

<b>OMB APPROVAL</b>	
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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* <b>SMITH-PILKINGTON KAREN A</b>  (Last) (First) (Middle) <b>6409 GUADALUPE MINES ROAD</b>  (Street) <b>SAN JOSE CA 95120</b>  (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <b>MONOLITHIC POWER SYSTEMS INC</b> <b>[ MPWR ]</b>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable) <input checked="" type="checkbox"/> Director 10% Owner Officer (give title below) Other (specify below)
	3. Date of Earliest Transaction (Month/Day/Year) <b>02/09/2010</b>	
	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				

**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)	\$20.2	02/09/2010		A		25,000 <sup>(1)</sup>		02/02/2011 <sup>(2)</sup>	02/09/2017	Common Stock	25,000	\$0	25,000	D	

**Explanation of Responses:**

- Per the Company's 2004 Equity Incentive Plan, each year, on the date of the first meeting of the Board or Compensation Committee, as applicable, for the fiscal year, with such grant to be effective as of the first day that the Company's trading window re-opens (or as of the date of the meeting of the Board or Compensation Committee, as applicable, if the Company's trading window is open on such date), the Company grants each non-employee director who has been on the Board for at least six months, an option to purchase 25,000 shares of Common Stock.
- Option is 100% exercisable on the first anniversary of the Vesting Commencement Date, provided the non-employee director remains a director on such date.

By: Rick Neely For: Karen Smith Bogart 02/09/2010

\*\* 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.