

FORM 4**UNITED STATES SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

OMB APPROVAL

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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>Sciammas Maurice</u> <hr/> (Last) (First) (Middle) <u>6409 GUADALUPE MINES ROAD</u> <hr/> (Street) <u>SAN JOSE CA 95120</u> <hr/> (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>MONOLITHIC POWER SYSTEMS INC</u> <u>[MPWR]</u> 3. Date of Earliest Transaction (Month/Day/Year) <u>12/31/2009</u> 4. If Amendment, Date of Original Filed (Month/Day/Year)	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>Sr. V.P.of Sales and Marketing</u> 6. Individual or Joint/Group Filing (Check Applicable Line) <input checked="" type="checkbox"/> Form filed by One Reporting Person Form filed by More than One Reporting Person
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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	12/31/2009		M ⁽¹⁾		6,776	A	\$1.2	51,267	D	
Common Stock	12/31/2009		M ⁽¹⁾		30,000	A	\$1.2	81,267	D	
Common Stock	12/31/2009		S ⁽¹⁾		36,776	D	\$24.1432 ⁽²⁾	44,491	D	
Common Stock								95,934	I	by Family Trust ⁽³⁾
Common Stock								24,671	I	byC Sciammas 04 TRST ⁽⁴⁾
Common Stock								24,671	I	byM Sciammas 04 Trst ⁽⁵⁾

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				
Incentive Stock Option (right to buy)	\$1.2	12/31/2009		M ⁽¹⁾			6,776	07/15/2003	07/17/2012	Common Stock	6,776	\$0	0	D	
Incentive Stock Option (right to buy)	\$1.2	12/31/2009		M ⁽¹⁾			30,000	09/10/2004	09/11/2013	Common Stock	30,000	\$0	30,000	D	

Explanation of Responses:

1. In accordance with the reporting person's 10b5-1 trading plan.

2. The price is the weighted average sale price for the transactions reported on this line. The prices for the transactions reported on this line range from \$24.04 to \$24.26. The reporting person undertakes to provide, upon request by the staff of the Securities and Exchange Commission, the issuer, or a security holder of the issuer, full information regarding the number of shares sold at each separate price
3. Shares held by Sciammas Family Living Trust, Maurice Sciammas and Christina Sciammas, Trustees
4. Shares held by Christina Sciammas 2004 Trust, Christina Sciammas and Maurice Sciammas, Trustees
5. Shares held by Maurice Sciammas 2004 Trust, Maurice Sciammas and Christina Sciammas, Trustees

By: Rick Neely For: Maurice Sciammas 01/04/2010

** 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.

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.