

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

**POST-EFFECTIVE AMENDMENT NO. 1**  
**TO**  
**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:*

**Steven E. Bochner, Esq.**  
**Wilson Sonsini Goodrich & Rosati**  
**Professional Corporation**  
**650 Page Mill Road**  
**Palo Alto, CA 94304**  
**(650) 493-9300**

**Adriana Chiocchi**  
**Chief Legal Officer and Corporate Secretary**  
**Monolithic Power Systems, Inc.**  
**6409 Guadalupe Mines Road**  
**San Jose, CA 95120**  
**(408) 826-0600**

**CALCULATION OF REGISTRATION FEE**

Title of securities to be registered (1)	Amount to be registered (2)	Proposed maximum offering price per share	Proposed maximum aggregate offering price	Amount of registration fee (3)
Common Stock \$0.001 par value per share, to be issued pursuant to the 2004 Equity Incentive Plan	2,844,813 shares	\$ 14.12 (4)	\$40,168,760	\$ 4,299
Common Stock \$0.001 par value per share, to be issued pursuant to the 2004 Employee Stock Purchase Plan	1,137,925 shares	\$ 14.12 (4)	\$16,067,501	\$ 1,720
Total Registration Fee				\$ 6,019(5)

- (1) The shares of Common Stock to be issued pursuant to Monolithic Power Systems, Inc. 2004 Equity Incentive Plan and the Monolithic Power Systems, Inc. 2004 Employee Stock Purchase Plan were previously registered under the Registration Statement on Form S-8 (Registration No. 333-132411) filed on March 14, 2006.
- (2) 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 and the Monolithic Power Systems, Inc. 2004 Employee Stock Purchase 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.
- (3) Amount of the registration fee was calculated pursuant to Section 6(b) of the Securities Act of 1933, as amended, and was determined by multiplying the proposed maximum aggregate offering price by 0.000107.

- (4) Computed in accordance with Rules 457(c) and (h) under the Securities Act of 1933, as amended (the “Securities Act”), 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 Market on March 14, 2006, which amount was \$14.12 per share.
  - (5) The registration fee was previously paid in connection with the original filing of the Registration Statement on Form S-8 (File No. 333-132411).
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*Explanatory Note*

This Post-Effective Amendment No. 1 to Form S-8 Registration Statement (this “Registration Statement”) is being filed by Monolithic Power Systems, Inc., a Delaware corporation (the “Registrant” or the “Company”), solely for the purpose of correcting certain information contained in the “Calculation of Registration Fee” table set forth in the Registrant’s Registration Statement on Form S-8 (File No. 333-132411) that was filed with the Securities and Exchange Commission on March 14, 2006 (the “Original Registration Statement”). The “Calculation of Registration Fee” table set forth on the cover page of this Registration Statement amends and restates in its entirety the “Calculation of Registration Fee” table set forth on the cover page of the Original Registration Statement, which amendments include:

- correcting the proposed maximum offering price per share under both the Registrant’s 2004 Equity Incentive Plan and 2004 Employee Stock Purchase Plan from \$14.30 to \$14.12, including changing the specified date that the high and low prices of the Registrant’s Common Stock were reported on the Nasdaq Global Market from March 8, 2006 to March 14, 2006;
- correcting the proposed maximum aggregate offering price under (i) the Registrant’s 2004 Equity Incentive Plan from \$40,680,825.90 to \$40,174,449.19, and (ii) the Registrant’s 2004 Employee Stock Purchase Plan from \$16,272,327.50 to \$16,069,776.85;
- correcting the amount of registration fee under (i) the Registrant’s 2004 Equity Incentive Plan from \$4,352.85 to \$4,298.67, (ii) the Registrant’s 2004 Employee Stock Purchase Plan from \$1,741.14 to \$1,719.47; and
- correcting the total registration fee from \$6,093.99 to \$6,018.13.

Except as set forth herein, the contents of the Original Registration Statement are incorporated herein by reference into this Registration Statement.

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## 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 Post-Effective Amendment No. 1 to the 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 8, 2007.

MONOLITHIC POWER SYSTEMS, INC.

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

Pursuant to the requirements of the Securities Act of 1933, this Post-Effective Amendment No. 1 to the Registration Statement on Form S-8 has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
<u>/s/ Michael R. Hsing</u> Michael R. Hsing	President, Chief Executive Officer and Director ( <i>principal executive officer</i> )	February 8, 2007
<u>/s/ C. Richard Neely</u> C. Richard Neely	Chief Financial Officer ( <i>principal financial and accounting officer</i> )	February 8, 2007
<u>*</u> Herbert Chang	Director	February 8, 2007
<u>*</u> Alan Earhart	Director	February 8, 2007
<u>/s/ Victor Lee</u> Victor Lee	Director	February 8, 2007
<u>*</u> Jim C. Moyer	Director	February 8, 2007
<u>*</u> Umesh Padval	Director	February 8, 2007

\*By: /s/ Michael R. Hsing  
Michael R. Hsing  
Attorney-in-Fact