

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**  
Washington, D.C. 20549

**SCHEDULE 13D**

Under the Securities Exchange Act of 1934

**California Micro Devices Corporation**

(Name of Issuer)

**Common Stock, \$0.01 per value**  
(Title of Class of Securities)

**130439102**  
(CUSIP Number)

**George H. Cave, Esq.**  
**Senior Vice President, General Counsel and Secretary**  
**ON Semiconductor Corporation**  
**5005 E. McDowell Road**  
**Phoenix, Arizona 85008**  
**(602) 244-6600**

(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)

**December 14, 2009**  
(Date of Event which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of § 240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box.

**Note:** Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See §240.13d-7 for other parties to whom copies are to be sent.

\* The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

**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 control number.**

CUSIP No. 130439102

1.	Names of Reporting Persons.  ON Semiconductor Corporation	
2.	Check the Appropriate Box if a Member of a Group (See Instructions) (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3.	SEC Use Only	
4.	Source of Funds (See Instructions)  OO	
5.	Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e)  <input type="checkbox"/>	
6.	Citizenship or Place of Organization  Delaware	
Number of Shares Beneficially Owned by Each Reporting Person With	7.	Sole Voting Power  None
	8.	Shared Voting Power  5,047,500 (1)
	9.	Sole Dispositive Power  None
	10.	Shared Dispositive Power  None
11.	Aggregate Amount Beneficially Owned by Each Reporting Person  5,047,500 (1)	
12.	Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)  <input type="checkbox"/>	
13.	Percent of Class Represented by Amount in Row (11)  19.5% (2)	
14.	Type of Reporting Person (See Instructions)  CO	

(1) Based on data provided to ON Semiconductor Corporation (“ON”) by California Micro Devices Corporation (“CMD”). Beneficial ownership of the CMD common stock referred to herein is being reported hereunder solely because ON may be deemed to have beneficial ownership, as a result of the Tender and Voting Agreements (described further in Items 3 and 4 of this Schedule 13D) among ON and certain stockholders of CMD and the irrevocable proxies associated therewith, of 5,047,500 shares of CMD common stock, consisting of: 2,259,263 shares of outstanding CMD common stock, 2,763,237 shares of CMD common stock subject to outstanding unexercised options, and 25,000 CMD restricted stock units which are settleable in CMD common stock. The filing of this Schedule 13D shall not be construed as an admission that ON is, for purposes of Section 13(d) of the Securities Exchange Act of 1934, as amended, or for any other purpose, the beneficial owner of any of such shares of CMD.

(2) Based upon 25,861,426 common shares of CMD, including 23,073,189 shares of CMD common stock outstanding on December 14, 2009 (as represented by CMD in the Agreement and Plan of Merger dated as of December 14, 2009 by and among CMD, ON and Pac-10 Acquisition Corporation) and the following shares of CMD common stock and other rights to acquire CMD common shares held by the parties to the Tender and Voting Agreements as provided to ON by such parties: 2,763,237 shares of CMD common stock subject to outstanding unexercised options and 25,000 CMD restricted stock units which are settleable in CMD common stock.

**Item 1. Security and Issuer.**

This statement on Schedule 13D relates to the Common Stock, par value \$0.001 per share ("CMD Common Stock"), of California Micro Devices Corporation, a Delaware corporation ("CMD"). The address of the principal executive office of CMD, the issuer, is 490 N. McCarthy Blvd., Suite 100, Milpitas, California 95035.

**Item 2. Identity and Background.**

This statement is filed by ON Semiconductor Corporation ("ON"), a Delaware corporation. ON is a global supplier of power and data management semiconductors and standard semiconductor components, and it designs, manufactures, and markets an extensive portfolio of semiconductor components that address the design needs of sophisticated electronic systems and products. The address of ON's principal business and principal office is 5005 E. McDowell Road, Phoenix, AZ 85008.

The names, business addresses, citizenship, and present principal occupation or employment of the directors and executive officers of ON are as set forth in Annex 1 hereto and incorporated herein by this reference.

Neither ON, nor, to its knowledge, any person listed in Annex 1 hereto has during the last five years (a) been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors) or (b) been a party to a civil proceeding of a judicial or administrative body of competent jurisdiction and as a result of such proceeding was or is subject to a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws.

**Item 3. Source and Amount of Funds or Other Consideration.**

As an inducement for ON to enter into the Merger Agreement (as defined in Item 4 below) with CMD, and in consideration thereof, certain beneficial owners of an aggregate of 5,047,500 shares of CMD Common Stock outstanding and subject to rights to acquire (the "Stockholders") entered into tender and voting agreements, each dated as of December 14, 2009, with ON (the "Voting Agreements") whereby each Stockholder has agreed to vote with respect to such Stockholder's shares of CMD Common Stock and have appointed ON as such Stockholder's proxy and attorney-in fact to vote such shares as described in Item 4 below. No funds were used and no funds are to be used by ON in entering into the Voting Agreements and in acquiring the proxies thereunder. The Voting Agreements and proxies were acquired by ON as part of the package of agreements as described in Item 4 below. Copies of the Merger Agreement and the forms of Voting Agreements are filed as Exhibits 2.1, 2.2 and 2.3, respectively, to ON's Current Report on Form 8-K filed with the Securities and Exchange Commission (the "SEC") on December 14, 2009, and are incorporated by reference herein.

**Item 4. Purpose of Transaction.**

On December 14, 2009, ON entered into an Agreement and Plan of Merger (the "Merger Agreement") by and among Pac-10 Acquisition Corporation, a Delaware corporation and an indirect wholly owned subsidiary of ON ("Purchaser"), and CMD.

Pursuant to the terms and subject to the conditions set forth in the Merger Agreement, Purchaser will commence a tender offer (the "Offer") to purchase all of the outstanding shares of CMD Common Stock at a purchase price of \$4.70 per share in cash (the "Offer Price"). Upon successful completion of the Offer, and subject to the terms and conditions of the Merger Agreement, Purchaser will be merged with and into CMD (the "Merger") and CMD will survive the Merger as an indirect wholly owned subsidiary of ON.

As noted in Item 3 above, as an inducement to ON to enter into the Merger Agreement, each Stockholder executed a Voting Agreement pursuant to which such Stockholder agreed to tender such Stockholder's shares of CMD Common Stock in connection with the Offer and to vote in favor of the Merger. In addition, such Stockholders have agreed, subject to certain exceptions, to refrain from disposing of their Shares and soliciting alternative acquisition proposals to the Merger. ON, and such designees as it may name, were appointed as each such Stockholder's attorney-in-fact and each Stockholder executed an irrevocable proxy to vote such Stockholder's shares of CMD Common Stock for the limited purposes set forth above, with respect to any meeting of the stockholders of CMD or any consent in lieu of any such meeting or otherwise. As of December 14, 2009, the Stockholders beneficially owned 5,047,500 shares of CMD

Common Stock in the aggregate, which represents 19.5% in the aggregate of all of the outstanding shares of CMD Common Stock, based upon 25,861,426 shares of CMD Common Stock, including 23,073,189 shares of CMD Common Stock outstanding on December 14, 2009 (as represented by CMD in the Merger Agreement), and the following shares of CMD Common Stock and other rights to acquire CMD Common Stock held by the parties to the Voting Agreements as provided to ON by such parties: 2,763,237 shares of CMD Common Stock subject to outstanding unexercised options and 25,000 CMD restricted stock units settleable in shares of CMD Common Stock.

None of the Stockholders were paid any additional consideration in connection with entering into the Voting Agreement. The Stockholders have agreed, subject to limited exceptions, not to sell, transfer, pledge, encumber, assign or otherwise dispose of, or enter into any contract, option or other arrangement or understanding with respect to the sale, transfer, pledge, encumbrance, assignment or other disposition of any shares of CMD Common Stock beneficially owned or acquire by them until the termination of their respective Voting Agreement. The Voting Agreements and proxy terminate upon the earlier to occur of (a) the mutual written consent of ON and the Stockholders, (c) the termination of the Offer prior to the acceptance time thereof, (c) the effective time of the Merger, or (d) such date and time as the Merger Agreement shall have been terminated in accordance with its terms.

There can be no assurance that the Offer will close or that the Merger will occur. Should the Merger be consummated, CMD Common Stock will cease to be listed on the NASDAQ Stock Market and will become eligible for termination of registration pursuant to Section 12(g)(4) of the Securities Exchange Act of 1934, as amended.

The foregoing summary of certain provision of the Merger Agreement and the Voting Agreements is not intended to be complete and is qualified in its entirety by reference to ON's Current Report on Form 8-K filed with the SEC on December 14, 2009, and the exhibits attached thereto, including the Merger Agreement and the Voting Agreements.

**Item 5. Interest in Securities of the Issuer.**

(a) – (b) As of the filing date of this Schedule 13D, as a result of the Voting Agreements, ON may be deemed to have: (i) beneficial ownership (within the meaning of Rule 13d-3 under the Exchange Act) of, and (ii) shared power to vote or direct the vote of, 5,047,500 shares of CMD Common Stock which represents 19.5% of the shares of CMD Common Stock deemed to be outstanding, pursuant to Rule 13d-3(d)(1), subject to the conditions and limitations of the Voting Agreements.

Apart from the terms and conditions set forth in the Voting Agreements, ON is not entitled to any rights of a stockholder of CMD. ON does not, other than as specified in the Voting Agreements, have (1) sole or shared power to vote or direct the vote of CMD Common Stock; or (2) sole or shared power to dispose or direct the disposition of CMD Common Stock.

ON disclaims any beneficial ownership of such shares, and nothing herein shall be deemed to be an admission by ON as to the beneficial ownership of such shares.

To ON's knowledge, no shares of CMD Common Stock are beneficially owned by any of the persons identified in Annex 1 hereto.

(c) Except as set forth or incorporated herein, neither ON nor, to ON's knowledge, any of the individuals referred to in Annex 1 hereto, has effected any transaction in CMD Common Stock during the past 60 days.

(d) Except as set forth in this Statement, to the knowledge of ON, no other person is known to have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the shares of CMD Common Stock held by the Stockholders.

(e) Not applicable.

**Item 6. Contracts, Arrangements, Understandings or Relationships With Respect to Securities of the Issuer.**

The information set forth, or incorporated by reference, in Items 3 through 5 of this statement is hereby incorporated by this reference. To ON's knowledge, except as otherwise described in this Schedule 13D, there are no contracts, arrangements, understandings or relationships among the persons named in Item 2 above, and between any such person and any other person, with respect to any securities of CMD.

**Item 7. Material to be Filed as Exhibits.**

- Exhibit 1. Agreement and Plan of Merger, dated December 14, 2009, by and between ON Semiconductor Corporation, Pac-10 Acquisition Corporation and California Micro Devices Corporation (incorporated herein by reference to Exhibit 2.1 to ON Semiconductor Corporation's Current Report on Form 8-K filed with the SEC on December 14, 2009).
- Exhibit 2. Form of Tender and Voting Agreement, dated December 14, 2009, by and among ON Semiconductor Corporation, Pac-10 Acquisition Corporation, California Micro Devices Corporation and each of the following executive officers, directors and stockholders of California Micro Devices Corporation: Robert V. Dickinson, Kevin Berry, Kyle Baker, Daniel Hauck, Jurgen Lutz, Manuel Mere, Dr. Ed Ross, Jon S. Castor, John Fichthorn, J. Michael Gullard, Kenneth Potashner and David Wittrock (incorporated herein by reference to Exhibit 2.2 to ON Semiconductor Corporation's Current Report on Form 8-K filed with the SEC on December 14, 2009).
- Exhibit 3. Form of Tender and Voting Agreement, dated December 14, 2009, by and among ON Semiconductor Corporation, Pac-10 Acquisition Corporation, California Micro Devices Corporation and Dialectic Capital Management, LLC (incorporated herein by reference to Exhibit 2.3 to ON Semiconductor Corporation's Current Report on Form 8-K filed with the SEC on December 14, 2009).



**Information Concerning Executive Officers and  
Directors of ON Semiconductor Corporation**

The current corporate officers and directors of ON Semiconductor Corporation are listed below. The current business address of each person is 5005 E. McDowell Road, Phoenix, AZ 85008 and the current phone number is (602) 244-6600. Unless otherwise noted, each of the individuals listed below is, to ON's knowledge, a United States citizen.

**1. Officers of ON Semiconductor Corporation**

<b>Name</b>	<b>Present Position with ON</b>
Keith D. Jackson	President and Chief Executive Officer
Donald A. Colvin*	Executive Vice President, Chief Financial Officer and Treasurer
Robert C. Mahoney	Executive Vice President, Sales and Marketing
W. John Nelson, Ph.D.	Executive Vice President and Chief Operating Officer
George H. Cave	Senior Vice President, General Counsel, Chief Compliance & Ethics Officer and Secretary
William M. Hall	Senior Vice President and General Manager, Standard Products Group
Robert A. Klosterboer	Senior Vice President and General Manager, Digital and Mixed-Signal Products Group
William A. Schromm	Senior Vice President and General Manager, Computing and Consumer Products Group
Michael A. Williams	Senior Vice President and General Manager, Automotive and Power Regulation Group

\* Mr. Colvin is a British citizen.

**2. Directors of ON Semiconductor Corporation**

<b>Name</b>	<b>Present Position/Principal Occupation or Employment</b>
J. Daniel McCranie	Executive Chairman of Virage Logic
Keith D. Jackson	President and Chief Executive Officer of ON Semiconductor Corporation
Francis P. Barton	Director of ON Semiconductor Corporation
Curtis J. Crawford, Ph.D.	President and Chief Executive Officer of XCEO, Inc.
Emmanuel T. Hernandez	Director of ON Semiconductor Corporation
Phillip D. Hester	Senior Vice President of Research and Development at National Instruments Corporation
Daryl Ostrander	Founder of Ostrander Holdings, LLC
Robert H. Smith	Director of ON Semiconductor Corporation