Filed by ON Semiconductor Corporation Pursuant to Rule 425 under the Securities Act of 1933 and deemed filed pursuant to Rule 14a-12 of the Securities Exchange Act of 1934 Subject Company: Catalyst Semiconductor, Inc.

This document contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements include, but are not limited to, statements related to the benefits of the proposed transaction between ON Semiconductor Corporation ("ON") and Catalyst Semiconductor ("Catalyst Semiconductor") and the future financial performance of ON. These forward-looking statements are based on information available to ON and Catalyst Semiconductor as of the date of this release and current expectations, forecasts and assumptions and involve a number of risks and uncertainties that could cause actual results to differ materially from those anticipated by these forward-looking statements. Such risks and uncertainties include a variety of factors, some of which are beyond ON's or Catalyst Semiconductor's control. In particular, such risks and uncertainties include difficulties encountered in integrating merged businesses; the risk that the transaction does not close, including the risk that the requisite stockholder and regulatory approvals may not be obtained; the variable demand and the aggressive pricing environment for semiconductor products; dependence on each company's ability to successfully manufacture in increasing volumes on a cost-effective basis and with acceptable quality its current products; the adverse impact of competitive product announcements; revenues and operating performance, changes in overall economic conditions, the cyclical nature of the semiconductor industry, changes in demand for our products, changes in inventories at customers and distributors, technological and product development risks, availability of raw materials, competitors' actions, pricing and gross margin pressures, loss of key customers, order cancellations or reduced bookings, changes in manufacturing yields, control of costs and expenses, significant litigation, risks associated with acquisitions and dispositions, risks associated with leverage and restrictive covenants in debt agreements, risks associated with international operations, the threat or occurrence of international armed conflict and terrorist activities both in the United States and internationally, risks and costs associated with increased and new regulation of corporate governance and disclosure standards (including pursuant to Section 404 of the Sarbanes-Oxlev Act of 2002), and risks involving environmental or other governmental regulation. Information concerning additional factors that could cause results to differ materially from those projected in the forward-looking statements is contained in ON's Annual Report on Form 10-K as filed with the Securities and Exchange Commission (the "SEC") on February 12, 2008, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and other of ON's SEC filings, and Catalyst Semiconductor's Annual Report on Form 10-K as filed with the SEC on July 3, 2008, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and other of Catalyst Semiconductor SEC filings. These forward-looking statements should not be relied upon as representing ON's or Catalyst Semiconductor's views as of any subsequent date and neither undertake any obligation to update forward-looking statements to reflect events or circumstances after the date they were made.

This communication is being made in respect of the proposed transaction involving ON and Catalyst Semiconductor. In connection with the proposed transaction, ON plans to file with the SEC a Registration Statement on Form S-4 containing a Proxy Statement of Catalyst Semiconductor and a Prospectus of ON, and each of ON and Catalyst Semiconductor plan to file with the SEC other documents regarding the proposed transaction. The definitive Proxy Statement/Prospectus will be mailed to stockholders of Catalyst Semiconductor. INVESTORS AND SECURITY HOLDERS ARE URGED TO READ THE PROXY STATEMENT/PROSPECTUS AND OTHER DOCUMENTS FILED WITH THE SEC CAREFULLY IN THEIR ENTIRETY WHEN THEY BECOME AVAILABLE BECAUSE THEY WILL CONTAIN IMPORTANT INFORMATION ABOUT THE PROPOSED TRANSACTION.

Investors and security holders will be able to obtain free copies of the Registration Statement and the Proxy Statement/Prospectus (when available) and other documents filed with the SEC by ON and Catalyst Semiconductor through the web site maintained by the SEC at www.sec.gov. In addition, investors and security holders will be able to obtain free copies of the Registration Statement and the Proxy Statement/Prospectus (when available) and other documents filed with the SEC from ON by directing a request to ON Semiconductor Corporation, 5005 East McDowell Road, Phoenix, AZ, 85008, Attention: Investor Relations (telephone: (602) 244-3437) or going to ON's corporate website at www.onsemi.com, or from Catalyst Semiconductor by directing a request to Catalyst Semiconductor, Inc., 2975 Stender Way, Santa Clara, CA 95054, Attention: Investor Relations (telephone: (408) 542-1200) or going to Catalyst Semiconductor's corporate website at www.catsemi.com.

ON and Catalyst Semiconductor and their respective directors and executive officers may be deemed to be participants in the solicitation of proxies in respect of the proposed transaction. Information regarding ON's directors and executive officers is contained in ON's annual proxy statement filed with the SEC on April 4, 2008, as supplemented a Current Report on Form 8-K filed with the SEC on March 17, 2008. Information regarding Catalyst Semiconductor's directors and executive officers is contained in Catalyst Semiconductor's annual proxy statement filed with the SEC on August 24, 2007. Additional information regarding the interests of such potential participants will be included in the Proxy Statement/Prospectus and the other relevant documents filed with the SEC (when available).

Filed below is an excerpt from a transcript of ON's conference call with the financial community and others regarding its second quarter of 2008 results.

EXCERPTS FROM THE CONFERENCE CALL TRANSCRIPT -----

A. PREFACE INFORMATION-

ON Semiconductor Corporation Second Quarter 2008

Earnings Conference Call with the Financial Community and Others

Event Date/Time: August 06, 2008 /6:00 AM ET

CORPORATE PARTICIPANTS

• Ken Rizvi ON Semiconductor Corporation—IR

Keith Jackson

ON Semiconductor Corporation—CEO

Donald Colvin

ON Semiconductor Corporation-CFO

B. EXCERPTS FROM QUESTION AND ANSWER PORTION-

Ramesh Misra—Collins Stewart—Analyst

Good.

In regards to your Catalyst acquisition, one, I wanted to ask you about your commentary about it being EPS-positive in about a year, even though Catalyst has been profitable. And then, the other thing was what other synergies or what are some of the reasons that drove to acquire Catalyst?

Donald Colvin—ON Semiconductor Corporation—CFO

Well, obviously, the deal is not done, so we don't want to comment too much but, it just kind of fits with our overall portfolio expansion.

We have purchased two businesses recently, and it's fair to say that we're very happy with how they've performed. And they have been very accretive to our market penetration and our results, even our gross margins shows.

And so, we see this business as being another one that can integrate well into our infrastructure. We'd rather not comment too much on the specifics because the deal is anticipated to close at the beginning of the fourth quarter.

And from our experience, we know that we can get some traction on revenue and we can save on costs, particularly in the back end and the front end costs. And a lot of their products will fit into our factories, in general, and Gresham in particular.

I don't know if you want to add anything, Keith.

Keith Jackson—ON Semiconductor Corporation—CEO

No. I mean, I think that is very true. I'll let you guys again look at some of the earnings side relative to when it's going to break even. Certainly, you need to comprehend the cash impact for the Company as well.

So, net/net, we don't want to comment more at this time, but we do think it will be very similar to the add-in models we did with our power business from ADI.

Donald Colvin -ON Semiconductor Corporation-CFO

And I think the key thing as well is we're not talking anything like the same size of acquisition as AMI. I mean, you're talking about much, much smaller that represents in that 2% of enterprise value for ON.

And so, I mean, it's a great thing, but it's not a huge acquisition for ON. And so, it doesn't take too much to get that earnings mutual and stock to become positive.