

Item 9.01. Financial Statements and Exhibits.

Exhibit 99.1. Press release dated April 23, 2009

SIGNATURE

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

Microsemi Corporation

(Registrant)

/s/ JOHN W. HOHENER

April 23, 2009

(Date)

John W. Hohener

Vice President, Chief Financial Officer, Treasurer and Secretary

Exhibit Index

99.1 Press release dated April 23, 2009