$0.001 per share, of the Company that may be issued or delivered and sold pursuant to the Company's 2004 Equity Incentive Plan and the Company's 2004 Employee Stock Purchase Plan (collectively, the "Plans"). In connection with the opinion expressed herein, we have examined such documents, records and matters of law as we have deemed relevant or necessary for purposes of this opinion. Based on the foregoing, and subject to the further limitations, qualifications and assumptions set forth herein, we are of the opinion that the Shares that may be issued or delivered and sold pursuant to the Plans have been authorized by all necessary corporate action and will be, when issued or delivered and sold in accordance with such Plans and the authorized forms of stock option, restricted stock or other applicable agreements thereunder, validly issued, fully paid and nonassessable, provided that the consideration for the Shares is at least equal to the stated par value thereof.

The opinion expressed herein is limited to the General Corporation Law of the State of Delaware, including the applicable provisions of the Delaware Constitution and the reported judicial decisions interpreting such law, as currently in effect, and we express no opinion with respect to any other law of the State of Delaware or the laws of any other jurisdiction. In addition, we have assumed that the resolutions authorizing the Company to issue or deliver and sell the Shares pursuant to the Plans and the applicable award agreements will be in full force and effect at all times at which such Shares are issued or delivered or sold by the Company, and the Company will take no action inconsistent with such resolutions.

In rendering the opinion above, we have assumed that each award under the 2004 Equity Incentive Plan will be approved by the Board of Directors of the Company or an authorized committee of the Board of Directors.

We hereby consent to the filing of this opinion as Exhibit 5.1 to the Registration Statement on Form S-8 filed by the Company to effect registration of the Shares to be issued or delivered and sold pursuant to the Plans under the Act. In giving such consent, we do not thereby admit that we are included in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Securities and Exchange Commission promulgated thereunder.

Very truly yours,

/s/ JONES DAY

Jones Day

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement on Form S-8 of our reports dated February 12, 2010 relating to the consolidated financial statements of Monolithic Power Systems, Inc. and subsidiaries (the "Company"), and the effectiveness of the Company's internal control over financial reporting appearing in the annual report on Form 10-K of the Company for the year ended December 31, 2009.

/s/ Deloitte & Touche LLP

San Jose, California

February 2, 2011