UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of The Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): June 9, 2006

MICROSEMI CORPORATION

(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction 0-8866 (Commission File Number) 95-2110371 (IRS Employer

of incorporation)

Identification No.)

2381 Morse Avenue, Irvine, California (Address of principal executive offices)

92614 (Zip Code)

Registrant s telephone number, including area code

(949) 221-7100

(Former name or former address, if changed since last report.)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

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- " Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- " Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- " Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- " Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

INFORMATION TO BE INCLUDED IN THE REPORT

Section 1 - Registrant s Business and Operations

Item 1.01 Entry into a Material Definitive Agreement.

On June 9, 2006 Microsemi Corporation, a Delaware corporation (the Registrant), entered into the Tenth Amendment to Credit Agreement dated as of June 1, 2006, between the Registrant and Comerica Bank (the Amendment) which further amended the Credit Agreement dated as of April 2, 1999, by and among the Registrant, the Lenders party thereto, and Canadian Imperial Bank of Commerce, as agent for the Lenders, which had been previously assigned to Comerica Bank as the sole Lender and Administrative Agent (as so amended, the Credit Agreement).

Pursuant to the Amendment, the subsidiaries of the Registrant that the Registrant acquired in connection with its acquisition of Advanced Power Technology, Inc., a Delaware corporation, became additional parties to security agreements and became guarantors of the Registrant s obligations under the Credit Agreement. The Amendment made no other changes and no material changes to the Credit Agreement.

The Credit Agreement had been previously amended by the First Amendment to Credit Agreement dated as of June 25, 1999, the Second Amendment to Credit Agreement dated as of February 14, 2000, the Third Amendment to Credit Agreement dated as of April 2, 2001, the Fourth Amendment to Credit Agreement dated as of December 5, 2002, the Sixth Amendment to Credit Agreement dated as of December 10, 2003, the Seventh Amendment to Credit Agreement dated as of March 31, 2004, the Eighth Amendment to Credit Agreement dated as of March 31, 2004, and the Ninth Amendment to Credit Agreement dated as of March 29, 2005.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

MICROSEMI CORPORATION (Registrant)

Date: June 14, 2006

/s/ DAVID R. SONKSEN David R. Sonksen Executive Vice President, Chief Financial Officer, Treasurer and Secretary