

INITIAL STATEMENT OF BENEFICIAL OWNERSHIP OF SECURITIES

OMB APPROVAL

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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>Mahoney Robert Charles</u> (Last) (First) (Middle) <u>ON SEMICONDUCTOR (M/D A700)</u> <u>5005 E. MCDOWELL ROAD</u> (Street) <u>PHOENIX AZ 85008</u> (City) (State) (Zip)	2. Date of Event Requiring Statement (Month/Day/Year) 06/29/2006	3. Issuer Name and Ticker or Trading Symbol <u>ON SEMICONDUCTOR CORP [ONNN]</u> 4. 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>Executive VP, Sales & Mktg.</u>	5. If Amendment, Date of Original Filed (Month/Day/Year) 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 Beneficially Owned

1. Title of Security (Instr. 4)	2. Amount of Securities Beneficially Owned (Instr. 4)	3. Ownership Form: Direct (D) or Indirect (I) (Instr. 5)	4. Nature of Indirect Beneficial Ownership (Instr. 5)
Common Stock ⁽¹⁾	20,000	D	

Table II - Derivative Securities Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 4)	2. Date Exercisable and Expiration Date (Month/Day/Year)		3. Title and Amount of Securities Underlying Derivative Security (Instr. 4)		4. Conversion or Exercise Price of Derivative Security	5. Ownership Form: Direct (D) or Indirect (I) (Instr. 5)	6. Nature of Indirect Beneficial Ownership (Instr. 5)
	Date Exercisable	Expiration Date	Title	Amount or Number of Shares			
Stock Option (right to buy)	11/20/2002 ⁽²⁾	11/20/2012	Common Stock	200,000	1.94	D	
Stock Option (right to buy)	02/05/2003 ⁽³⁾	02/05/2013	Common Stock	17,500	1.25	D	
Stock Option (right to buy)	02/05/2004 ⁽⁴⁾	02/05/2014	Common Stock	43,000	7.02	D	
Stock Option (right to buy)	08/18/2004 ⁽⁵⁾	08/18/2014	Common Stock	8,000	3.55	D	
Stock Option (right to buy)	11/17/2004 ⁽⁶⁾	11/17/2014	Common Stock	12,000	4.23	D	
Stock Option (right to buy)	02/17/2005 ⁽⁷⁾	02/17/2015	Common Stock	40,000	4.8	D	
Stock Option (right to buy)	03/23/2006 ⁽⁸⁾	03/23/2016	Common Stock	40,850	6.83	D	

Explanation of Responses:

1. Includes 20,000 restricted stock units granted to the Reporting Person effective June 5, 2006 under the Issuer's 2000 Stock Incentive Plan with one-third vesting on March 23, 2007, one-third vesting on March 23, 2008, and the remaining units vesting on March 23, 2009.
2. Granted on November 20, 2002 under the Issuer's 2000 Stock Incentive Plan. The option is exercisable in four (4) equal installments on each of the first through fourth anniversaries of the Grant Date, subject to continued employment with the Issuers and other terms and conditions of the plan and the related stock option agreement.
3. Granted on February 5, 2003 under the Issuer's 2000 Stock Incentive Plan. The option is exercisable in four (4) equal installments on each of the first through fourth anniversaries of the Grant Date, subject to continued employment with the Issuers and other terms and conditions of the plan and the related stock option agreement.
4. Granted on February 5, 2004 under the Issuer's 2000 Stock Incentive Plan. The option is fully vested and exercisable.
5. Granted on August 18, 2004 under the Issuer's 2000 Stock Incentive Plan. The option is exercisable in four (4) equal installments on each of the first through fourth anniversaries of the Grant Date, subject to continued employment with the Issuers and other terms and conditions of the plan and the related stock option agreement.
6. Granted on November 17, 2004 under the Issuer's 2000 Stock Incentive Plan. The option is exercisable in four (4) equal installments on each of the first through fourth anniversaries of the Grant Date, subject to continued employment with the Issuers and other terms and conditions of the plan and the related stock option agreement.
7. Granted on February 17, 2005 under the Issuer's 2000 Stock Incentive Plan. The option is exercisable in four (4) equal installments on each of the first through fourth anniversaries of the Grant Date, subject to continued employment with the Issuers and other terms and conditions of the plan and the related stock option agreement.
8. Granted on March 23, 2006 under the Issuer's 2000 Stock Incentive Plan. The option is exercisable in four (4) equal installments on each of the first through fourth anniversaries of the Grant Date, subject to continued employment with the Issuers and other terms and conditions of the plan and the related stock option agreement.

Remarks:

Judith A. Boyle is signing on behalf of the Reporting Person pursuant to a Power of Attorney attached herein as an exhibit.

Robert Charles Mahoney by
Judith A. Boyle as Attorney-in- 07/05/2006
Fact

** 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 5 (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.

POWER OF ATTORNEY
(Robert Charles Mahoney)

I hereby appoint Keith D. Jackson, George H. Cave and Judith A. Boyle, and each of them, attorney-in-fact for me, each with full power of substitution, to prepare, execute and deliver on my behalf reports required to be filed by me pursuant to Section 16 of the Securities Exchange Act of 1934, as amended ("Section 16"), and Rule 144 and Rule 145 under the Securities Act of 1933 (singly or collectively (?Rule 144?)), and any and all related documents and instruments. Among other things, each attorney-in-fact is authorized to file original reports (either electronically or otherwise), signed by me or on my behalf, on Forms 3, 4 and 5, Form 144 with the Securities and Exchange Commission, any and all related documents and instruments, and to provide any necessary copies of such signed forms, documents and instruments to The NASDAQ Stock Market and ON Semiconductor Corporation as required by the rules under Section 16 and Rule 144 as in effect from time to time.

This power of attorney is effective from the date hereof until April 15, 2007, unless earlier revoked or terminated.

/s/ Robert Charles Mahoney
Robert Charles Mahoney

Dated: June 29, 2006

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