

OMB APPROVAL	
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Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

**STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP**

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

1. Name and Address of Reporting Person* <u>Xiao Deming</u> <hr/> (Last) (First) (Middle) 79 GREAT OAKS BLVD <hr/> (Street) SAN JOSE CA 95119 <hr/> (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>MONOLITHIC POWER SYSTEMS INC</u> [ MPWR ]	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) Director 10% Owner <input checked="" type="checkbox"/> Officer (give title below) Other (specify below) <u>Pres. of MPS Asia Operations</u>
	3. Date of Earliest Transaction (Month/Day/Year) 02/06/2013	
	4. If Amendment, Date of Original Filed (Month/Day/Year)	

**Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned**

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)		4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			
Common Stock	02/06/2013		S <sup>(1)</sup>		7,114	D	\$22.8889	109,815	D	
Common Stock	02/06/2013		A <sup>(2)</sup>		1,080	A	\$0.0	110,895	D	
Common Stock	02/07/2013		S <sup>(3)</sup>		416	D	\$23.7	110,479	D	
Common Stock	02/07/2013		M <sup>(4)</sup>		20,000	A	\$18.77	29,480	I	by Spouse
Common Stock	02/07/2013		M <sup>(4)</sup>		3,000	A	\$15.6	32,480	I	by Spouse
Common Stock	02/07/2013		M <sup>(4)</sup>		8,571	A	\$15.74	41,051	I	by Spouse
Common Stock	02/07/2013		S <sup>(4)</sup>		20,000	D	\$24.9	21,051	I	by Spouse
Common Stock	02/07/2013		S <sup>(4)</sup>		3,000	D	\$24.9	18,051	I	by Spouse
Common Stock	02/07/2013		S <sup>(4)</sup>		8,571	D	\$24.9	9,480	I	by Spouse

**Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)**

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4)	8. Price of Derivative Security (Instr. 5)	9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)	
				Code	V	(A)	(D)	Date Exercisable	Expiration Date						Title
Non-Qualified Stock Option (right to buy)	\$15.6	02/07/2013		M <sup>(4)</sup>			3,000	01/31/2010	02/08/2015	Common Stock	3,000	\$0.0	0.0	I	by Spouse

**Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned  
(e.g., puts, calls, warrants, options, convertible securities)**

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4)		8. Price of Derivative Security (Instr. 5)	9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares				
Non-Qualified Stock Option (right to buy)	\$15.74	02/07/2013		M <sup>(4)</sup>			8,571	10/28/2010	10/28/2015	Common Stock	8,571	\$0.0	1,429	I	by Spouse
Non-Qualified Stock Option (right to buy)	\$18.77	02/07/2013		M <sup>(4)</sup>			20,000	08/03/2009	08/03/2014	Common Stock	20,000	\$0.0	0.0	I	by Spouse

**Explanation of Responses:**

- Shares sold to pay tax obligations resulting from the vesting of performance units (restricted stock units) originally granted on February 25, 2010. The Performance was met and the shares were released per board approval on February 5, 2013.
- Equitable stock dividend adjustment approved by the Board of Director as a result of dividend Payment to shareholders on December 28, 2012. Stock dividends will release according to the same vesting schedule as the original grants.
- Shares sold to pay tax obligations resulting from the release of restricted stock units.
- In accordance with the reporting person's 10b5-1 trading plan.

By: Saria Tseng For Deming 02/08/2013  
Xiao

\*\* Signature of Reporting Person      Date

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

\* If the form is filed by more than one reporting person, see Instruction 4 (b)(v).

\*\* Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

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