
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM S-3

REGISTRATION STATEMENT Under THE SECURITIES ACT OF 1933

Mattson Technology, Inc.

(Exact name of Registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

77-0208119
(I.R.S. Employer Identification Number)

**47131 Bayside Parkway
Fremont, California 94538
(510) 657-5900**

(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

**David Dutton
President and Chief Executive Officer
Mattson Technology, Inc.
47131 Bayside Parkway
Fremont, California 94538
(510) 657-5900**

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copy to:

**Tony Jeffries, Esq.
Michael A. Occhiolini, Esq.
Wilson Sonsini Goodrich & Rosati,
Professional Corporation
650 Page Mill Road
Palo Alto, CA 94304
Telephone: (650) 493-9300
Facsimile: (650) 493-6811**

Approximate date of commencement of proposed sale to the public:

From time to time, after the effective date of this Registration Statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box. ☐

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box. ☒

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box. ☐

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of “large accelerated filer,” “accelerated filer” and “smaller reporting company” in Rule 12b-2 of the Exchange Act.

Large Accelerated filer ☐

Accelerated filer ☒

Non-accelerated filer ☐ (Do not check if smaller reporting company)

Smaller reporting company ☐

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount To Be Registered(1)	Proposed Maximum Offering Price per Unit or Share (1)(2)	Proposed Maximum Aggregate Offering Price(1)(2)	Amount of Registration Fee (3)
Common Stock, \$0.001 par value per share (4) (5)	—	—	—	—
Preferred Stock, \$0.001 par value per share (4)	—	—	—	—
Depository Shares	—	—	—	—
Warrants	—	—	—	—
Debt Securities	—	—	—	—
Units	—	—	—	—
Total (6)	\$75,000,000	—	\$75,000,000	\$5,347.50

- Pursuant to Rule 457(i) under the Securities Act of 1933 (the “Securities Act”), the securities registered hereunder include such indeterminate number of shares of common stock, preferred stock or depository shares, number of warrants and units and principal amount of debt securities as may be issued upon conversion or exchange of any preferred stock, warrants or debt securities registered hereunder that provide for conversion or exchange, upon exercise of warrants or pursuant to the anti-dilution provisions of any such securities.
- The proposed maximum per unit and aggregate offering prices per class of securities will be determined from time to time by the registrant in connection with the issuance by the registrant of the securities registered under this registration statement and is not specified as to each class of security pursuant to General Instruction II.D of Form S-3 under the Securities Act.
- Calculated pursuant to Rule 457(o) under the Securities Act.
- Includes an indeterminate number of shares of common stock or preferred stock as may be sold from time to time, at indeterminate prices.
- Includes rights to purchase common stock pursuant to the Registrant’s rights plan which, prior to certain events, will not be exercisable or evidenced separately from the common stock.
- Any securities registered hereunder may be sold separately or as units with other securities registered hereunder. The proposed maximum offering price per unit will be determined by us in connection with the issuance of the securities. In no event will the aggregate offering price of all securities issued from time to time pursuant to this Registration Statement exceed \$75,000,000 (or the equivalent thereof in one or more foreign currencies, foreign currency units or composite currencies).

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until this Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

SUBJECT TO COMPLETION, DATED JULY 21, 2010

PROSPECTUS

[MATTSON LOGO]

\$75,000,000

Mattson Technology, Inc.

By this prospectus, Mattson may offer, from time to time:

- Common stock
- Preferred stock
- Depositary Shares
- Warrants
- Debt securities
- Units

Mattson may offer and sell from time to time, in one or more series or issuances and on terms that Mattson will determine at the time of the offering, any combination of the securities described in this prospectus, up to an aggregate amount of \$75,000,000.

We will provide specific terms of any offering in a supplement to this prospectus. Any prospectus supplement may also add, update, or change information contained in this prospectus. You should carefully read this prospectus and the applicable prospectus supplement as well as the documents incorporated or deemed to be incorporated by reference in this prospectus before you purchase any of the securities offered hereby.

These securities may be offered and sold in the same offering or in separate offerings; to or through underwriters, dealers, and agents; or directly to purchasers. The names of any underwriters, dealers, or agents involved in the sale of our securities, their compensation and any over-allotment options held by them will be described in the applicable prospectus supplement. See “Plan of Distribution.”

Our common stock is listed on the Nasdaq Global Select Market under the symbol “MTSN.” We will provide information in any applicable prospectus supplement regarding any listing of securities other than shares of our common stock on any securities exchange.

INVESTING IN OUR SECURITIES INVOLVES SIGNIFICANT RISKS. SEE “RISK FACTORS” BEGINNING ON PAGE 3 OF THIS PROSPECTUS AND IN THE APPLICABLE PROSPECTUS SUPPLEMENT BEFORE INVESTING IN ANY SECURITIES.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR PASSED UPON THE ADEQUACY OR ACCURACY OF THIS PROSPECTUS. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The date of this prospectus is _____, 2010

Table of Contents

	<u>Page</u>
Prospectus Summary	1
Risk Factors	3
Forward-Looking Statements	3
Ratio of Earnings to Fixed Charges	4
Use of Proceeds	4
Description of Capital Stock	5
Description of the Depositary Shares	13
Description of the Warrants	16
Description of the Debt Securities	19
Description of the Units	30
Plan of Distribution	31
Legal Matters	34
Experts	34
Where You Can Find More Information	34
Information Incorporated by Reference	35

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the United States Securities and Exchange Commission, or the SEC, using a “shelf” registration process. Under this shelf process, we may, from time to time, sell any combination of the securities described in this prospectus in one or more offerings up to a total amount of \$75,000,000.

This prospectus provides you with a general description of the securities we may offer. Each time we sell securities, we will provide a prospectus supplement that will contain specific information about the terms of that offering. The prospectus supplement may also add to, update or change information contained in the prospectus and, accordingly, to the extent inconsistent, information in this prospectus is superseded by the information in the prospectus supplement.

The prospectus supplement to be attached to the front of this prospectus may describe, as applicable: the terms of the securities offered; the initial public offering price; the price paid for the securities; net proceeds; and the other specific terms related to the offering of the securities.

You should only rely on the information contained or incorporated by reference in this prospectus and any prospectus supplement or issuer free writing prospectus relating to a particular offering. No person has been authorized to give any information or make any representations in connection with this offering other than those contained or incorporated by reference in this prospectus, any accompanying prospectus supplement and any related issuer free writing prospectus in connection with the offering described herein and therein, and, if given or made, such information or representations must not be relied upon as having been authorized by us. Neither this prospectus nor any prospectus supplement nor any related issuer free writing prospectus shall constitute an offer to sell or a solicitation of an offer to buy offered securities in any jurisdiction in which it is unlawful for such person to make such an offering or solicitation. This prospectus does not contain all of the information included in the registration statement. For a more complete understanding of the offering of the securities, you should refer to the registration statement, including its exhibits.

You should read the entire prospectus and any prospectus supplement and any related issuer free writing prospectus, as well as the documents incorporated by reference into this prospectus or any prospectus supplement or any related issuer free writing prospectus, before making an investment decision. Neither the delivery of this prospectus or any prospectus supplement or any issuer free writing prospectus nor any sale made hereunder shall under any circumstances imply that the information contained or incorporated by reference herein or in any prospectus supplement or issuer free writing prospectus is correct as of any date subsequent to the date hereof or of such prospectus supplement or issuer free writing prospectus, as applicable. You should assume that the information appearing in this prospectus, any prospectus supplement or any document incorporated by reference is accurate only as of the date of the applicable documents, regardless of the time of delivery of this prospectus or any sale of securities. Our business, financial condition, results of operations and prospects may have changed since that date.

PROSPECTUS SUMMARY

This summary description about us and our business highlights selected information contained elsewhere in this prospectus or incorporated in this prospectus by reference. This summary does not contain all of the information you should consider before buying securities in this offering. You should carefully read this entire prospectus and any applicable prospectus supplement, including each of the documents incorporated herein or therein by reference, before making an investment decision. As used in this prospectus, “we,” “us,” “Mattson,” “our” and “the Company” refer to Mattson Technology, Inc., a Delaware corporation.

Mattson Technology, Inc.

Overview

Mattson Technology, Inc. designs, manufactures, and markets semiconductor wafer processing equipment used in the fabrication of integrated circuits (ICs or chips). Mattson is a leading supplier of plasma and rapid thermal processing (RTP) equipment to the global semiconductor industry, and operates in three primary product sectors: Dry Strip, RTP & Etch. Its dry strip and RTP equipment utilizes innovative technology to deliver advanced processing performance and productivity gains to semiconductor manufacturers worldwide for the fabrication of current and next generation devices. Recently, Mattson has expanded into the adjacent etch market with innovative products targeting high volume dielectric etch applications, and has also been expanding into the millisecond annealing market, a sector of the RTP market.

Our customer base is diversified geographically and includes foundries, memory and logic device manufacturers. We have a global sales and support organization focused on developing strong, long-term customer relationships to build customer loyalty. We have design and manufacturing centers in the United States, Canada, Germany and Korea. Our customer support organization is headquartered in Fremont, California, with sales and support teams located in China, France, Germany, Japan, Korea, Singapore, Taiwan and the United States.

Corporate Information

Mattson Technology, Inc. was incorporated in California in 1988 and reincorporated in Delaware in 1997. Our principal executive office is located at 47131 Bayside Parkway, Fremont, CA 94538. Our telephone number is (510) 657-5900. Additional information about Mattson is available on our Website at <http://www.mattson.com>. Our website, and the information contained therein, is not a part of this prospectus.

The Securities We May Offer

We may offer up to \$75,000,000 of common stock, preferred stock, depositary shares, warrants, debt securities and units in one or more offerings and in any combination. This prospectus provides you with a general description of the securities we may offer. A prospectus supplement, which we will provide each time we offer securities, will describe the specific amounts, prices and terms of the securities we determine to offer.

Common Stock

We may offer shares of our common stock, par value \$0.001 per share, either alone or underlying other registered securities convertible or exercisable into our common stock. Each holder of our common stock is entitled to one vote for each share on all matters to be voted upon by the stockholders, and there are no cumulative rights. Subject to any preferential rights of any outstanding preferred stock, holders of our common stock are entitled to receive ratably the dividends, if any, as may be declared from time to time by the board of directors out of funds legally available therefor. If there is a liquidation, dissolution or winding up of our company, holders of our common stock would be entitled to share in our assets remaining after the payment of liabilities and any preferential rights of any outstanding preferred stock.

Preferred Stock and Depositary Shares

Under the terms of our amended and restated certificate of incorporation, our board of directors is authorized to issue shares of preferred stock in one or more series without stockholder approval. Our board of directors has the discretion to determine the rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, of each series of preferred stock.

We may also issue fractional shares of preferred stock that will be represented by depositary shares and depositary receipts.

Each series of preferred stock, depositary shares or depositary receipts, if issued, will be more fully described in the particular prospectus supplement that will accompany this prospectus, including redemption provisions, rights in the event of our liquidation, dissolution or winding up, voting rights and rights to convert into common stock. We do not have any shares of our preferred stock, depositary shares or depositary receipts presently outstanding.

Warrants

We may issue warrants for the purchase of common stock, preferred stock or debt securities. We may issue warrants independently or together with other securities.

Debt Securities

We may offer secured or unsecured obligations in the form of one or more series of senior or subordinated debt. The senior debt securities and the subordinated debt securities are together referred to in this prospectus as the “debt securities.” The subordinated debt securities generally will be entitled to payment only after payment of our senior debt. Senior debt generally includes all debt for money borrowed by us, except debt that is stated in the instrument governing the terms of that debt to be not senior to, or to have the same rank in right of payment as, or to be expressly junior to, the subordinated debt securities. We may issue debt securities that are convertible into shares of our common stock.

The senior and subordinated debt securities will be issued under separate indentures between us and a trustee. We have summarized the general features of the debt securities to be governed by the indentures. These indentures have been filed as exhibits to the registration statement of which this prospectus forms a part. We encourage you to read these indentures. Instructions on how you can get copies of these documents are provided under the heading “Where You Can Find More Information.”

Units

We may issue units comprised of one or more of the other classes of securities issued by us as described in this prospectus in any combination. Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit.

RISK FACTORS

An investment in our securities involves a high degree of risk. The prospectus supplement applicable to each offering of our securities will contain a discussion of the risks applicable to an investment in our securities. Prior to making a decision about investing in our securities, you should carefully consider the specific factors discussed under the heading “Risk Factors” in the applicable prospectus supplement, together with all of the other information contained or incorporated by reference in the prospectus supplement or appearing or incorporated by reference in this prospectus. You should also consider the risks, uncertainties and assumptions discussed under “Risk Factors” in our Annual Report on Form 10-K for the fiscal year ended December 31, 2009 and any updates described in our Quarterly Reports on Form 10-Q, all of which are incorporated herein by reference, and may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future and any prospectus supplement related to a particular offering. The risks and uncertainties we have described are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our operations.

FORWARD-LOOKING STATEMENTS

This prospectus, each prospectus supplement and the information incorporated by reference in this prospectus and each prospectus supplement contain certain statements that constitute “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. Forward-looking statements typically are identified by use of terms such as “anticipates,” “expects,” “intends,” “plans,” “seeks,” “estimates,” “believes,” and similar expressions, although some forward-looking statements are expressed differently. Those statements appear in this prospectus, any accompanying prospectus supplement and the documents incorporated herein and therein by reference, particularly in the sections entitled “Prospectus Summary,” “Risk Factors,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and “Business,” and include statements regarding the intent, belief or current expectations of the Company and management that are subject to known and unknown risks, uncertainties and assumptions.

This prospectus, any prospectus supplement and the information incorporated by reference in this prospectus and any prospectus supplement also contain statements that are based on management’s current expectations and beliefs, including estimates and projections about our industry. Our forward-looking statements may include statements that relate to our future revenue, gross margin, earnings, cash flow and cash position, customer demand, market share, competitiveness, margins, product development plans and levels of research and development (R&D) activity, customer acceptance of our new product lines, market demand for semiconductor devices, outsourcing plans and operating expenses, tax expenses, the expected effects, cost and timing of restructurings, excess inventory reserves, the level of our vendor commitments as compared to our requirements, cost-saving initiatives, and consolidation of operations and facilities, economic conditions in general and in our industry, and the sufficiency of our financial resources to support future operations and capital expenditures. These statements are not guarantees of future performance and are subject to numerous risks, uncertainties, and assumptions that are difficult to predict.

Our actual results could differ materially from those anticipated by these forward-looking statements. Except as required by applicable law, including the securities laws of the United States and the rules and regulations of the SEC, we do not plan to publicly update or revise any forward-looking statements contained herein after we distribute this prospectus, whether as a result of any new information, future events or otherwise.

RATIO OF EARNINGS TO FIXED CHARGES

The following table sets forth our ratio of earnings to fixed charges on a historical basis for each of the periods indicated. You should read these ratios in connection with our consolidated financial statements, including the notes to those statements, incorporated by reference in this prospectus.

	Fiscal Year Ended December 31,					Three Months Ended
	2005	2006	2007	2008	2009	March 28, 2010
Ratio of earnings to fixed charges (1).....	8x	16x	34x	—	—	—

The ratio of earnings to fixed charges has been computed on a consolidated basis. “Earnings” consists of net income before income taxes plus fixed charges. “Fixed charges” consist of interest expense plus the portion of interest expense under operating leases deemed by us to be representative of the interest factor.

(1) Due to our losses in the years ended December 31, 2008, December 31, 2009, and the three months ended March 28, 2010, the ratio coverage was less than 1:1. Additional earnings of \$89.8 million, \$75.1 million, \$10.5 million for the years ended December 31, 2008, December 31, 2009, and the three months ended March 28, 2010, respectively, would have been required to achieve a ratio of 1:1.

As of the date of this prospectus, we have no shares of preferred stock outstanding, and consequently, our ratio of earnings to preferred share dividends and ratio of earnings to fixed charges would be identical.

USE OF PROCEEDS

Unless otherwise indicated in the prospectus supplement, we will use the net proceeds from the sale of securities offered by this prospectus for general corporate purposes, which may include working capital, capital expenditures, other corporate expenses and acquisitions of complementary products, technologies or businesses. The timing and amount of our actual expenditures will be based on many factors, including cash flows from operations and the anticipated growth of our business. As a result, unless otherwise indicated in the prospectus supplement, our management will have broad discretion to allocate the net proceeds of the offerings. Pending their ultimate use, we intend to invest the net proceeds in short-term, investment-grade, interest-bearing instruments.

DESCRIPTION OF CAPITAL STOCK

The following information describes our common stock and preferred stock, as well as certain provisions of our amended and restated certificate of incorporation, third amended and restated bylaws and stockholder rights plan. This description is only a summary. You should also refer to our amended and restated certificate of incorporation, third amended and restated bylaws and stockholder rights plan, which have been filed with the SEC as exhibits to our registration statement, of which this prospectus forms a part.

General

Our authorized capital stock consists of 120,000,000 shares of common stock with a \$0.001 par value per share, and 2,000,000 shares of preferred stock with a \$0.001 par value per share, of which 360,000 shares of preferred stock are designated Series A Preferred Stock. Our board of directors may establish the rights and preferences of the preferred stock from time to time. As of April 26, 2010, there were 50,029,526 shares of common stock issued and outstanding, held of record by 195 stockholders, although we believe that there may be a significantly larger number of beneficial owners of our common stock. We derived the number of stockholders by reviewing the listing of outstanding common stock recorded by our transfer agent as of April 26, 2010.

The following is a summary of the material provisions of the common stock and preferred stock provided for in our amended and restated certificate of incorporation and third amended and restated bylaws. For additional detail about our capital stock, please refer to our certificate of incorporation and bylaws, each as amended.

Common Stock

Each holder of our common stock is entitled to one vote for each share on all matters to be voted upon by the stockholders and there are no cumulative rights. Subject to any preferential rights of any outstanding preferred stock, holders of our common stock are entitled to receive ratably the dividends, if any, as may be declared from time to time by the board of directors out of funds legally available therefor. If there is a liquidation, dissolution or winding up of our company, holders of our common stock would be entitled to share in our assets remaining after the payment of liabilities and any preferential rights of any outstanding preferred stock.

Holders of our common stock have no preemptive or conversion rights or other subscription rights, and there are no redemption or sinking fund provisions applicable to the common stock. The outstanding shares of common stock are fully paid and non-assessable. The rights, preferences and privileges of the holders of our common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future.

Our common stock is listed on the Nasdaq Global Select Market under the symbol "MTSN." The transfer agent and registrar for the common stock is BNY Mellon Investor Services. Its address is P.O. Box 358010, Pittsburgh, PA 15252, and its telephone number at this location is (877) 289-7092.

Preferred stock

The following description of preferred stock and the description of the terms of any particular series of preferred stock that we choose to issue hereunder and that will be set forth in the related prospectus supplement are not complete. These descriptions are qualified in their entirety by reference to our amended and restated certificate of incorporation and the certificate of designation relating to any series of preferred stock. The rights, preferences, privileges and restrictions of the preferred stock of each series will be fixed by the certificate of designation relating to that series. The prospectus supplement also will contain a description of certain United States federal income tax consequences relating to the purchase and ownership of the series of preferred stock that is described in the prospectus supplement.

Under the terms of our amended and restated certificate of incorporation, our board of directors is authorized to issue shares of preferred stock in one or more series without stockholder approval. Our board of directors has the discretion to determine the rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, of each series of preferred stock. There are no restrictions presently on the repurchase or redemption of any shares of our preferred stock.

The prospectus supplement for a series of preferred stock will specify:

- the maximum number of shares;
- the designation of the shares;
- the annual dividend rate, if any, whether the dividend rate is fixed or variable, the date or dates on which dividends will accrue, the dividend payment dates, and whether dividends will be cumulative;
- the price and the terms and conditions for redemption, if any, including redemption at our option or at the option of the holders, including the time period for redemption, and any accumulated dividends or premiums;
- the liquidation preference, if any, and any accumulated dividends upon the liquidation, dissolution or winding up of our affairs;
- any sinking fund or similar provision, and, if so, the terms and provisions relating to the purpose and operation of the fund;
- the terms and conditions, if any, for conversion or exchange of shares of any other class or classes of our capital stock or any series of any other class or classes, or of any other series of the same class, or any other securities or assets, including the price or the rate of conversion or exchange and the method, if any, of adjustment;
- the voting rights; and
- any or all other preferences and relative, participating, optional or other special rights, privileges or qualifications, limitations or restrictions.

The issuance of preferred stock will affect, and may adversely affect, the rights of holders of common stock. It is not possible to state the actual effect of the issuance of any shares of preferred stock on the rights of holders of common stock until our board of directors determines the specific rights attached to that preferred stock. The effects of issuing preferred stock could include one or more of the following:

- restricting dividends on the common stock;
- diluting the voting power of the common stock;
- impairing the liquidation rights of the common stock; or
- delaying or preventing changes in control or management of our company.

We have no present plans to issue any shares of preferred stock nor are any shares of our preferred stock presently outstanding. Preferred stock will be fully paid and nonassessable upon issuance.

Effect of Certain Provisions of our Amended and Restated Certificate of Incorporation and Third Amended and Restated Bylaws, the Delaware Anti-Takeover Statute and our Stockholder Rights Plan

Some provisions of Delaware law and our amended and restated certificate of incorporation and third amended and restated bylaws contain provisions that could make the following transactions more difficult:

- acquisition of us by means of a tender offer;
- acquisition of us by means of a proxy contest or otherwise; or
- removal of our incumbent officers and directors.

Those provisions, summarized below, are expected to discourage coercive takeover practices and inadequate takeover bids and to promote stability in our management. These provisions are also designed to encourage persons seeking to acquire control of us to first negotiate with our board of directors.

Amended and Restated Certificate of Incorporation and Third Amended and Restated Bylaws

Our amended and restated certificate of incorporation and our third amended and restated bylaws provide for the following:

- *Undesignated Preferred Stock.* The ability to authorize undesignated preferred stock makes it possible for our board of directors to issue one or more series of preferred stock with voting or other rights or preferences that could impede the success of any attempt to change control of Mattson. These and other provisions may have the effect of deferring hostile takeovers or delaying changes in control or management of our company.
- *Stockholder Meetings.* Our charter documents provide that a special meeting of stockholders may be called only by our board of directors, its chairman, our president or our chief executive officer.
- *Requirements for Advance Notification of Stockholder Nominations and Proposals.* Our bylaws establish advance notice procedures with regard to all stockholder proposals to be brought before meetings of our stockholders, including proposals relating to nomination of candidates for election as directors, the removal of directors and amendments to our certificate of incorporation or bylaws. These procedures provide that notice of such stockholder proposals must be timely given in writing to the secretary of Mattson prior to the meeting. To be timely, notice must be received by at our principal executive offices not less than 120 calendar days prior in advance of the anniversary date that the our proxy statement was released to stockholders in connection with the previous year's annual meeting of stockholders. The notice must contain information specified in the bylaws.
- *Board Classification.* Our board of directors is divided into three classes. The directors in each class will serve for a three-year term, one class being elected each year by our stockholders. This system of electing and removing directors may tend to discourage a third party from making a tender offer or otherwise attempting to obtain control of us, because it generally makes it more difficult for stockholders to replace a majority of the directors.
- *Limits on Ability of Stockholders to Act by Written Consent.* We have provided in our bylaws that our stockholders may not act by written consent. This limit on the ability of our stockholders to act by written consent may lengthen the amount of time required to take stockholder actions. As a result, a holder controlling a majority of our capital stock would not be able to amend our bylaws or remove directors without holding a meeting of our stockholders called in accordance with our bylaws.

- *Amendment of Certificate of Incorporation and Bylaws.* The amendment of the above provisions of our charter documents requires approval by holders of at least two-thirds of the voting power of our then outstanding voting stock.

Delaware Anti-Takeover Statute

We are subject to Section 203 of the General Corporation Law of the State of Delaware, which prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years after the date that such stockholder became an interested stockholder, with the following exceptions:

- before such date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction began, excluding for purposes of determining the voting stock outstanding (but not the outstanding voting stock owned by the interested stockholder) those shares owned (i) by persons who are directors and also officers and (ii) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or after such date, the business combination is approved by the board of directors and authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least 66 $\frac{2}{3}$ % of the outstanding voting stock that is not owned by the interested stockholder.

In general, Section 203 defines business combination to include the following:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, lease, exchange, mortgage, transfer, pledge or other disposition of 10% or more of either the assets or outstanding stock of the corporation involving the interested stockholder;
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits by or through the corporation.

In general, Section 203 defines interested stockholder as an entity or person who, together with affiliates and associates, beneficially owns, or within three years prior to the determination of interested stockholder status did own, 15% or more of the outstanding voting stock of the corporation.

Stockholder Rights Plan

The Following is a summary of certain principal terms of the Rights Agreement (the “Rights Agreement”), dated July 28, 2005 between Mattson Technology, Inc. and Mellon Investor Services, LLC (the “Rights Agent”), only and is qualified in its entirety by reference to the Rights Agreement, as amended by Amendment No. 1 thereto, dated January 22, 2007 and Amendment No. 2 thereto, dated July 14, 2008. The Rights Agreement may be further amended from time to time. A copy of the Rights Agreement was filed with the Securities and Exchange Commission on the Company’s current report on Form 8-A12G filed on August 22, 2005. A copy of Amendment No. 1 to the Rights Agreement was

filed with the Securities and Exchange Commission on the Company's annual report on Form 10-K filed on March 2, 2007. A copy of Amendment No. 2 to the Rights Agreement was filed with the Securities and Exchange Commission on the Company's current report on Form 8-K filed on July 14, 2008.

Our board of directors adopted the Rights Agreement intending to protect stockholders from unfair takeover practices. On July 28, 2005, in connection with the Rights Agreement, our board of directors declared a dividend distribution of one Preferred Stock Purchase Right (each a "Right" and collectively the "Rights") for each outstanding share of Common Stock of the Company. The distribution was paid as of August 15, 2005 (the "Record Date") to stockholders of record on that date. Each Right entitles the registered holder to purchase from the Company one one-thousandth of a share of the Company's Series A Preferred Stock, \$0.01 par value (the "Preferred Stock"), at a price of \$55.00 (the "Purchase Price").

Until the earlier to occur of (i) the tenth day following the first date of public announcement by the Company or by a person or group of affiliated or associated persons ("Acquiring Person"), other than (x) the Company or any subsidiary of the Company, including, without limitation, in its fiduciary capacity, any employee benefit plan or employee stock plan of the Company or any subsidiary of the Company or any individual, firm, corporation, partnership, trust or other entity (a "Person") organized, appointed, established or holding Common Stock for or pursuant to the terms of any such plan or any Person funding other employee benefits for employees of the Company or any Subsidiary of the Company ("Exempt Person") or (y) a "Grandfathered Person" (as such term is defined in the Rights Agreement) subject to certain conditions as set forth in the Rights Agreement, that such an Acquiring Person has acquired, or obtained the right to acquire, without approval of the board of directors or good faith determination of the board of directors that such a person or group of affiliated or associated persons has inadvertently become an Acquiring Person, beneficial ownership of securities of the Company representing 15% or more of the outstanding Common Stock of the Company (other than solely as a result of a reduction in the outstanding shares of the Common Stock of the Company) or such earlier date as a majority of the board of directors shall become aware of such acquisition of the Common Stock (the "Stock Acquisition Date") (or, if the tenth day after the Stock Acquisition Date occurs before the Record Date, the close of business on the Record Date) or (ii) the tenth business day (subject to extension by the Board prior to the time a person becomes an Acquiring Person) following the commencement of, or public announcement of an intention to commence, a tender or exchange offer by any person (other than by an Exempt Person), the consummation of which would result in the beneficial ownership of 15% or more of the outstanding Common Stock by such person, together with its affiliates and associates (the earlier of such dates being called the "Distribution Date"), the Rights will be evidenced, with respect to all shares of Common Stock that are issued after the Record Date prior to the Distribution Date (or earlier redemption or expiration of the Rights), by certificates representing such shares of Common Stock together with the Summary of Rights attached thereto.

The Rights Agreement provides that, until the Distribution Date (or earlier redemption or expiration of the Rights), the Rights will be represented by and transferred with, and only with, the Common Stock. Until the Distribution Date (or earlier redemption or expiration of the Rights), new certificates issued for Common Stock (including, without limitation, certificates issued upon transfer or exchange of Common Stock) after the Record Date, will contain a legend incorporating the Rights Agreement by reference. Until the Distribution Date (or earlier redemption or expiration of the Rights), the surrender for transfer of any of the Company's Common Stock certificates, with or without the aforesaid legend or the Summary of Rights attached thereto, will also constitute the transfer of the Rights associated with the Common Stock represented by such certificate. As soon as practicable following the Distribution Date, separate certificates evidencing the Rights ("Right Certificates") will be mailed to holders of record of the Company's Common Stock as of the close of business on the Distribution Date, and such separate certificates alone will evidence the Rights from and after the Distribution Date.

The Rights are not exercisable until the Distribution Date. The Rights will expire upon the earlier of (i) ten years after the date of issuance, or July 27, 2015 or (ii) redemption or exchange by the Company.

The Purchase Price payable, and the number of shares of Preferred Stock or other securities or property issuable, upon exercise of the Rights are subject to adjustment from time to time to prevent dilution (i) in the event of a stock dividend on, or a subdivision, combination or reclassification of the Preferred Stock, (ii) upon the grant to holders

of the Preferred Stock of certain rights or warrants to subscribe for Preferred Stock or convertible securities at less than the current market price of the Preferred Stock or (iii) upon the distribution to holders of the Preferred Stock of evidences of indebtedness or assets (excluding dividends payable in Preferred Stock) or of subscription rights or warrants (other than those referred to above). The number of Rights associated with each share of Common Stock is also subject to adjustment in the event of a stock split of the Common Stock or a stock dividend on the Common Stock payable in Common Stock or subdivisions, consolidations or combinations of the Common Stock occurring, in any such case, prior to the Distribution Date.

The Preferred Stock purchasable upon exercise of the Rights will be nonredeemable and junior to any other series of preferred stock the Company may issue (unless otherwise provided in the terms of such other series). Each share of Preferred Stock will have a preferential cumulative quarterly dividend in an amount equal to the greater of (a) \$1,375.00 or (b) 1,000 times the dividend declared on each share of Common Stock. In the event of liquidation, the holders of Preferred Stock will receive a preferred liquidation payment equal to the greater of (a) \$55,000.00 per share, plus accrued dividends to the date of distribution whether or not earned or declared, or (b) an amount per share equal to 1,000 times the aggregate payment to be distributed per share of Common Stock. Each share of Preferred Stock will have 1,000 votes, voting together with the shares of Common Stock. In the event of any merger, consolidation or other transaction in which shares of Common Stock are exchanged for or changed into other securities, cash and/or other property, each share of Preferred Stock will be entitled to receive 1,000 times the amount and type of consideration received per share of Common Stock. The rights of the Preferred Stock as to dividends, liquidation and voting, and in the event of mergers and consolidations, are protected by customary anti-dilution provisions. Fractional shares (in integral multiples of one one-thousandth) of Preferred Stock will be issuable; however, the Company may elect to distribute depositary receipts in lieu of such fractional shares. In lieu of fractional shares other than fractions that are multiples of one one-thousandth of a share, an adjustment in cash will be made based on the market price of the Preferred Stock on the last trading date prior to the date of exercise. Because of the nature of the Preferred Stock's dividend, liquidation and voting rights, the value one one-thousandth of a share of Preferred Stock purchasable upon exercise of each Right should approximate the value of one share of Common Stock.

In the event (i) any person becomes an Acquiring Person or (ii) any Acquiring Person or any of its affiliates or associates, directly or indirectly, (1) consolidates with or merges into the Company or any of its subsidiaries or otherwise combines with the Company or any of its subsidiaries in a transaction in which the Company or such subsidiary is the continuing or surviving corporation of such merger or combination and the Common Stock of the Company remains outstanding and no shares thereof shall be changed into or exchanged for stock or other securities of any other person or of the Company or cash or any other property, (2) transfers, in on one or more transactions, any assets to the Company or any of its subsidiaries in exchange for capital stock of the Company or any of its subsidiaries or for securities exercisable for or convertible into capital stock of the Company or any of its subsidiaries or otherwise obtains from the Company or any of its subsidiaries, with or without consideration, any capital stock of the Company or any of its subsidiaries or securities exercisable for or convertible into capital stock of the Company or any of its subsidiaries (other than as part of a pro rata offer or distribution to all holders of such stock), (3) sells, purchases, leases, exchanges, mortgages, pledges, transfers or otherwise disposes to, from or with the Company or any of its subsidiaries, as the case may be, assets on terms and conditions less favorable to the Company or such subsidiary than the Company or such subsidiary would be able to obtain in arm's-length negotiation with an unaffiliated third party, (4) receives any compensation from the Company or any of its subsidiaries for services other than compensation for employment as a regular or part-time employee, or fees for serving as a director at rates in accordance with the Company's (or its subsidiary's) past practice, (5) receives the benefit (except proportionately as a stockholder) of any loans, advances, guarantees, pledges or other financial assistance or tax credit or advantage, or (6) engages in any transaction with the Company (or any of its subsidiaries) involving the sale, license, transfer or grant of any right in, or disclosure of, any patents, copyrights, trade secrets, trademarks or know-how (or any other intellectual or industrial property rights recognized under any country's intellectual property rights laws) which the Company (including its subsidiaries) owns or has the right to use on terms and conditions not approved by the board of directors of the Company, or (iii) while there is an Acquiring Person, there shall occur any reclassification of securities (including any reverse stock split), any recapitalization of the Company, or any merger or consolidation of the Company with any of its subsidiaries or any other transaction or transactions involving the Company or any of its subsidiaries (whether or not involving the Acquiring Person) which have the effect of increasing by more than 1% the proportionate share of the outstanding shares of any class of equity securities of the

Company or any of its subsidiaries which is directly or indirectly owned or controlled by the Acquiring Person (such events are collectively referred to herein as the “Flip-In Events”), then, and in each such case, each holder of record of a Right, other than the Acquiring Person, will thereafter have the right to receive, upon payment of the then current Purchase Price, in lieu of one one-thousandth of a share of Preferred Stock per outstanding Right, that number of shares of Common Stock having a market value at the time of the transaction equal to the Purchase Price (as adjusted to the Purchase Price in effect immediately prior to the Flip-In Event multiplied by the number of one one-thousandths of a share of Preferred Stock for which a Right was exercisable immediately prior to such Flip-In Event) divided by one-half the average of the daily closing prices per share of the Common Stock for the thirty consecutive trading days (“Current Market Price”) on the date of such Flip-In Event. Notwithstanding the foregoing, Rights held by the Acquiring Person or any Associate or Affiliate thereof or certain transferees will be null and void and no longer be transferable.

The Company may at its option substitute for a share of Common Stock issuable upon the exercise of Rights in accordance with this paragraph such number or fractions of shares of Preferred Stock having an aggregate current market value equal to the Current Market Price of a share of Common Stock. In the event that insufficient shares of Common Stock are available to permit the exercise in full of the Rights in accordance with the foregoing paragraph, the board of directors shall, to the extent permitted by applicable law and any material agreements then in effect to which the Company is a party, (A) determine the excess (such excess, the “Spread”) of (1) the value of the shares of Common Stock issuable upon the exercise of a Right in accordance with this paragraph (the “Current Value”) over (2) the Purchase Price, and (B) with respect to each Right (other than Rights which have become void pursuant to the foregoing paragraph), make adequate provision to substitute for the shares of Common Stock issuable in accordance with this paragraph upon exercise of the Right and payment of the Purchase Price, (1) cash, (2) a reduction in such Purchase Price, (3) shares of Preferred Stock or other equity securities of the Company (including, without limitation, shares or fractions of shares of preferred stock which, by virtue of having dividend, voting and liquidation rights substantially comparable to those of the shares of Common Stock, are deemed in good faith by the board of directors to have substantially the same value as the shares of Common Stock, (4) debt securities of the Company, (5) other assets, or (6) any combination of the foregoing, having a value which, when added to the value of the shares of Common Stock actually issued upon exercise of such Right, shall have an aggregate value equal to the Current Value (less the amount of any reduction in such Purchase Price); provided, however, that if the Company shall not make adequate provision to deliver value pursuant to clause (B) above within thirty (30) days following the Flip-In Event, then the Company shall be obligated to deliver, to the extent permitted by applicable law and any material agreements then in effect to which the Company is a party, upon the surrender for exercise of a Right and without requiring payment of such Purchase Price, shares of Common Stock (to the extent available), and then, if necessary, such number or fractions of shares of Preferred Stock (to the extent available) and then, if necessary, cash, which shares and/or cash have an aggregate value equal to the Spread. Rights are not exercisable following the occurrence of the events set forth in the foregoing paragraph until the expiration of the period during which the Rights may be redeemed as described below.

Unless the Rights are earlier redeemed, in the event that following the first occurrence of a Flip-In Event, the Company were to be acquired in a merger or other business combination in which any shares of the Company’s Common Stock are exchanged or converted for other securities or assets (other than a merger or other business combination in which the voting power represented by the Company’s securities outstanding immediately prior thereto continues to represent all of the voting power represented by the securities of the Company thereafter and the holders of such securities have not changed as a result of such transaction), or 50% or more of the assets or earning power of the Company and its subsidiaries (taken as a whole) were to be sold or transferred in one or a series of related transactions (such transactions are collectively referred to herein as the “Flip-Over Events”), the Rights Agreement provides that proper provision shall be made so that each holder of record of a Right (other than an Acquiring Person, or affiliates or associates thereof) will from and after such date have the right to receive, upon payment of the then current Purchase Price, that number of shares of common stock of the acquiring company having a market value at the time of such transaction equal to the Purchase Price divided by one-half the Current Market Price of such common stock.

No fractional shares of Common Stock will be issued upon exercise of the Rights and, in lieu thereof, a payment in cash will be made to the holder of such Rights equal to the same fraction of the current market value of a share of Common Stock.

At any time until the occurrence of a Flip-In Event, the Board may redeem the Rights in whole, but not in part, at a price of \$0.001 per Right. Immediately upon the action of the board of directors of the Company authorizing redemption of the Rights, the right to exercise the Rights will terminate, and the only right of the holders of Rights will be to receive the Redemption Price without any interest thereon.

At any time after the occurrence of a Flip-In Event and prior to the earlier of a Flip-Over Event or such time as any Person (other than an Exempt Person), together with all affiliates and associates, becomes the Beneficial Owner of more than 50% of the Common Stock outstanding, the board of directors of the Company may, at its option, exchange all or any portion of the outstanding Rights (other than Rights held by any Acquiring Person which have become void) for shares of Common Stock on a pro rata basis, at an exchange ratio of one share of Common Stock or one one-thousandth of a share of Preferred Stock (or of a share of a class or series of the Company's Preferred Stock having equivalent rights, preferences and privileges) per Right. Immediately upon the ordering of such exchange and without any notice, the right to exercise such Rights shall terminate and the only right thereafter of a holder of such Rights shall be to receive shares of Common Stock or Common Stock Equivalents pursuant to the exchange. In the event there are insufficient shares of Common Stock issued but not outstanding or authorized but unissued to permit any exchange of Rights, the Company shall take all actions necessary to authorize additional shares.

Until the Rights become nonredeemable the Company may, except with respect to the redemption price of the Rights, amend the Rights Agreement in any manner. After the Rights become nonredeemable, the Company may amend the Rights Agreement to cure any ambiguity, to correct or supplement any provision which may be defective or inconsistent with any other provisions, to shorten or lengthen any time period under the Rights Agreement, or to arrange or supplement the provisions hereunder in any manner which the Company may deem necessary or desirable, provided that no such amendment may adversely affect the interests of the holders of the Rights (other than the Acquiring Person or its affiliates or associates) or cause the Rights to again be redeemable or the Agreement to again be freely amendable.

Until a Right is exercised, the holder, as such, will have no rights as a stockholder of the Company, including, without limitation, the right to vote or to receive dividends.

The Rights have certain anti-takeover effects. Under certain circumstances the Rights could cause substantial dilution to a person or group who attempts to acquire the Company on terms not approved by the Company's board of directors. The Rights Agreement may make an unsolicited takeover more difficult or less likely to occur or may prevent a takeover, even though such takeover could offer our stockholders the opportunity to sell their stock at a price above the prevailing market rate and could be favored by a majority of our stockholders.

DESCRIPTION OF THE DEPOSITARY SHARES

General

At our option, we may elect to offer fractional shares of preferred stock, rather than full shares of preferred stock. If we do elect to offer fractional shares of preferred stock, we will issue receipts for depositary shares and each of these depositary shares will represent a fraction of a share of a particular series of preferred stock, as specified in the applicable prospectus supplement. Each owner of a depositary share will be entitled, in proportion to the applicable fractional interest in shares of preferred stock underlying that depositary share, to all rights and preferences of the preferred stock underlying that depositary share. These rights may include dividend, voting, redemption and liquidation rights.

The shares of preferred stock underlying the depositary shares will be deposited with a bank or trust company selected by us to act as depositary, under a deposit agreement by and among us, the depositary and the holders of the depositary receipts. The depositary will be the transfer agent, registrar and dividend disbursing agent for the depositary shares.

The depositary shares will be evidenced by depositary receipts issued pursuant to the depositary agreement. Holders of depositary receipts agree to be bound by the deposit agreement, which requires holders to take certain actions such as filing proof of residence and paying certain charges.

The summary of terms of the depositary shares contained in this prospectus is not complete, and is subject to modification in any prospectus supplement for any issuance of depositary shares. You should refer to the forms of the deposit agreement, our certificate of incorporation and the certificate of designation that are, or will be, filed with the SEC for the applicable series of preferred stock.

Dividends

The depositary will distribute cash dividends or other cash distributions, if any, received in respect of the series of preferred stock underlying the depositary shares to the record holders of depositary receipts in proportion to the number of depositary shares owned by those holders on the relevant record date. The relevant record date for depositary shares will be the same date as the record date for the preferred stock.

In the event of a distribution other than in cash, the depositary will distribute property received by it to the record holders of depositary receipts that are entitled to receive the distribution, unless the depositary determines that it is not feasible to make the distribution. If this occurs, the depositary, with our approval, may adopt another method for the distribution, including selling the property and distributing the net proceeds to the holders.

Liquidation preference

If a series of preferred stock underlying the depositary shares has a liquidation preference, in the event of our voluntary or involuntary liquidation, dissolution or winding up, holders of depositary shares will be entitled to receive the fraction of the liquidation preference accorded each share of the applicable series of preferred stock, as set forth in the applicable prospectus supplement.

Redemption

If a series of preferred stock underlying the depositary shares is subject to redemption, the depositary shares will be redeemed from the proceeds received by the depositary resulting from the redemption, in whole or in part, of the preferred stock held by the depositary. Whenever we redeem any preferred stock held by the depositary, the depositary will redeem, as of the same redemption date, the number of depositary shares representing the preferred stock so

redeemed. The depositary will mail the notice of redemption to the record holders of the depositary receipts promptly upon receiving the notice from us and not fewer than 20 or more than 60 days, unless otherwise provided in the applicable prospectus supplement, prior to the date fixed for redemption of the preferred stock.

Voting

Upon receipt of notice of any meeting at which the holders of preferred stock are entitled to vote, the depositary will mail the information contained in the notice of meeting to the record holders of the depositary receipts underlying the preferred stock. Each record holder of those depositary receipts on the record date will be entitled to instruct the depositary as to the exercise of the voting rights pertaining to the amount of preferred stock underlying that holder's depositary shares. The record date for the depositary will be the same date as the record date for the preferred stock. The depositary will, to the extent practicable, vote the preferred stock underlying the depositary shares in accordance with these instructions. We will agree to take all action that may be deemed necessary by the depositary in order to enable the depositary to vote the preferred stock in accordance with these instructions. The depositary will not vote the preferred stock to the extent that it does not receive specific instructions from the holders of depositary receipts.

Withdrawal of preferred stock

Owners of depositary shares will be entitled to receive upon surrender of depositary receipts at the principal office of the depositary and payment of any unpaid amount due to the depositary, the number of whole shares of preferred stock underlying their depositary shares.

Partial shares of preferred stock will not be issued. Holders of preferred stock will not be entitled to deposit the shares under the deposit agreement or to receive depositary receipts evidencing depositary shares for the preferred stock.

Amendment and termination of the deposit agreement

The form of depositary receipt evidencing the depositary shares and any provision of the deposit agreement may be amended by agreement between the depositary and us. However, any amendment which materially and adversely alters the rights of the holders of depositary shares, other than fee changes, will not be effective unless the amendment has been approved by at least a majority of the outstanding depositary shares. The deposit agreement may be terminated by the depositary or us only if:

- all outstanding depositary shares have been redeemed; or
- there has been a final distribution of the preferred stock in connection with our dissolution and such distribution has been made to all the holders of depositary shares.

Charges of depositary

We will pay all transfer and other taxes and governmental charges arising solely from the existence of the depositary arrangement. We will also pay charges of the depositary in connection with:

- the initial deposit of the preferred stock;
- the initial issuance of the depositary shares;
- any redemption of the preferred stock; and
- all withdrawals of preferred stock by owners of depositary shares.

Holders of depositary receipts will pay transfer, income and other taxes and governmental charges and other specified charges as provided in the deposit agreement for their accounts. If these charges have not been paid, the depositary may:

- refuse to transfer depositary shares;
- withhold dividends and distributions; and
- sell the depositary shares evidenced by the depositary receipt.

Miscellaneous

The depositary will forward to the holders of depositary receipts all reports and communications we deliver to the depositary that we are required to furnish to the holders of the preferred stock. In addition, the depositary will make available for inspection by holders of depositary receipts at the principal office of the depositary, and at such other places as it may from time to time deem advisable, any reports and communications we deliver to the depositary as the holder of preferred stock.

Neither the depositary nor we will be liable if either the depositary or we are prevented or delayed by law or any circumstance beyond the control of either the depositary or us in performing our respective obligations under the deposit agreement. Our obligations and the depositary's obligations will be limited to the performance in good faith of our or the depositary's respective duties under the deposit agreement. Neither the depositary nor we will be obligated to prosecute or defend any legal proceeding in respect of any depositary shares or preferred stock unless satisfactory indemnity is furnished. The depositary and we may rely on:

- written advice of counsel or accountants;
- information provided by holders of depositary receipts or other persons believed in good faith to be competent to give such information; and
- documents believed to be genuine and to have been signed or presented by the proper party or parties.

Resignation and removal of depositary

The depositary may resign at any time by delivering a notice to us. We may remove the depositary at any time. Any such resignation or removal will take effect upon the appointment of a successor depositary and its acceptance of such appointment. The successor depositary must be appointed within 60 days after delivery of the notice for resignation or removal. The successor depositary must be a bank and trust company having its principal office in the United States of America and having a combined capital and surplus of at least \$50,000,000.

Federal income tax consequences

Owners of the depositary shares will be treated for U.S. federal income tax purposes as if they were owners of the preferred stock underlying the depositary shares. As a result, owners will be entitled to take into account for U.S. federal income tax purposes and deductions to which they would be entitled if they were holders of such preferred stock. No gain or loss will be recognized for U.S. federal income tax purposes upon the withdrawal of preferred stock in exchange for depositary shares. The tax basis of each share of preferred stock to an exchanging owner of depositary shares will, upon such exchange, be the same as the aggregate tax basis of the depositary shares exchanged. The holding period for preferred stock in the hands of an exchanging owner of depositary shares will include the period during which such person owned such depositary shares.

DESCRIPTION OF THE WARRANTS

General

We may issue warrants for the purchase of our debt securities, preferred stock or common stock, or any combination thereof. Warrants may be issued independently or together with our debt securities, preferred stock or common stock and may be attached to or separate from any offered securities. Each series of warrants will be issued under a separate warrant agreement to be entered into between us and a bank or trust company, as warrant agent. The warrant agent will act solely as our agent in connection with the warrants. The warrant agent will not have any obligation or relationship of agency or trust for or with any holders or beneficial owners of warrants. This summary of certain provisions of the warrants is not complete. For the terms of a particular series of warrants, you should refer to the prospectus supplement for that series of warrants and the warrant agreement for that particular series.

Debt warrants

The prospectus supplement relating to a particular issue of warrants to purchase debt securities will describe the terms of the debt warrants, including the following:

- the title of the debt warrants;
- the offering price for the debt warrants, if any;
- the aggregate number of the debt warrants;
- the designation and terms of the debt securities, including any conversion rights, purchasable upon exercise of the debt warrants;
- if applicable, the date from and after which the debt warrants and any debt securities issued with them will be separately transferable;
- the principal amount of debt securities that may be purchased upon exercise of a debt warrant and the exercise price for the warrants, which may be payable in cash, securities or other property;
- the dates on which the right to exercise the debt warrants will commence and expire;
- if applicable, the minimum or maximum amount of the debt warrants that may be exercised at any one time;
- whether the debt warrants represented by the debt warrant certificates or debt securities that may be issued upon exercise of the debt warrants will be issued in registered or bearer form;
- information with respect to book-entry procedures, if any;
- the currency or currency units in which the offering price, if any, and the exercise price are payable;
- if applicable, a discussion of material U.S. federal income tax considerations;
- the antidilution provisions of the debt warrants, if any;
- the redemption or call provisions, if any, applicable to the debt warrants;

- any provisions with respect to the holder's right to require us to repurchase the debt warrants upon a change in control or similar event; and
- any additional terms of the debt warrants, including procedures, and limitations relating to the exchange, exercise and settlement of the debt warrants.

Debt warrant certificates will be exchangeable for new debt warrant certificates of different denominations. Debt warrants may be exercised at the corporate trust office of the warrant agent or any other office indicated in the prospectus supplement. Prior to the exercise of their debt warrants, holders of debt warrants will not have any of the rights of holders of the debt securities purchasable upon exercise and will not be entitled to payment of principal or any premium, if any, or interest on the debt securities purchasable upon exercise.

Equity warrants

The prospectus supplement relating to a particular series of warrants to purchase our common stock or preferred stock will describe the terms of the warrants, including the following:

- the title of the warrants;
- the offering price for the warrants, if any;
- the aggregate number of warrants;
- the designation and terms of the common stock or preferred stock that may be purchased upon exercise of the warrants;
- if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each security;
- if applicable, the date from and after which the warrants and any securities issued with the warrants will be separately transferable;
- the number of shares of common stock or preferred stock that may be purchased upon exercise of a warrant and the exercise price for the warrants;
- the dates on which the right to exercise the warrants shall commence and expire;
- if applicable, the minimum or maximum amount of the warrants that may be exercised at any one time;
- the currency or currency units in which the offering price, if any, and the exercise price are payable;
- if applicable, a discussion of material U.S. federal income tax considerations;
- the antidilution provisions of the warrants, if any;
- the redemption or call provisions, if any, applicable to the warrants;
- any provisions with respect to the holder's right to require us to repurchase the warrants upon a change in control or similar event; and

- any additional terms of the warrants, including procedures, and limitations relating to the exchange, exercise and settlement of the warrants.

Holders of equity warrants will not be entitled:

- to vote, consent or receive dividends;
- receive notice as stockholders with respect to any meeting of stockholders for the election of our directors or any other matter; or
- exercise any rights as stockholders of us.

DESCRIPTION OF THE DEBT SECURITIES

The debt securities may be either secured or unsecured and will either be our senior debt securities or our subordinated debt securities. The debt securities will be issued under one or more separate indentures between us and a trustee to be specified in an accompanying prospectus supplement. Senior debt securities will be issued under a senior indenture and subordinated debt securities will be issued under a subordinated indenture. Together, the senior indenture and the subordinated indenture are called indentures in this description. This prospectus, together with the applicable prospectus supplement, will describe the terms of a particular series of debt securities.

The following is a summary of selected provisions and definitions of the indentures and debt securities to which any prospectus supplement may relate. The summary of selected provisions of the indentures and the debt securities appearing below is not complete and is subject to, and qualified entirely by reference to, all of the provisions of the applicable indenture and certificates evidencing the applicable debt securities. For additional information, you should look at the applicable indenture and the certificate evidencing the applicable debt security that is filed as an exhibit to the registration statement that includes the prospectus. In this description of the debt securities, the words “we,” “us,” “our” or “the Company” refer only to Mattson Technology, Inc. and not to any of our subsidiaries, unless we expressly state or the context otherwise requires.

The following description sets forth selected general terms and provisions of the applicable indenture and debt securities to which any prospectus supplement may relate. Other specific terms of the applicable indenture and debt securities will be described in the applicable prospectus supplement. If any particular terms of the indenture or debt securities described in a prospectus supplement differ from any of the terms described below, then the terms described below will be deemed to have been superseded by that prospectus supplement.

General

Debt securities may be issued in separate series without limitation as to aggregate principal amount. We may specify a maximum aggregate principal amount for the debt securities of any series.

We are not limited as to the amount of debt securities we may issue under the indentures. Unless otherwise provided in a prospectus supplement, a series of debt securities may be reopened to issue additional debt securities of such series.

The prospectus supplement relating to a particular series of debt securities will set forth:

- whether the debt securities are senior or subordinated;
- the offering price;
- the title;
- any limit on the aggregate principal amount;
- the person who shall be entitled to receive interest, if other than the record holder on the record date;
- the date or dates the principal will be payable;
- the interest rate or rates, which may be fixed or variable, if any, the date from which interest will accrue, the interest payment dates and the regular record dates, or the method for calculating the dates and rates;
- the place where payments may be made;

- any mandatory or optional redemption provisions or sinking fund provisions and any applicable redemption or purchase prices associated with these provisions;
- if issued other than in denominations of U.S. \$1,000 or any multiple of U.S. \$1,000, the denominations in which the debt securities shall be issuable;
- if applicable, the method for determining how the principal, premium, if any, or interest will be calculated by reference to an index or formula;
- if other than U.S. currency, the currency or currency units in which principal, premium, if any, or interest will be payable and whether we or a holder may elect payment to be made in a different currency;
- the portion of the principal amount that will be payable upon acceleration of maturity, if other than the entire principal amount;
- if the principal amount payable at stated maturity will not be determinable as of any date prior to stated maturity, the amount or method for determining the amount which will be deemed to be the principal amount;
- if applicable, whether the debt securities shall be subject to the defeasance provisions described below under “Satisfaction and discharge; defeasance” or such other defeasance provisions specified in the applicable prospectus supplement for the debt securities;
- any conversion or exchange provisions;
- whether the debt securities will be issuable in the form of a global security;
- any subordination provisions applicable to the subordinated debt securities if different from those described below under “Subordinated debt securities;”
- any paying agents, authenticating agents, security registrars or other agents for the debt securities, if other than the trustee;
- any provisions relating to any security provided for the debt securities, including any provisions regarding the circumstances under which collateral may be released or substituted;
- any deletions of, or changes or additions to, the events of default, acceleration provisions or covenants;
- any provisions relating to guaranties for the securities and any circumstances under which there may be additional obligors; and
- any other specific terms of such debt securities.

Unless otherwise specified in the prospectus supplement, the debt securities will be registered debt securities. Debt securities may be sold at a substantial discount below their stated principal amount, bearing no interest or interest at a rate which at time of issuance is below market rates. The U.S. federal income tax considerations applicable to debt securities sold at a discount will be described in the applicable prospectus supplement.

Exchange and transfer

Debt securities may be transferred or exchanged at the office of the security registrar or at the office of any transfer agent designated by us.

We will not impose a service charge for any transfer or exchange, but we may require holders to pay any tax or other governmental charges associated with any transfer or exchange.

In the event of any partial redemption of debt securities of any series, we will not be required to:

- issue, register the transfer of, or exchange, any debt security of that series during a period beginning at the opening of business 15 days before the day of mailing of a notice of redemption and ending at the close of business on the day of the mailing; or
- register the transfer of or exchange any debt security of that series selected for redemption, in whole or in part, except the unredeemed portion being redeemed in part.

We will appoint the trustee as the initial security registrar. Any transfer agent, in addition to the security registrar initially designated by us, will be named in the prospectus supplement. We may designate additional transfer agents or change transfer agents or change the office of the transfer agent. However, we will be required to maintain a transfer agent in each place of payment for the debt securities of each series.

Global securities

The debt securities of any series may be represented, in whole or in part, by one or more global securities. Each global security will:

- be registered in the name of a depositary, or its nominee, that we will identify in a prospectus supplement;
- be deposited with the depositary or nominee or custodian; and
- bear any required legends.

No global security may be exchanged in whole or in part for debt securities registered in the name of any person other than the depositary or any nominee unless:

- the depositary has notified us that it is unwilling or unable to continue as depositary or has ceased to be qualified to act as depositary;
- an event of default is continuing with respect to the debt securities of the applicable series; or
- any other circumstance described in a prospectus supplement has occurred permitting or requiring the issuance of any such security.

As long as the depositary, or its nominee, is the registered owner of a global security, the depositary or nominee will be considered the sole owner and holder of the debt securities represented by the global security for all purposes under the indentures. Except in the above limited circumstances, owners of beneficial interests in a global security will not be:

- entitled to have the debt securities registered in their names;
- entitled to physical delivery of certificated debt securities; or
- considered to be holders of those debt securities under the indenture.

Payments on a global security will be made to the depositary or its nominee as the holder of the global security. Some jurisdictions have laws that require that certain purchasers of securities take physical delivery of such securities in definitive form. These laws may impair the ability to transfer beneficial interests in a global security.

Institutions that have accounts with the depositary or its nominee are referred to as “participants.” Ownership of beneficial interests in a global security will be limited to participants and to persons that may hold beneficial interests through participants. The depositary will credit, on its book-entry registration and transfer system, the respective principal amounts of debt securities represented by the global security to the accounts of its participants.

Ownership of beneficial interests in a global security will be shown on and effected through records maintained by the depositary, with respect to participants’ interests, or any participant, with respect to interests of persons held by participants on their behalf.

Payments, transfers and exchanges relating to beneficial interests in a global security will be subject to policies and procedures of the depositary. The depositary policies and procedures may change from time to time. Neither any trustee nor we will have any responsibility or liability for the depositary’s or any participant’s records with respect to beneficial interests in a global security.

Payment and paying agents

Unless otherwise indicated in a prospectus supplement, the provisions described in this paragraph will apply to the debt securities. Payment of interest on a debt security on any interest payment date will be made to the person in whose name the debt security is registered at the close of business on the regular record date. Payment on debt securities of a particular series will be payable at the office of a paying agent or paying agents designated by us. However, at our option, we may pay interest by mailing a check to the record holder. The trustee will be designated as our initial paying agent.

We may also name any other paying agents in a prospectus supplement. We may designate additional paying agents, change paying agents or change the office of any paying agent. However, we will be required to maintain a paying agent in each place of payment for the debt securities of a particular series.

All moneys paid by us to a paying agent for payment on any debt security that remain unclaimed for a period ending the earlier of:

- 10 business days prior to the date the money would be turned over to the applicable state; or
- at the end of two years after such payment was due,

will be repaid to us thereafter. The holder may look only to us for such payment.

No protection in the event of a change of control

Unless otherwise indicated in a prospectus supplement with respect to a particular series of debt securities, the debt securities will not contain any provisions that may afford holders of the debt securities protection in the event we have a change in control or in the event of a highly leveraged transaction, whether or not such transaction results in a change in control.

Covenants

Unless otherwise indicated in a prospectus supplement with respect to a particular series of debt securities, the debt securities will not contain any financial or restrictive covenants.

Consolidation, merger and sale of assets

Unless we indicate otherwise in a prospectus supplement with respect to a particular series of debt securities, we may not consolidate with or merge into any other person (other than a subsidiary of us), in a transaction in which we are not the surviving entity, or convey, transfer or lease our properties and assets substantially as an entirety to, any person (other than a subsidiary of us), unless:

- the successor entity, if any, is a U.S. corporation, limited liability company, partnership, trust or other business entity;
- the successor entity assumes our obligations on the debt securities and under the indentures;
- immediately after giving effect to the transaction, no default or event of default shall have occurred and be continuing; and
- certain other conditions specified in the indenture are met.

Events of default

Unless we indicate otherwise in a prospectus supplement, the following will be events of default for any series of debt securities under the indentures:

- (1) we fail to pay principal of or any premium on any debt security of that series when due;
- (2) we fail to pay any interest on any debt security of that series for 30 days after it becomes due;
- (3) we fail to deposit any sinking fund payment when due;
- (4) we fail to perform any other covenant in the indenture and such failure continues for 90 days after we are given the notice required in the indentures; and
- (5) certain events involving our bankruptcy, insolvency or reorganization.

Additional or different events of default applicable to a series of debt securities may be described in a prospectus supplement. An event of default of one series of debt securities is not necessarily an event of default for any other series of debt securities.

The trustee may withhold notice to the holders of any default, except defaults in the payment of principal, premium, if any, interest, any sinking fund installment on, or with respect to any conversion right of, the debt securities of such series. However, the trustee must consider it to be in the interest of the holders of the debt securities of such series to withhold this notice.

Unless we indicate otherwise in a prospectus supplement, if an event of default, other than an event of default described in clause (5) above, shall occur and be continuing with respect to any series of debt securities, either the trustee or the holders of at least 25 percent in aggregate principal amount of the outstanding securities of that series may declare the principal amount and premium, if any, of the debt securities of that series, or if any debt securities of that series are original issue discount securities, such other amount as may be specified in the applicable prospectus supplement, in each case together with accrued and unpaid interest, if any, thereon, to be due and payable immediately.

Unless we indicate otherwise in a prospectus supplement, if an event of default described in clause (5) above shall occur, the principal amount and premium, if any, of all the debt securities of that series, or if any debt securities of that series are original issue discount securities, such other amount as may be specified in the applicable prospectus

supplement, in each case together with accrued and unpaid interest, if any, thereon, will automatically become immediately due and payable. Any payment by us on the subordinated debt securities following any such acceleration will be subject to the subordination provisions described below under “Subordinated debt securities.”

Notwithstanding the foregoing, each indenture will provide that we may, at our option, elect that the sole remedy for an event of default relating to our failure to comply with our obligations described under the section entitled “Reports” below or our failure to comply with the requirements of Section 314(a)(1) of the Trust Indenture Act will for the first 180 days after the occurrence of such an event of default consist exclusively of the right to receive additional interest on the relevant series of debt securities at an annual rate equal to (i) 0.25% of the principal amount of such series of debt securities for the first 90 days after the occurrence of such event of default and (ii) 0.50% of the principal amount of such series of debt securities from the 91st day to, and including, the 180th day after the occurrence of such event of default, which we call “additional interest.” If we so elect, the additional interest will accrue on all outstanding debt securities from and including the date on which such event of default first occurs until such violation is cured or waived and shall be payable on each relevant interest payment date to holders of record on the regular record date immediately preceding the interest payment date. On the 181st day after such event of default (if such violation is not cured or waived prior to such 181st day), the debt securities will be subject to acceleration as provided above. In the event we do not elect to pay additional interest upon any such event of default in accordance with this paragraph, the debt securities will be subject to acceleration as provided above.

In order to elect to pay the additional interest as the sole remedy during the first 180 days after the occurrence of any event of default relating to the failure to comply with the reporting obligations in accordance with the preceding paragraph, we must notify all holders of debt securities and the trustee and paying agent of such election prior to the close of business on the first business day following the date on which such event of default occurs. Upon our failure to timely give such notice or pay the additional interest, the debt securities will be immediately subject to acceleration as provided above.

After acceleration, the holders of a majority in aggregate principal amount of the outstanding securities of that series may, under certain circumstances, rescind and annul such acceleration if all events of default, other than the non-payment of accelerated principal, or other specified amounts or interest, have been cured or waived.

Other than the duty to act with the required care during an event of default, the trustee will not be obligated to exercise any of its rights or powers at the request of the holders unless the holders shall have offered to the trustee reasonable indemnity. Generally, the holders of a majority in aggregate principal amount of the outstanding debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee or exercising any trust or power conferred on the trustee.

A holder of debt securities of any series will not have any right to institute any proceeding under the indentures, or for the appointment of a receiver or a trustee, or for any other remedy under the indentures, unless:

- (1) the holder has previously given to the trustee written notice of a continuing event of default with respect to the debt securities of that series;
- (2) the holders of at least 25 percent in aggregate principal amount of the outstanding debt securities of that series have made a written request and have offered reasonable indemnity to the trustee to institute the proceeding; and
- (3) the trustee has failed to institute the proceeding and has not received direction inconsistent with the original request from the holders of a majority in aggregate principal amount of the outstanding debt securities of that series within 60 days after the original request.

Holders may, however, sue to enforce the payment of principal, premium or interest on any debt security on or after the due date or to enforce the right, if any, to convert any debt security (if the debt security is convertible) without following the procedures listed in (1) through (3) above.

We will furnish the trustee an annual statement from our officers as to whether or not we are in default in the performance of the conditions and covenants under the indenture and, if so, specifying all known defaults.

Modification and waiver

Unless we indicate otherwise in a prospectus supplement, the applicable trustee and we may make modifications and amendments to an indenture with the consent of the holders of a majority in aggregate principal amount of the outstanding securities of each series affected by the modification or amendment.

We may also make modifications and amendments to the indentures for the benefit of holders without their consent, for certain purposes including, but not limited to:

- providing for our successor to assume the covenants under the indenture;
- adding covenants or events of default;
- making certain changes to facilitate the issuance of the securities;
- securing the securities;
- providing for a successor trustee or additional trustees;
- conforming the indenture to the description of the debt securities set forth in this prospectus or the accompanying prospectus;
- curing any ambiguities or inconsistencies;
- providing for guaranties of, or additional obligors on, the securities;
- permitting or facilitating the defeasance and discharge of the securities; and
- other changes specified in the indenture.

However, neither the trustee nor we may make any modification or amendment without the consent of the holder of each outstanding security of that series affected by the modification or amendment if such modification or amendment would:

- change the stated maturity of any debt security;
- reduce the principal, premium, if any, or interest on any debt security or any amount payable upon redemption or repurchase, whether at our option or the option of any holder, or reduce the amount of any sinking fund payments;
- reduce the principal of an original issue discount security or any other debt security payable on acceleration of maturity;
- change the place of payment or the currency in which any debt security is payable;

- impair the right to enforce any payment after the stated maturity or redemption date;
- if subordinated debt securities, modify the subordination provisions in a materially adverse manner to the holders;
- adversely affect the right to convert any debt security if the debt security is a convertible debt security; or
- change the provisions in the indenture that relate to modifying or amending the indenture.

Satisfaction and discharge; defeasance

We may be discharged from our obligations on the debt securities, subject to limited exceptions, of any series that have matured or will mature or be redeemed within one year if we deposit enough money with the trustee to pay all the principal, interest and any premium due to the stated maturity date or redemption date of the debt securities.

Each indenture contains a provision that permits us to elect either or both of the following:

- we may elect to be discharged from all of our obligations, subject to limited exceptions, with respect to any series of debt securities then outstanding. If we make this election, the holders of the debt securities of the series will not be entitled to the benefits of the indenture, except for the rights of holders to receive payments on debt securities or the registration of transfer and exchange of debt securities and replacement of lost, stolen or mutilated debt securities.
- we may elect to be released from our obligations under some or all of any financial or restrictive covenants applicable to the series of debt securities to which the election relates and from the consequences of an event of default resulting from a breach of those covenants.

To make either of the above elections, we must irrevocably deposit in trust with the trustee enough money to pay in full the principal, interest and premium on the debt securities. This amount may be made in cash and/or U.S. government obligations or, in the case of debt securities denominated in a currency other than U.S. dollars, cash in the currency in which such series of securities is denominated and/or foreign government obligations. As a condition to either of the above elections, for debt securities denominated in U.S. dollars we must deliver to the trustee an opinion of counsel that the holders of the debt securities will not recognize income, gain or loss for U.S. federal income tax purposes as a result of the action.

With respect to debt securities of any series that are denominated in a currency other than United States dollars, “foreign government obligations” means:

- direct obligations of the government that issued or caused to be issued the currency in which such securities are denominated and for the payment of which obligations its full faith and credit is pledged, or, with respect to debt securities of any series which are denominated in Euros, direct obligations of certain members of the European Union for the payment of which obligations the full faith and credit of such members is pledged, which in each case are not callable or redeemable at the option of the issuer thereof; or
- obligations of a person controlled or supervised by or acting as an agency or instrumentality of a government described in the bullet above the timely payment of which is unconditionally guaranteed as a full faith and credit obligation by such government, which are not callable or redeemable at the option of the issuer thereof.

Reports

The indentures provide that any reports or documents that we file with the SEC pursuant to Section 13 or 15(d) of the Exchange Act will be filed with the trustee within 15 days after the same is filed with the SEC. Documents filed by

us with the SEC via the EDGAR system will be deemed filed with the trustee as of the time such documents are filed with the SEC.

Notices

Notices to holders will be given by mail to the addresses of the holders in the security register.

Governing law

The indentures and the debt securities will be governed by, and construed under, the laws of the State of New York.

No personal liability of directors, officers, employees and stockholders

No incorporator, stockholder, employee, agent, officer, director or subsidiary of ours will have any liability for any obligations of ours, or because of the creation of any indebtedness under the debt securities, the indentures or supplemental indentures. The indentures provide that all such liability is expressly waived and released as a condition of, and as a consideration for, the execution of such indentures and the issuance of the debt securities.

Regarding the trustee

The indentures limit the right of the trustee, should it become our creditor, to obtain payment of claims or secure its claims.

The trustee will be permitted to engage in certain other transactions with us. However, if the trustee acquires any conflicting interest, and there is a default under the debt securities of any series for which it is trustee, the trustee must eliminate the conflict or resign.

Subordinated debt securities

The following provisions will be applicable with respect to each series of subordinated debt securities, unless otherwise stated in the prospectus supplement relating to that series of subordinated debt securities.

The indebtedness evidenced by the subordinated debt securities of any series is subordinated, to the extent provided in the subordinated indenture and the applicable prospectus supplement, to the prior payment in full, in cash or other payment satisfactory to the holders of senior debt, of all senior debt, including any senior debt securities.

Upon any distribution of our assets upon any dissolution, winding up, liquidation or reorganization, whether voluntary or involuntary, marshalling of assets, assignment for the benefit of creditors, or in bankruptcy, insolvency, receivership or other similar proceedings, payments on the subordinated debt securities will be subordinated in right of payment to the prior payment in full in cash or other payment satisfactory to holders of senior debt of all senior debt.

In the event of any acceleration of the subordinated debt securities of any series because of an event of default with respect to the subordinated debt securities of that series, holders of any senior debt would be entitled to payment in full in cash or other payment satisfactory to holders of senior debt of all senior debt before the holders of subordinated debt securities are entitled to receive any payment or distribution.

In addition, the subordinated debt securities will be structurally subordinated to all indebtedness and other liabilities of our subsidiaries, including trade payables and lease obligations. This occurs because our right to receive any assets of our subsidiaries upon their liquidation or reorganization, and your right to participate in those assets, will be effectively subordinated to the claims of that subsidiary's creditors, including trade creditors, except to the extent that we are recognized as a creditor of such subsidiary. If we are recognized as a creditor of that subsidiary, our claims would still be subordinate to any security interest in the assets of the subsidiary and any indebtedness of the subsidiary senior to us.

We are required to promptly notify holders of senior debt or their representatives under the subordinated indenture if payment of the subordinated debt securities is accelerated because of an event of default.

Under the subordinated indenture, we may also not make payment on the subordinated debt securities if:

- a default in our obligations to pay principal, premium, if any, interest or other amounts on our senior debt occurs and the default continues beyond any applicable grace period, which we refer to as a payment default; or
- any other default occurs and is continuing with respect to designated senior debt that permits holders of designated senior debt to accelerate its maturity, which we refer to as a non-payment default, and the trustee receives a payment blockage notice from us or some other person permitted to give the notice under the subordinated indenture.

We will resume payments on the subordinated debt securities:

- in case of a payment default, when the default is cured or waived or ceases to exist, and
- in case of a nonpayment default, the earlier of when the default is cured or waived or ceases to exist or 179 days after the receipt of the payment blockage notice.

No new payment blockage period may commence on the basis of a nonpayment default unless 365 days have elapsed from the effectiveness of the immediately prior payment blockage notice. No nonpayment default that existed or was continuing on the date of delivery of any payment blockage notice to the trustee shall be the basis for a subsequent payment blockage notice.

As a result of these subordination provisions, in the event of our bankruptcy, dissolution or reorganization, holders of senior debt may receive more, ratably, and holders of the subordinated debt securities may receive less, ratably, than our other creditors. The subordination provisions will not prevent the occurrence of any event of default under the subordinated indenture.

The subordination provisions will not apply to payments from money or government obligations held in trust by the trustee for the payment of principal, interest and premium, if any, on subordinated debt securities pursuant to the provisions described under the section entitled “Satisfaction and discharge; defeasance,” if the subordination provisions were not violated at the time the money or government obligations were deposited into trust.

If the trustee or any holder receives any payment that should not have been made to them in contravention of subordination provisions before all senior debt is paid in full in cash or other payment satisfactory to holders of senior debt, then such payment will be held in trust for the holders of senior debt.

Senior debt securities will constitute senior debt under the subordinated indenture.

Additional or different subordination provisions may be described in a prospectus supplement relating to a particular series of debt securities.

Definitions

“Designated senior debt” means our obligations under any particular senior debt in which the instrument creating or evidencing the same or the assumption or guarantee thereof, or related agreements or documents to which we are a party, expressly provides that such indebtedness shall be designated senior debt for purposes of the subordinated indenture. The instrument, agreement or other document evidencing any designated senior debt may place limitations and conditions on the right of such senior debt to exercise the rights of designated senior debt.

“Indebtedness” means the following, whether absolute or contingent, secured or unsecured, due or to become due, outstanding on the date of the indenture for such series of securities or thereafter created, incurred or assumed:

- our indebtedness evidenced by a credit or loan agreement, note, bond, debenture or other written obligation;
- all of our obligations for money borrowed;
- all of our obligations evidenced by a note or similar instrument given in connection with the acquisition of any businesses, properties or assets of any kind,
- our obligations:
 - as lessee under leases required to be capitalized on the balance sheet of the lessee under generally accepted accounting principles, or
 - as lessee under leases for facilities, capital equipment or related assets, whether or not capitalized, entered into or leased for financing purposes;
- all of our obligations under interest rate and currency swaps, caps, floors, collars, hedge agreements, forward contracts or similar agreements or arrangements;
- all of our obligations with respect to letters of credit, bankers’ acceptances and similar facilities, including reimbursement obligations with respect to the foregoing;
- all of our obligations issued or assumed as the deferred purchase price of property or services, but excluding trade accounts payable and accrued liabilities arising in the ordinary course of business;
- all obligations of the type referred to in the above clauses of another person, the payment of which, in either case, we have assumed or guaranteed, for which we are responsible or liable, directly or indirectly, jointly or severally, as obligor, guarantor or otherwise, or which are secured by a lien on our property; and
- renewals, extensions, modifications, replacements, restatements and refundings of, or any indebtedness or obligation issued in exchange for, any such indebtedness or obligation described in the above clauses of this definition.

“Senior debt” means the principal of, premium, if any, and interest, including all interest accruing subsequent to the commencement of any bankruptcy or similar proceeding, whether or not a claim for post-petition interest is allowable as a claim in any such proceeding, and rent payable on or in connection with, and all fees and other amounts payable in connection with, our indebtedness. However, senior debt shall not include:

- any debt or obligation if its terms or the terms of the instrument under which or pursuant to which it is issued expressly provide that it shall not be senior in right of payment to the subordinated debt securities or expressly provide that such indebtedness is on the same basis or “junior” to the subordinated debt securities; or
- debt to any of our subsidiaries, a majority of the voting stock of which is owned, directly or indirectly, by us.

“Subsidiary” means a corporation more than 50% of the outstanding voting stock of which is owned, directly or indirectly, by us or by one or more of our other subsidiaries or by a combination of us and our other subsidiaries. For purposes of this definition, “voting stock” means stock or other similar interests which ordinarily has or have voting power for the election of directors, or persons performing similar functions, whether at all times or only so long as no senior class of stock or other interests has or have such voting power by reason of any contingency.

DESCRIPTION OF THE UNITS

We may issue units comprised of one or more of the other classes of securities described in this prospectus in any combination. Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit. Thus, the holder of a unit will have the rights and obligations of a holder of each included security. The units may be issued under unit agreements to be entered into between us and a unit agent, as detailed in the prospectus supplement relating to the units being offered. The prospectus supplement will describe:

- the designation and terms of the units and of the securities comprising the units, including whether and under what circumstances the securities comprising the units may be held or transferred separately;
- a description of the terms of any unit agreement governing the units;
- a description of the provisions for the payment, settlement, transfer or exchange of the units;
- a discussion of material federal income tax considerations, if applicable; and
- whether the units if issued as a separate security will be issued in fully registered or global form.

The descriptions of the units in this prospectus and in any prospectus supplement are summaries of the material provisions of the applicable agreements. These descriptions do not restate those agreements in their entirety and may not contain all the information that you may find useful. We urge you to read the applicable agreements because they, and not the summaries, define your rights as holders of the units. For more information, please review the forms of the relevant agreements, which will be filed with the SEC promptly after the offering of units and will be available as described under the heading “Where You Can Find More Information.”

PLAN OF DISTRIBUTION

We may sell the securities offered through this prospectus (1) to or through underwriters or dealers, (2) directly to purchasers, including our affiliates, (3) through agents, or (4) through a combination of any of these methods. The securities may be distributed at a fixed price or prices, which may be changed, market prices prevailing at the time of sale, prices related to the prevailing market prices, or negotiated prices. The prospectus supplement will include the following information:

- the terms of the offering;
- the names of any underwriters or agents;
- the name or names of any managing underwriter or underwriters;
- the purchase price of the securities;
- the net proceeds from the sale of the securities;
- any delayed delivery arrangements;
- any underwriting discounts, commissions and other items constituting underwriters' compensation;
- any initial public offering price;
- any discounts or concessions allowed or reallocated or paid to dealers; and
- any commissions paid to agents.

Sale through underwriters or dealers

If underwriters are used in the sale, the underwriters will acquire the securities for their own account, including through underwriting, purchase, security lending or repurchase agreements with us. The underwriters may resell the securities from time to time in one or more transactions, including negotiated transactions. Underwriters may sell the securities in order to facilitate transactions in any of our other securities (described in this prospectus or otherwise), including other public or private transactions and short sales. Underwriters may offer securities to the public either through underwriting syndicates represented by one or more managing underwriters or directly by one or more firms acting as underwriters. Unless otherwise indicated in the prospectus supplement, the obligations of the underwriters to purchase the securities will be subject to certain conditions, and the underwriters will be obligated to purchase all the offered securities if they purchase any of them. The underwriters may change from time to time any initial public offering price and any discounts or concessions allowed or reallocated or paid to dealers. The prospectus supplement will include the names of the principal underwriters the respective amount of securities underwritten, the nature of the obligation of the underwriters to take the securities and the nature of any material relationship between an underwriter and us.

If dealers are used in the sale of securities offered through this prospectus, we will sell the securities to them as principals. They may then resell those securities to the public at varying prices determined by the dealers at the time of resale. The prospectus supplement will include the names of the dealers and the terms of the transaction.

Direct sales and sales through agents

We may sell the securities offered through this prospectus directly. In this case, no underwriters or agents would be involved. Such securities may also be sold through agents designated from time to time. The prospectus supplement will name any agent involved in the offer or sale of the offered securities and will describe any commissions payable to the agent by us. Unless otherwise indicated in the prospectus supplement, any agent will agree to use its reasonable best efforts to solicit purchases for the period of its appointment.

We may sell the securities directly to institutional investors or others who may be deemed to be underwriters within the meaning of the Securities Act with respect to any sale of those securities. The terms of any such sales will be described in the prospectus supplement.

Delayed delivery contracts

If the prospectus supplement indicates, we may authorize agents, underwriters or dealers to solicit offers from certain types of institutions to purchase securities at the public offering price under delayed delivery contracts. These contracts would provide for payment and delivery on a specified date in the future. The contracts would be subject only to those conditions described in the prospectus supplement. The applicable prospectus supplement will describe the commission payable for solicitation of those contracts.

Market making, stabilization and other transactions

Unless the applicable prospectus supplement states otherwise, each series of offered securities will be a new issue and will have no established trading market. We may elect to list any series of offered securities on an exchange. Any underwriters that we use in the sale of offered securities may make a market in such securities, but may discontinue such market making at any time without notice. Therefore, we cannot assure you that the securities will have a liquid trading market.

Any underwriter may also engage in stabilizing transactions, syndicate covering transactions and penalty bids in accordance with Rule 104 under the Securities Exchange Act of 1934, as amended. Stabilizing transactions involve bids to purchase the underlying security in the open market for the purpose of pegging, fixing or maintaining the price of the securities. Syndicate covering transactions involve purchases of the securities in the open market after the distribution has been completed in order to cover syndicate short positions.

Penalty bids permit the underwriters to reclaim a selling concession from a syndicate member when the securities originally sold by the syndicate member are purchased in a syndicate covering transaction to cover syndicate short positions. Stabilizing transactions, syndicate covering transactions and penalty bids may cause the price of the securities to be higher than it would be in the absence of the transactions. The underwriters may, if they commence these transactions, discontinue them at any time.

Derivative transactions and hedging

We, the underwriters or other agents may engage in derivative transactions involving the securities. These derivatives may consist of short sale transactions and other hedging activities. The underwriters or agents may acquire a long or short position in the securities, hold or resell securities acquired and purchase options or futures on the securities and other derivative instruments with returns linked to or related to changes in the price of the securities. In order to facilitate these derivative transactions, we may enter into security lending or repurchase agreements with the underwriters or agents. The underwriters or agents may effect the derivative transactions through sales of the securities to the public, including short sales, or by lending the securities in order to facilitate short sale transactions by others. The underwriters or agents may also use the securities purchased or borrowed from us or others (or, in the case of derivatives, securities received from us in settlement of those derivatives) to directly or indirectly settle sales of the securities or close out any related open borrowings of the securities.

Electronic auctions

We may also make sales through the Internet or through other electronic means. Since we may from time to time elect to offer securities directly to the public, with or without the involvement of agents, underwriters or dealers, utilizing the Internet or other forms of electronic bidding or ordering systems for the pricing and allocation of such securities, you should pay particular attention to the description of that system we will provide in a prospectus supplement.

Such electronic system may allow bidders to directly participate, through electronic access to an auction site, by submitting conditional offers to buy that are subject to acceptance by us, and which may directly affect the price or other terms and conditions at which such securities are sold. These bidding or ordering systems may present to each bidder, on a so-called “real-time” basis, relevant information to assist in making a bid, such as the clearing spread at which the offering would be sold, based on the bids submitted, and whether a bidder’s individual bids would be accepted, prorated or rejected. For example, in the case of a debt security, the clearing spread could be indicated as a number of “basis points” above an index treasury note. Of course, many pricing methods can and may also be used.

Upon completion of such an electronic auction process, securities will be allocated based on prices bid, terms of bid or other factors. The final offering price at which securities would be sold and the allocation of securities among bidders would be based in whole or in part on the results of the Internet or other electronic bidding process or auction.

General information

Agents, underwriters, and dealers may be entitled, under agreements entered into with us, to indemnification by us against certain liabilities, including liabilities under the Securities Act.

LEGAL MATTERS

The validity of the securities offered by this prospectus will be passed upon by Wilson Sonsini Goodrich & Rosati, Professional Corporation, Palo Alto, California.

EXPERTS

The financial statements and management's assessment of the effectiveness of internal control over financial reporting (which is included in Management's Report on Internal Control over Financial Reporting) incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2009 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and other reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at <http://www.sec.gov>. You may also read and copy any document we file at the SEC's Public Reference Room at 100 F Street, NE, Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the Public Reference Room. Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K, including any amendments to those reports, and other information that we file with or furnish to the SEC pursuant to Section 13(a) or 15(d) of the Exchange Act can also be accessed free of charge through the Internet. These filings will be available as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC.

We have filed with the SEC a registration statement under the Securities Act of 1933 relating to the offering of these securities. The registration statement, including the attached exhibits, contains additional relevant information about us and the securities. This prospectus does not contain all of the information set forth in the registration statement. You can obtain a copy of the registration statement, at prescribed rates, from the SEC at the address listed above. The registration statement and the documents referred to below under "Incorporation by Reference" are also available on our Website at <http://www.mattson.com>. We have not incorporated by reference into this prospectus the information on our website, and you should not consider it to be a part of this prospectus.

INFORMATION INCORPORATED BY REFERENCE

The SEC allows us to incorporate by reference into this prospectus certain information we file with it, which means that we can disclose important information by referring you to those documents. The information incorporated by reference is considered to be a part of this prospectus, and information that we file later with the SEC will automatically update and supersede information contained in this prospectus and any accompanying prospectus supplement. We incorporate by reference the documents listed below that we have previously filed with the SEC (excluding any portions of any Form 8-K that are not deemed “filed” pursuant to the General Instructions of Form 8-K):

- our Annual Report on Form 10-K for the fiscal year ended December 31, 2009, filed on March 5, 2010, including the information specifically incorporated by reference into our Annual Report on Form 10-K for the fiscal year ended December 31, 2009 from our Definitive Proxy Statement on Schedule 14A filed on April 9, 2010;
- our Quarterly Report on Form 10-Q for the quarter ended March 28, 2010, filed on April 30, 2010;
- our Current Reports on Form 8-K filed on January 29, 2010, June 8, 2010 and June 10, 2010; and
- the description of our common stock contained in our Registration Statement on Form 8-A as filed with the SEC on September 22, 1994 pursuant to Section 12(b) of the Exchange Act.

We also incorporate by reference into this prospectus additional documents that we may file with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the completion or termination of the offering, including all such documents we may file with the SEC after the date of the initial registration statement and prior to the effectiveness of the registration statement, but excluding any information deemed furnished and not filed with the SEC. Any statements contained in a previously filed document incorporated by reference into this prospectus is deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus, or in a subsequently filed document also incorporated by reference herein, modifies or supersedes that statement.

This prospectus may contain information that updates, modifies or is contrary to information in one or more of the documents incorporated by reference in this prospectus. You should rely only on the information incorporated by reference or provided in this prospectus. We have not authorized anyone else to provide you with different information. You should not assume that the information in this prospectus is accurate as of any date other than the date of this prospectus or the date of the documents incorporated by reference in this prospectus.

We will provide to each person, including any beneficial owner, to whom this prospectus is delivered, upon written or oral request, at no cost to the requester, a copy of any and all of the information that is incorporated by reference in this prospectus.

Requests for such documents should be directed to:

Mattson Technology, Inc.
Attn: Corporate Secretary
47131 Bayside Parkway
Fremont, California 94538
(510) 657-5900

You may also access the documents incorporated by reference in this prospectus through our Website at <http://www.mattson.com>. Except for the specific incorporated documents listed above, no information available on or

through our website shall be deemed to be incorporated in this prospectus or the registration statement of which it forms a part.

\$75,000,000

[MATTSON LOGO]

Common Stock

Preferred Stock

Depository Shares

Warrants

Debt Securities

Units

PROSPECTUS

, 2010

Part II

Information Not Required in the Prospectus

Item 14. Other Expenses of Issuance and Distribution

The following table sets forth the costs and expenses, other than underwriting discounts and commissions, payable by the registrant in connection with the sale of the securities being registered

Securities and Exchange Commission registration fee.....	\$	5,347.50
Nasdaq Global Select Market listing fee.....		*
Accounting fees and expenses.....		*
Legal fees and expenses.....		*
Printing and engraving.....		*
Transfer agent fees and expenses.....		*
Miscellaneous.....		*
Total.....	\$	*

- * To be provided by amendment or as an exhibit to a filing with the SEC under Section 13(a), 13(c) or 15(d) of the Securities Exchange Act of 1934, as amended.

Item 15. Indemnification of Directors and Officers

Section 145(a) of the Delaware General Corporation Law provides that a Delaware corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation) by reason of the fact that such person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation or enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding if he or she acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no cause to believe his or her conduct was unlawful.

Section 145(b) of the Delaware General Corporation Law provides that a Delaware corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that such person acted in any of the capacities set forth above, against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection with the defense or settlement of such action or suit if he or she acted under similar standards, except that no indemnification may be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the court in which such action or suit was brought shall determine that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to be indemnified for such expenses which the court shall deem proper.

Section 145 of the Delaware General Corporation Law further provides that: (i) to the extent that a former or present director or officer of a corporation has been successful in the defense of any action, suit or proceeding referred to in subsections (a) and (b) or in the defense of any claim, issue or matter therein, such person shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by him or her in connection therewith; (ii) indemnification provided for by Section 145 shall not be deemed exclusive of any other rights to which the indemnified party may be entitled; and (iii) the corporation may purchase and maintain insurance on behalf of any present or former director, officer, employee or agent of the corporation or any person who at the request of the corporation was serving in such capacity for another entity against any liability asserted against such person and incurred by him or her in any such

capacity or arising out of his or her status as such, whether or not the corporation would have the power to indemnify him or her against such liabilities under Section 145.

Article Eight of our amended and restated certificate of incorporation authorizes us to provide for the indemnification of directors to the fullest extent permissible under Delaware law.

Article Seven of our third amended and restated bylaws provides for the indemnification of officers, directors and other parties acting on our behalf to the fullest extent permissible under Delaware law.

We have entered into indemnification agreements with our directors, executive officers and others, in addition to indemnification provided for in our third amended and restated bylaws, and intend to enter into indemnification agreements with any new directors and executive officers in the future.

We have purchased and intend to maintain insurance on behalf of any person who is or was a director or officer against any loss arising from any claim asserted against him or her and incurred by him or her in any such capacity, subject to certain exclusions.

See also the undertakings set out in response to Item 17 herein.

Item 16. Exhibits

A list of exhibits filed herewith is contained in the exhibit index that immediately precedes such exhibits and is incorporated herein by reference.

Item 17. Undertakings

(a) The undersigned registrant hereby undertakes:

- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
 - (i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;
 - (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the SEC pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and
 - (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that paragraphs (a)(1)(i) and (a)(1)(ii) of this section do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the SEC by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

- (2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
- (4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:
 - (i) If the registrant is relying on Rule 430B,
 - (A) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
 - (B) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5) or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii) or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to the effective date; or
 - (ii) If the registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.
- (5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer and sell such securities to such purchaser:
 - (i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

- (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
 - (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
 - (iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.
- (b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- (c) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act of 1933 and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding), is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.
- (d) The undersigned registrant hereby undertakes that:
- (1) For purposes of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.
 - (2) For the purpose of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- (e) The undersigned registrant hereby undertakes to file an application for the purpose of determining the eligibility of the trustee to act under subsection (a) of Section 310 of the Trust Indenture Act in accordance with the rules and regulations prescribed by the SEC under Section 305(b)(2) of the Trust Indenture Act.

Signatures

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement on Form S-3 to be signed on its behalf by the undersigned, thereunto duly authorized, in Fremont, California, on July 21, 2010.

Mattson Technology, Inc.

By: /s/ DAVID DUTTON
David Dutton
President and Chief Executive Officer and Director

Power of Attorney

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints David Dutton and Andy Moring, and each of them acting individually, as his true and lawful attorneys-in-fact and agents, with full power of each to act alone, with full powers of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments to this registration statement on Form S-3 with all exhibits thereto and all documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, with full power of each to act alone, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully for all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or his or their substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ DAVID DUTTON</u> David Dutton	President, Chief Executive Officer and Director (Principal Executive Officer)	July 21, 2010
<u>/s/ ANDY MORING</u> Andy Moring	Chief Financial Officer and Executive Vice President — Finance (Principal Financial and Accounting Officer)	July 21, 2010
<u>/s/ KENNETH KANNAPPAN</u> Kenneth Kannappan	Chairman of the Board of Directors	July 21, 2010
<u>/s/ HANS-GEORG BETZ</u> Hans-Georg Betz	Director	July 21, 2010
<u>/s/ JOHN BOLGER</u> John Bolger	Director	July 21, 2010
<u>/s/ RICHARD E. DYCK</u> Richard E. Dyck	Director	July 21, 2010

Signature	Title	Date
/s/ SHIGERU NAKAYAMA Shigeru Nakayama	Director	July 21, 2010
/s/ KENNETH SMITH Kenneth Smith	Director	July 21, 2010

Exhibit Index

Exhibit Number	Exhibit Title
1.1	Form of Underwriting Agreement*
1.2	Form of Subscription Agreement
3.1(1)	Amended and Restated Certificate of Incorporation of Mattson Technology, Inc.
3.2(2)	Third Amended and Restated Bylaws of Mattson Technology, Inc.
4.1	Specimen Common Stock Certificate
4.2(3)	Form of Rights Agreement between the Company and Mellon Investor Services, LLC as Rights Agent (including as Exhibit A the form of Certificate of Designation, Preferences and Rights of the Terms of the Series A Preferred Stock, as Exhibit B the form of Right Certificate, and as Exhibit C the Summary of Terms of Rights Agreement)
4.3(4)	Amendment No. 1 to Rights Agreement between the Company and Mellon Investor Services, LLC as Rights Agent
4.4(5)	Amendment No. 2 to Rights Agreement between the Company and Mellon Investor Services, LLC as Rights Agent
4.5	Form of senior indenture, to be entered into between the Registrant and the trustee designated therein
4.6	Form of senior note with respect to each particular series of senior notes issued hereunder (included in the indenture set forth in Exhibit 4.5)
4.7	Form of subordinated indenture to be entered into between the Registrant and the trustee designated therein
4.8	Form of subordinated note with respect to each particular series of subordinated notes issued hereunder (included in the indenture set forth in Exhibit 4.7)
4.9	Form of Warrant with respect to each warrant issued hereunder*
4.10	Certificate of designation, preferences and rights with respect to any preferred stock issued hereunder*
4.11	Form of Depositary Agreement with respect to the depositary shares*
5.1	Opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation*
12.1	Statement re Computation of Ratio of Earnings to Fixed Charges
23.1	Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm
23.2	Consent of Wilson Sonsini Goodrich & Rosati, Professional Corporation (included in Exhibit 5.1)*
24.1	Power of Attorney (see page II-5)
25.1	Form T-1 Statement of Eligibility under the Trust Indenture Act of 1939, as amended, of designated trustee under the senior indenture*
25.2	Form T-1 Statement of Eligibility under the Trust Indenture Act of 1939, as amended, of designated trustee under the subordinated indenture*

* To be filed by amendment or as an exhibit to a report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, and incorporated herein by reference.

- (1) Incorporated by reference to corresponding exhibit to Mattson Technology, Inc. current report on Form 8-K/A filed on January 30, 2001.
- (2) Incorporated by reference to corresponding exhibit to Mattson Technology, Inc. quarterly report on Form 10-Q filed on August 14, 2002.
- (3) Incorporated by reference to corresponding exhibit to Mattson Technology, Inc. current report on Form 8-A12G filed on August 22, 2005.
- (4) Incorporated by reference to corresponding exhibit to Mattson Technology, Inc. annual report on Form 10-K filed on March 2, 2007.
- (5) Incorporated by reference to corresponding exhibit to Mattson Technology, Inc. current report on Form 8-K filed on July 14, 2008.