



DIVISION OF
CORPORATION FINANCE

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

August 17, 2010

Andy Moring
Executive Vice President — Finance and Chief Financial Officer
Mattson Technology, Inc.
47131 Bayside Parkway
Fremont, California 94538

Re: Mattson Technology, Inc.
Form 10-K for the fiscal year ended December 31, 2009
Filed March 5, 2010
File No. 000-24838

Dear Mr. Moring:

We have reviewed your filing and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter within ten business days by providing the requested information or by advising us when you will provide the requested response. If you do not believe our comments apply to your facts and circumstances, please tell us why in your response.

After reviewing the information you provide in response to these comments, we may have additional comments.

Item 10. Directors and Executive Officers of the Registrant, page 74

1. We refer to your disclosure under “Director Nomination and Qualification” of your definitive proxy statement that you have incorporated by reference into your Form 10-K and note that your nominating and governance committee “considers a mix of attributes, including...diversity” in nominating candidates to the board of directors. Please tell us and revise your future filings to explain in greater detail how the nominating and governance committee considers diversity in evaluating director nominees and to clarify whether the committee has a policy with regard to the consideration of diversity in identifying director nominees. If the committee does have such a policy, please tell us and expand your disclosure in future filings to describe how the policy is implemented and how the committee assesses the policy’s effectiveness. See Regulation S-K Item 407(c)(2)(vi).
2. We refer to your disclosure under “Board Leadership Structure” on page 29 of your definitive proxy statement. In future filings, please revise this section to clarify, if true, that two individuals serve in the positions of principal executive officer and chairman of

the board. See Regulation S-K Item 407(h). Furthermore, please tell us and revise your future filings to disclose why you have determined that your leadership structure is appropriate, given your specific characteristics or circumstances.

Item 11. Executive Compensation, page 74

3. We note your disclosure under Assessment of Compensation and Risk on page 18 of your proxy statement. Please describe the process you undertook to reach the conclusion that disclosure pursuant to Regulation S-K Item 402(s) is not necessary. For example, your response should detail how your compensation program's focus "on both the short- and long-term operational and financial goals" and how your "very limited incentive compensation programs" led to such conclusion.

Item 13. Certain Relationships and Related Transactions..., page 74

4. We refer to your disclosure in the second paragraph on page 33 of your proxy. Please tell us and revise your future filings to describe your policies and procedures for the review, approval or ratification of any transaction required to be reported pursuant to Regulation S-K Item 404(a). Your revised disclosure should indicate what parameters are used in evaluating related person transactions and describe how your policies and procedures are evidenced. Refer to Regulation S-K Item 404(b)(1). See also Question 130.06 of the Regulation S-K Compliance and Disclosure Interpretations, available on our website at <http://www.sec.gov/divisions/corpfin/guidance/regs-kinterp.htm>.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Exchange Act of 1934 and all applicable Exchange Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In responding to our comments, please provide a written statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Andy Moring
Mattson Technology, Inc.
August 17, 2010
Page 3

Please contact Celia Soehner at (202) 551-3463 or Tim Buchmiller, Senior Attorney, at (202) 551-3635 with any questions.

Sincerely,

Russell Mancuso
Branch Chief

cc (via facsimile): Tony Jeffries, Esq. — Wilson Sonsini Goodrich & Rosati P.C.