
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM S-8
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

ON Semiconductor Corporation

(Exact Name of Registrant as Specified in Its Charter)

Delaware
(State or Other Jurisdiction of
Incorporation or Organization)

36-3840979
(I.R.S. Employer Identification Number)

5005 E. McDowell Road
Phoenix, AZ 85008
(602) 244-6600

(Address of Registrant's Principal Executive Offices)

ON Semiconductor Corporation 2000 Stock Incentive Plan, and
ON Semiconductor Corporation 2000 Employee Stock Purchase Plan
(Full Title of the Plan)

George H. Cave, Esq.
ON Semiconductor Corporation
5005 E. McDowell Road
Phoenix, AZ 85008
(602) 244-5226

with a copy to:

John Dorris, Esq.
Snell & Wilmer
One Arizona Center
Phoenix, AZ 85004

(Name, Address, and Telephone Number, Including Area Code, of Agent for Service)

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Name of Plan	Amount to be registered (1)	Proposed maximum offering price per share (2)	Proposed maximum aggregate offering price	Amount of registration fee
Common Stock, par value \$.01 per share	2000 Stock Incentive Plan	25,000,000 shares	\$2.98	\$74,500,000	\$ 9,439
Common Stock, par value \$.01 per share	2000 Employee Stock Purchase Plan	3,000,000 shares	\$2.98	\$ 8,940,000	\$ 1,133
Total		28,000,000 shares	\$—	\$83,440,000	\$10,572

- (1) Together with an indeterminate number of shares that may be necessary to adjust the number of shares reserved for issuance pursuant to the ON Semiconductor Corporation 2000 Stock Incentive Plan (“Stock Incentive Plan”) and ON Semiconductor Corporation 2000 Employee Stock Purchase Plan (“Stock Purchase Plan”) as the result of a stock split, stock dividend or similar adjustment of the outstanding common stock of ON Semiconductor Corporation. In addition, pursuant to Rule 416(c) under the Securities Act of 1933, as amended (“Securities Act”), this Registration Statement also covers an indeterminate amount of interest to be offered or sold pursuant to the Stock Purchase Plan.
- (2) Estimated solely for the purposes of calculating the registration fee, pursuant to Rules 457(c) and 457(h) under the Securities Act, on the basis of the average of the high and low prices of the common stock of ON Semiconductor Corporation as reported on the NASDAQ on September 2, 2004.
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Part II
INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

The sole purpose of this Registration Statement on Form S-8 is to register up to 25,000,000 and 3,000,000 additional shares of the Corporation's common stock for issuance under the Stock Incentive Plan and the Stock Purchase Plan, respectively. Pursuant to General Instruction E to Form S-8, the contents of the Corporation's Registration Statements on Form S-8 filed with the Securities and Exchange Commission ("Commission") on April 6, 2000 (Registration No. 333-34130), May 23, 2000 (Registration No. 333-37638), October 10, 2001 (Registration 333-71336) and August 12, 2003 (Registration No. 333-107896) are hereby incorporated by reference in this Registration Statement.

Item 8. Exhibits.

The following exhibits are filed with or incorporated by reference into this Registration Statement (numbering corresponds to Exhibit Table in Item 601 of Regulation S-K):

- 4.1 ON Semiconductor Corporation 2000 Stock Incentive Plan (as adopted by the Board of Directors on February 17, 2000, amended and restated April 21, 2000, amended and restated May 18, 2001, amended and restated May 23, 2001, amended and restated May 21, 2003 and amended and restated May 19, 2004) (filed as Exhibit 10.7 to the Corporation's Form 10-Q for the second quarter of 2004 filed with the Commission on August 6, 2004 and incorporated herein by reference)
- 4.2 ON Semiconductor Corporation 2000 Employee Stock Purchase Plan (as adopted by the Board of Directors on February 17, 2000, amended and restated April 21, 2000, amended and restated May 23, 2001 and amended and restated May 19, 2004) (filed as Exhibit 10.8 to the Corporation's Form 10-Q for the second quarter of 2004 filed with the Commission on August 6, 2004 and incorporated herein by reference)
- 5.1 Opinion of George H. Cave, Esq., regarding the validity of the securities being registered*
- 23.1 Consent of Independent Registered Public Accounting Firm - PricewaterhouseCoopers LLP*
- 23.2 Consent of George H. Cave, Esq. (included in Exhibit 5.1)*
- 24.1 Power of Attorney (included on signature page)*

* Filed herewith.

Item 9. Undertakings.

Not applicable.

Pursuant to the requirements of the Securities Act of 1933, the trustee (or other persons who administer the employee benefit plan) has duly caused this Registration Statement to be signed on its behalf, thereunto duly authorized, in the City of Phoenix, State of Arizona, on this day of September 3, 2004.

ON SEMICONDUCTOR CORPORATION
2000 EMPLOYEE STOCK PURCHASE PLAN

By: _____ /s/ ROBERT ZIERK
Its: **Administrator**

EXHIBIT INDEX

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* Filed herewith.

ON SEMICONDUCTOR CORPORATION

September 3, 2004

ON Semiconductor Corporation
5005 McDowell Rd.
Phoenix, AZ 85008

Dear Sirs:

I refer to the Registration Statement on Form S-8 ("Registration Statement") to be filed by ON Semiconductor Corporation today with the Securities and Exchange Commission ("Commission") under the Securities Act of 1933, as amended ("Act"), relating to the shares of Common Stock, \$.01 par value, of ON Semiconductor Corporation to be issued under the ON Semiconductor Corporation 2000 Stock Incentive Plan (last amended and restated as of May 19, 2004), and the ON Semiconductor Corporation 2000 Employee Stock Purchase Plan (last amended and restated as of May 19, 2004) (collectively referred to as "Plans").

In connection with the foregoing registration, I have acted as the general counsel of ON Semiconductor Corporation and have examined and am relying on originals, or copies certified or otherwise identified to my satisfaction, of such corporate records and such other instruments, and I have made such investigations of law, as I have deemed appropriate as a basis for the opinion expressed below.

Based on the foregoing, it is my opinion that the shares of ON Semiconductor Corporation issuable under the Plans are duly authorized and, when issued in accordance with the terms of the Plans, at prices in excess of the par value thereof, will be validly issued, fully paid and nonassessable.

I hereby consent to the filing of this opinion as an exhibit to the Registration Statement. By giving such consent, I do not thereby admit that I am an expert with respect to any part of the Registration Statement, including this exhibit, within the meaning of the term "expert" as used in the Act or the rules and regulations of the Commission issued thereunder.

Very truly yours,

/s/ George H. Cave

George H. Cave, Esq.
Senior Vice President, General Counsel and Secretary

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in this Registration Statement on Form S-8 of ON Semiconductor Corporation of the following reports, which appear in ON Semiconductor Corporation's Annual Report on Form 10-K/A for the year ended December 31, 2003 filed on March 22, 2004:

- Our report dated February 2, 2004 relating to the financial statement schedule of ON Semiconductor Corporation; and,
- Our report dated February 2, 2004, except for the third paragraph of Note 2 and the third paragraph of Note 11 for which the date is February 9, 2004, relating to the consolidated financial statements of ON Semiconductor Corporation.

We also consent to the incorporation by reference in this Registration Statement on Form S-8 of ON Semiconductor Corporation of the following reports, which appear in ON Semiconductor Corporation's Current Report on Form 8-K filed on May 12, 2004:

- Our report dated February 2, 2004, except for the third paragraph of Note 2 for which the date is February 9, 2004, relating to the consolidated financial statements of Semiconductor Components Industries, LLC (a wholly-owned subsidiary of ON Semiconductor Corporation);
- Our report dated February 2, 2004, except for the third paragraph of Note 2 for which the date is February 9, 2004, relating to the consolidated financial statements of SCG (China) Holding Corporation (a wholly-owned subsidiary of ON Semiconductor Corporation);
- Our report dated February 2, 2004, except for the third paragraph of Note 2 for which the date is February 9, 2004, relating to the consolidated financial statements of ON Semiconductor Trading Ltd. (an indirect wholly-owned subsidiary of ON Semiconductor Corporation);
- Our report dated February 2, 2004, except for the third paragraph of Note 2 for which the date is February 9, 2004, relating to the consolidated financial statements of SCG Malaysia Holdings Sdn. Bhd. (an indirect wholly-owned subsidiary of ON Semiconductor Corporation);
- Our report dated February 2, 2004, except for the third paragraph of Note 2 for which the date is February 9, 2004, relating to the financial statements of ON Semiconductor Japan Technology, Ltd. (an indirect wholly-owned subsidiary of ON Semiconductor Corporation); and,
- Our report dated February 2, 2004, except for the third paragraph of Note 2 for which the date is February 9, 2004, relating to the financial statements of SCG Philippines, Incorporated (an indirect wholly-owned subsidiary of ON Semiconductor Corporation).

/S/ PRICEWATERHOUSECOOPERS LLP
Phoenix, Arizona
September 2, 2004