KEMET CORP Form 424B7 September 08, 2017

Use these links to rapidly review the document TABLE OF CONTENTS

Table of Contents

Filed Pursuant to Rule 424(b)(7) Registration No. 333-219371

PROSPECTUS SUPPLEMENT (To Prospectus dated July 20, 2017)

KEMET Corporation

8,416,814 Shares

Common Stock

All of the 8,416,814 shares of our common stock offered hereby are being offered by the selling securityholder named in this prospectus supplement. We will not receive any of the proceeds from sales of the shares offered hereby, but we will receive approximately \$8,837,570.54 from the underwriter in connection with the cash exercise of the warrant. We will also incur expenses in connection with the offering.

The shares offered hereby are subject to issuance upon exercise of a currently outstanding and exercisable warrant held by the selling securityholder that will be sold to and exercised by the underwriter in connection with its sale of the underlying shares. We provide more information about how the shares will be sold in the sections entitled "Selling Securityholder" on page S-7 and "Underwriting" beginning on page S-13 of this prospectus supplement.

Our common stock is traded on the NYSE under the symbol "KEM." On September 5, 2017 the last reported sale price of our common stock on the NYSE was \$24.35 per share.

The underwriter has agreed to purchase and exercise the warrant for an aggregate price of \$21.56999 per underlying share, which includes the cash exercise price of \$1.04999 per underlying share to be paid by the underwriter to us and which will result in \$172,713,023.28 of proceeds to the selling securityholder, before expenses. The underwriter may offer the shares of common stock in one or more transactions on the NYSE, in the over-the-counter market, through negotiated transactions or otherwise, at market prices, at prices related to market prices or at negotiated prices. See "Underwriting."

Investing in our common stock involves risks. See "Risk Factors" on page S-4 of this prospectus supplement.

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 supplement or the accompanying prospectus. Any representation to the contrary is a criminal offense.

The underwriter expects to deliver the shares of common stock to the purchasers on or about September 11, 2017.

UBS Investment Bank

The date of this prospectus supplement is September 6, 2017.

Table of Contents

TABLE OF CONTENTS

	Page
PROSPECTUS SUPPLEMENT	
ABOUT THIS PROSPECTUS SUPPLEMENT	
BASIS OF PRESENTATION PROSPECTUS SUPPLEMENT SUMMARY RISK FACTORS CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS SELLING SECURITYHOLDER USE OF PROCEEDS MATERIAL UNITED STATES FEDERAL INCOME AND ESTATE TAX CONSIDERATIONS TO NON-U.S. HOLDERS UNDERWRITING LEGAL MATTERS EXPERTS WHERE YOU CAN FIND MORE INFORMATION INCORPORATION OF CERTAIN INFORMATION BY REFERENCE PROSPECTUS	S-ii S-ii S-1 S-4 S-4 S-7 S-8 S-9 S-13 S-19 S-19 S-19
ABOUT THIS PROSPECTUS BASIS OF PRESENTATION OUR COMPANY RISK FACTORS CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS USE OF PROCEEDS SELLING SECURITYHOLDER DESCRIPTION OF CAPITAL STOCK PLAN OF DISTRIBUTION LEGAL MATTERS EXPERTS WHERE YOU CAN FIND MORE INFORMATION INCORPORATION OF CERTAIN INFORMATION BY REFERENCE S-i	i i 1 2 2 4 5 6 9 12 12 13

ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement and the accompanying prospectus form part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or the "SEC," using a "shelf" registration process. This document contains two parts. The first part consists of this prospectus supplement, which provides you with specific information about the shares of our common stock that are being sold in this offering and about the offering itself. The second part, the accompanying prospectus, provides more general information, some of which may not apply to this offering. If the description of this offering varies between this prospectus supplement and the accompanying prospectus, you should rely on the information contained in this prospectus supplement. Before purchasing any shares of common stock, you should carefully read both this prospectus supplement and the accompanying prospectus, together with additional information described in this prospectus supplement and in the accompanying prospectus under the captions "Where You Can Find More Information" and "Incorporation of Certain Information by Reference."

Any statement contained in a document incorporated or deemed to be incorporated by reference in this prospectus supplement or the accompanying prospectus will be deemed to be modified or superseded to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference in this prospectus supplement or the accompanying prospectus modifies or supersedes that statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus supplement.

We have prepared the information contained in this prospectus supplement and the accompanying prospectus, any free writing prospectus and the documents incorporated by reference herein and therein that have been filed by us with the SEC. Neither we, the selling securityholder nor the underwriter has authorized anyone to provide you with any other information and neither we, the selling securityholder nor the underwriter takes any responsibility for other information others may give you.

The information contained in this prospectus supplement and the accompanying prospectus, any free writing prospectus or in any document incorporated by reference herein and therein is accurate only as of its date, regardless of the time of delivery of this prospectus supplement or any sale of common stock. Our business, financial condition, results of operations and prospects may have changed since the dates of such respective documents.

This prospectus supplement is not an offer to sell or solicitation of an offer to buy these shares of common stock in any circumstances under which or jurisdiction in which the offer or solicitation is unlawful.

BASIS OF PRESENTATION

Our fiscal year ends on March 31 of each year. Fiscal years are identified in this prospectus supplement and the accompanying prospectus according to the calendar year in which they end. For example, references to "fiscal year 2017" or similar references refer to the fiscal year ended March 31, 2017.

PROSPECTUS SUPPLEMENT SUMMARY

This summary does not contain all of the information that you should consider before investing in our common stock. You should read the entire prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein carefully, including the matters discussed under the caption "Risk Factors" and the detailed information and financial statements, in each case, included or incorporated by reference in this prospectus supplement and the accompanying prospectus.

Unless the context otherwise indicates, the terms "KEMET," "Company," "we," "us" and "our" and similar terms refer to KEMET Corporation and its subsidiaries. References to our "common stock" refer to the common stock of KEMET Corporation.

Our Company

We are a leading global supplier of passive components. We offer our customers the broadest selection of capacitor technologies in the industry, along with an expanding range of electromechanical devices, electromagnetic compatibility solutions and supercapacitors.

Our product offerings include the world's most complete line of surface mount and through-hole capacitor technologies across tantalum, ceramic, aluminum, film, and paper dielectrics, as well as noise management products, sensors and actuators. Capacitors are fundamental components of most electronic circuits and are found in communication systems, data processing equipment, personal computers, cellular phones, automotive electronic systems, defense and aerospace systems, consumer electronics, power management systems and many other electronic devices and systems. Capacitors are typically used to filter out interference, smooth the output of power supplies, block the flow of direct current while allowing alternating current to pass and for many other purposes. We manufacture a broad line of capacitors in many different sizes and configurations using a variety of raw materials. Our product line consists of over 250,000 distinct part configurations distinguished by various attributes, such as dielectric (or insulating) material, configuration, encapsulation, capacitance level and tolerance, performance characteristics and packaging. Most of our customers have multiple capacitance requirements, often within each of their products and our broad offering allows us to meet the majority of those needs independent of application and end use.

We operate 24 production facilities in Europe, North America and Asia and employ approximately 15,000 employees worldwide. Our customer base includes most of the world's major electronics original equipment manufacturers (including Alcatel-Lucent USA Inc., Bosch Group, Cisco Systems, Inc., Continental AG, Dell Inc., HP Inc., International Business Machines Corporation, Motorola Solutions, L.M. Ericsson, Siemens AG and TRW Automotive), electronic manufacturing service providers (including Celestica Inc., Flextronics International LTD., Jabil Circuit, Inc. and Sanmina-SCI Corporation) and distributors (including TTI, Inc., Arrow Electronics, Inc. and Avnet, Inc.).

In connection with a credit facility (as subsequently amended and restated, the "Platinum Credit Facility") we entered into in May 2009 with K Financing, LLC ("K Financing"), we issued a warrant (which we sometimes refer to herein as the "Platinum Warrant") to K Financing, which was subsequently merged with and into its affiliate K Equity, LLC ("K Equity"). The Platinum Warrant originally entitled K Equity to purchase up to 26,848,484 shares of our common stock, subject to certain adjustments, which represented 49.9% of our common equity at the time of issuance on a post-exercise basis. In December 2010, K Equity sold a portion of the Platinum Warrant equal to 10,893,608 shares which was exercised on a net exercise basis and the resulting 10,000,000 shares of which were sold by underwriters in an offering. In May 2011, K Equity sold a portion of the Platinum Warrant equal to 7,538,062 shares which was exercised on a net exercise basis and the resulting 7,000,000 shares of which were sold by underwriters in an offering. The Platinum Warrant is currently immediately exercisable for the remaining 8,416,814 shares at an exercise price of \$1.04999 per share. In connection with the issuance of the Platinum Warrant, we entered into an Investor Rights

Table of Contents

Agreement (the "Investor Rights Agreement") with K Financing, which subsequently merged with and into K Equity. The Investor Rights Agreement provides K Equity with registration rights, along with certain preemptive, information and board observation rights. All outstanding amounts under the Platinum Credit Facility have been repaid and the facility has been terminated.

Our corporate headquarters is located at 2835 Kemet Way, Simpsonville, South Carolina 29681. Our telephone number is (864) 963-6300. Our website is located at http://www.kemet.com. None of the information that appears on or is linked to or from our website is incorporated by reference into or is otherwise made a part of this prospectus supplement. Our common stock trades on the New York Stock Exchange (the "NYSE") under the symbol "KEM".

S-2

The Offering

Issuer **KEMET Corporation** Selling securityholder K Equity, LLC

Common stock offered by the selling

securityholder Common stock outstanding after the offering Common stock outstanding on a diluted basis after the offering

Use of proceeds

58,645,213 shares

8,416,814 shares

56,259,924 shares

We will not receive any of the proceeds from the sale of the shares in this offering. We will

receive approximately \$8,837,570.54 from the underwriter in connection with the cash exercise of the Platinum Warrant for all 8,416,814 shares underlying the Platinum Warrant at an exercise price of \$1.04999 per share. We intend to use the net proceeds, after expenses,

for general corporate purposes. See "Use of Proceeds" contained in this prospectus

supplement.

We do not intend to pay dividends on our common stock in the foreseeable future. Dividend policy

"KEM" NYSE ticker symbol

Risk Factors You should carefully read and consider the information set forth or described under "Risk

Factors" and all other information contained or incorporated by reference in this prospectus

supplement and the accompanying prospectus.

The number of shares to be outstanding after consummation of this offering is based on 47,843,110 shares of common stock outstanding as of September 5, 2017.

In addition, the number of shares of common stock to be outstanding on a diluted basis after the offering includes the 8,416,814 shares issuable in connection with the cash exercise of the Platinum Warrant and 2,385,289 shares underlying stock options that would be "in-the-money," calculated on a net exercise basis at a price per share of our common stock of \$24.35 (which was the closing price of our common stock on the NYSE on September 5, 2017).

The underwriter will exercise in full the Platinum Warrant acquired by it in connection with this offering on a cash exercise basis by paying to us an aggregate exercise price of approximately \$8,837,570.54 (or \$1.04999 per share) for the 8,416,814 shares of common stock underlying the Platinum Warrant. See "Selling Securityholder" and "Underwriting" in this prospectus supplement for additional information on the cash exercise of the Platinum Warrant by the underwriter in connection with this offering.

RISK FACTORS

Investing in our common stock involves substantial risk. You should carefully consider all the information contained or incorporated by reference in this prospectus supplement and the accompanying prospectus prior to investing in our common stock. In particular, we suggest you consider carefully the risk factors discussed in "Item 1A Risk Factors" of our Annual Report on Form 10-K for the year ended March 31, 2017, as such risk factors may be updated by our annual, quarterly and current reports that we may file with the SEC after the date of this prospectus supplement and that are incorporated by reference in this prospectus supplement and the risk factors contained or incorporated by reference in the accompanying prospectus.

The risks and uncertainties described in this prospectus supplement and the accompanying prospectus and the documents incorporated by reference herein and therein are not the only ones facing us. Additional risks and uncertainties that we do not presently know about or that we currently believe are not material may also adversely affect our business. If any of the risks and uncertainties described in this prospectus supplement and the accompanying prospectus or the documents incorporated by reference herein or therein actually occur, our business, financial condition and results of operations could be adversely affected in a material way. This could cause the trading price of our common stock to decline, perhaps significantly, and you may lose part or all of your investment.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement and the accompanying prospectus contain or incorporate by reference documents containing certain statements that are, or may be deemed to be, "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and as defined in the U.S. Private Securities Litigation Reform Act of 1995. These statements are not guarantees of future performance and involve certain risks, uncertainties and assumptions that are difficult to predict. Actual outcomes and results may differ materially from those expressed in, or implied by, our forward-looking statements and you should not place undue reliance on these statements. Words such as "expects," "anticipates," "believes," "estimates" and other similar expressions or future or conditional verbs such as "will," "should," "would" and "could" are intended to identify such forward-looking statements. Readers should not rely solely on the forward-looking statements and should consider all risks and uncertainties discussed in this prospectus supplement and the accompanying prospectus and the documents incorporated by reference herein and therein under the captions "Risk Factors" and "Cautionary Note Regarding Forward-Looking Statements" and elsewhere in those documents. The statements are representative only as of the date they are made, and we undertake no obligation to update any forward-looking statement.

All forward-looking statements, by their nature, are subject to risks and uncertainties. Our actual future results may differ materially from those set forth in our forward-looking statements. We face risks that are inherent in the businesses and the market places in which we operate. While management believes these forward-looking statements are accurate and reasonable, uncertainties, risks and factors, including those discussed in this prospectus supplement and the accompanying prospectus and the documents incorporated by reference herein and therein under the captions "Risk Factors" and "Cautionary Note Regarding Forward-Looking Statements" and elsewhere in those documents, could cause actual results to differ materially from those reflected in the forward-looking statements.

Table of Contents

Factors that may cause the actual outcome and results to differ materially from those expressed in, or implied by, these forward-looking statements include, but are not necessarily limited to the following:

adverse economic conditions could impact our ability to realize operating plans if the demand for our products declines, and

such conditions could adversely affect our liquidity and ability to continue to operate and cause a write down of long-lived assets or goodwill; an increase in the cost or a decrease in the availability of our principal or single-sourced raw materials; changes in the competitive environment; uncertainty of the timing of customer product qualifications in heavily regulated industries; economic, political or regulatory changes in the countries in which we operate; difficulties, delays or unexpected costs in completing the restructuring plan; acquisitions and other strategic transactions expose us to a variety of risks; acquisition of TOKIN may not achieve all of the anticipated results; our business could be negatively impacted by increased regulatory scrutiny and litigation; difficulties in attracting and training effective employees and management; the need to develop innovative products to maintain customer relationships and offset potential price erosion in older products; exposure to claims alleging product defects; the impact of laws and regulations that apply to our business, including those relating to environmental matters; the impact of laws relating to trade, export controls and foreign corrupt practices; changes impacting international trade and corporate tax provisions related to the global manufacturing and sales of our products may have an adverse effect on our financial condition and results of operations;

volatility of financial and credit markets affecting our access to capital;

the need to reduce the total costs of our products to remain competitive;

potential limitation on the use of net operating losses to offset possible future taxable income;

restrictions in our debt agreements that could limit our flexibility in operating our business;

any failure of our information technology systems to function properly or control unauthorized access to our systems may cause business disruptions;

the exercise of the warrant by K Equity which could potentially result in the existence of a significant stockholder who could seek to influence our corporate decisions;

any economic and demographic experience for our pension plan and other post-retirement benefit plans that is less favorable than our assumptions;

fluctuation in distributor sales could adversely affect our results of operations; and

earthquakes and other natural disasters could disrupt our operations and have a material adverse effect on our financial condition and results of operations.

Table of Contents

Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may impair our business operations and also could cause actual results to differ materially from those included, contemplated or implied by the forward-looking statements made, or incorporated by reference, in this prospectus supplement and the accompanying prospectus, and the reader should not consider the above list of factors to be a complete set of all potential risks or uncertainties.

S-6

SELLING SECURITYHOLDER

Beneficial Ownership

This prospectus supplement relates to the sale of 8,416,814 shares of our common stock which are subject to the Platinum Warrant. K Financing received the Platinum Warrant to purchase 26,848,484 shares of our common stock, subject to certain adjustments, in connection with the entry into the Platinum Credit Facility among us, K Financing and certain of our subsidiaries. K Financing was subsequently merged with and into K Equity. In December 2010, K Equity sold a portion of the Platinum Warrant equal to 10,893,608 shares and in May 2011, K Equity sold a portion of the Platinum Warrant equal to 7,538,062 shares. The Platinum Warrant is currently immediately exercisable for the remaining 8,416,814 shares at an exercise price of \$1.04999 per share. Pursuant to its terms, the Platinum Warrant may be exercised on a net exercise basis or for cash. The underwriter has agreed to exercise in full the Platinum Warrant it acquires in connection with this offering on a cash exercise basis by paying us an aggregate exercise price of approximately \$8,837,570.54 for the 8,416,814 shares of common stock underlying the Platinum Warrant.

The following table sets forth information with respect to the beneficial ownership of our common stock held as of September 5, 2017 by the selling securityholder, the number of shares being offered hereby and information with respect to shares to be beneficially owned by the selling securityholder following this offering.

	Shares Beneficially	Shares	Shares Beneficially	
	Owned Prior	Offered	Owne	d After
	to the Offering	Hereby	the O	ffering
Name	Number	Number	Number	Percentage
K Equity, LLC(1)	8,416,814	8,416,814	0	0.0%

K Holdings, LLC ("K Holdings") is the sole member of K Equity; Platinum Equity Capital Partners II, L.P. ("PECP II") is the controlling member of K Holdings; Platinum Equity Partners II, LLC ("Platinum Partners") is the general partner of PECP II; Platinum Equity Investment Holdings II, LLC ("Platinum Investment") is the senior managing member of Platinum Partners; Platinum Equity, LLC ("Platinum Equity") is the sole member of Platinum Investment; and Tom Gores, a natural person, is the ultimate beneficial owner and Chairman of Platinum Equity. Each of the foregoing may be deemed to have shared power to direct the voting and disposition of the Platinum Warrant (as well as the shares of common stock underlying the Platinum Warrant) held by K Equity. Each of the foregoing disclaims beneficial ownership of the Platinum Warrant (as well as the shares of common stock underlying the Platinum Warrant) except to the extent of their respective pecuniary interest therein. The principal place of business and principal

S-7

office of each of the foregoing is 360 North Crescent Drive, South Building, Beverly Hills, California 90210.

Table of Contents

USE OF PROCEEDS

We will not receive any of the proceeds from the sale of the shares in this offering. We will receive approximately \$8,837,570.54 from the underwriter in connection with the cash exercise of the Platinum Warrant for all 8,416,814 shares underlying the Platinum Warrant at an exercise price of \$1.04999 per share. We intend to use the net proceeds, after expenses, for general corporate purposes.

S-8

MATERIAL UNITED STATES FEDERAL INCOME AND ESTATE TAX CONSEQUENCES TO NON-U.S. HOLDERS

The following is a summary of material United States federal income and estate tax consequences to a non-U.S. holder (as defined below) of the purchase, ownership and disposition of our common stock sold pursuant to this offering. Except where noted, this summary deals only with common stock that is held as a "capital asset" within the meaning of Section 1221 of the Code (generally, property held for investment). This summary is based upon provisions of the Internal Revenue Code of 1986, as amended (the "Code"), U.S. Treasury regulations, rulings and judicial decisions as of the date hereof, all of which are subject to change or differing interpretation, possibly with retroactive effect. We have not sought any ruling from the Internal Revenue Service ("IRS") with respect to the statements made and the conclusions reached in the following summary, and there can be no assurance that the IRS or a court will agree with such statements and conclusions.

A "non-U.S. holder" means a beneficial owner of our common stock (other than an entity treated as a partnership for United States federal income tax purposes) that is not for United States federal income tax purposes any of the following:

an individual who is a citizen or resident of the United States;

a corporation (or any other entity treated as a corporation for United States federal income tax purposes) created or organized in or under the laws of the United States, any state thereof or the District of Columbia;

an estate the income of which is subject to United States federal income taxation regardless of its source; or

a trust if it (1) is subject to the primary supervision of a court within the United States and one or more United States persons have the authority to control all substantial decisions of the trust or (2) has a valid election in effect under applicable United States Treasury regulations to be treated as a United States person.

This summary does not address all aspects of United States federal income and estate taxes and does not deal with foreign, state, local, gift or other tax considerations, including tax treaties, which may be relevant to non-U.S. holders in light of their particular circumstances. This summary also does not address any tax consequences arising under the Medicare contribution tax on net investment income. There can be no assurance that a change in law will not alter significantly the tax considerations that we describe in this summary. In addition, this summary does not address all United States federal income tax consequences relevant to a non-U.S. holder subject to special treatment under the United States federal income tax laws, including, without limitation:

banks, insurance companies or other financial institutions;
tax-exempt or governmental entities;
dealers in securities or foreign currencies;
traders in securities that use the mark-to-market method of accounting for U.S. federal income tax purposes;
persons subject to the alternative minimum tax;
partnerships or other pass-through entities for U.S. federal income tax purposes or holders of interests therein;
persons deemed to sell our common stock under the constructive sale provisions of the Code:

Table of Contents

persons that acquired our common stock through the exercise of employee stock options or otherwise as compensation or
through a tax-qualified retirement plan;
former citizens or long-term residents of the United States;
Total Grazers of rong term residents of the Canada States,
controlled foreign corporations;
passive foreign investment companies;
real estate investment trusts or regulated investment companies; and
persons that hold our common stock as part of a straddle, appreciated financial position, synthetic security, hedge,
conversion transaction or other integrated investment or risk reduction transaction.

If an entity treated as a partnership for United States federal income tax purposes holds our common stock, the tax treatment of a partner in the partnership will generally depend upon the status of the partner, activities of the partnership and certain determinations made at the partner level. If you are a partner of a partnership holding our common stock, you should consult your tax advisors.

EACH HOLDER SHOULD CONSULT ITS TAX ADVISOR REGARDING THE SPECIFIC U.S. FEDERAL, STATE AND LOCAL AND NON-U.S. TAX CONSIDERATIONS OF OWNING AND DISPOSING OF OUR COMMON STOCK.

Dividends

We do not intend to pay dividends on our common stock in the foreseeable future. If, however, we do make distributions of cash or property on our common stock, such distributions will constitute dividends for United States federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under United States federal income tax principles. To the extent those distributions exceed our current and accumulated earnings and profits, the distributions will be treated as a non-taxable return of capital to the extent of the non-U.S. holder's tax basis in our common stock (determined on a share-by-share basis) and thereafter as capital gain from the sale or exchange of such common stock. See "Gain on Disposition of Common Stock."

Subject to the withholding requirements under FATCA (as defined below) and with respect to effectively connected dividends, each of which is discussed below, dividends paid to a non-U.S. holder generally will be subject to withholding of United States federal income tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty. However, dividends that are effectively connected with the conduct of a trade or business by the non-U.S. holder within the United States are not subject to the withholding tax (provided certain certification and disclosure requirements are satisfied), unless an applicable income tax treaty provides otherwise. Instead, such dividends are subject to United States federal income tax on a net income basis in the same manner as if the non-U.S. holder were a United States person as defined under the Code unless an applicable income tax treaty provides otherwise. A non-U.S. holder that is a corporation may also be subject to a "branch profits tax" at a 30% rate (or such lower rate specified by an applicable income tax treaty) on such effectively connected dividends, as adjusted for certain items.

A non-U.S. holder who wishes to claim the benefit of an applicable treaty rate and avoid backup withholding, as discussed below, for dividends will be required (a) to complete an Internal Revenue Service Form W-8BEN or W-8BEN-E (or other applicable documentation) and certify under penalty of perjury that such holder is not a United States person as defined under the Code and is eligible for treaty benefits or (b) if our common stock is held through certain foreign intermediaries, to satisfy the relevant certification requirements of applicable United States Treasury regulations. A non-U.S. holder whose dividends are effectively connected with a United States trade or business will not be subject to U.S. withholding tax if the non-U.S. holder satisfies certain certification requirements by providing the

Table of Contents

applicable withholding agent a properly executed IRS Form W-8ECI (or, in certain cases, IRS Form W-8BEN-E or W-8BEN) certifying eligibility for exemption. Special certification and other requirements apply to certain non-U.S. holders that are pass-through entities rather than corporations or individuals.

A non-U.S. holder eligible for a reduced rate of United States withholding tax pursuant to an income tax treaty may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS.

Gain on Disposition of Common Stock

While backup withholding and withholding under FATCA may apply upon the disposition of our common stock (see the discussion below), any gain realized on the disposition of our common stock generally will not be subject to United States federal income tax unless:

the gain is effectively connected with a trade or business of the non-U.S. holder in the United States (and, if required by an applicable income tax treaty, is attributable to a United States permanent establishment of the non-U.S. holder);

the non-U.S. holder is a nonresident alien individual who is present in the United States for 183 days or more in the taxable year of that disposition, and certain other conditions are met; or

we are or have been a "United States real property holding corporation" ("USRPHC") for United States federal income tax purposes and certain other conditions are met.

A non-U.S. holder described in the first bullet point immediately above will be subject to tax on its net gain in the same manner as if it were a United States person as defined under the Code. In addition, if a non-U.S. holder that is a foreign corporation falls under the first bullet point immediately above, it may be subject to the branch profits tax equal to 30% (or such lower rate specified by an applicable income tax treaty) of its effectively connected earnings and profits, subject to adjustments.

An individual non-U.S. holder described in the second bullet point immediately above will be subject to a flat 30% tax (or such lower rate specified by an applicable income tax treaty) on the gain derived from the disposition, which may be offset by United States source capital losses (even though the individual is not considered a resident of the United States), provided the non-U.S. holder has timely filed United States federal income tax returns with respect to such losses.

With respect to the third bullet point immediately above, we believe we are not and do not anticipate becoming a USRPHC for United States federal income tax purposes.

Federal Estate Tax

Common stock held by an individual non-U.S. holder (as specially defined for U.S. federal estate tax purposes) at the time of death will be included in such holder's gross estate for United States federal estate tax purposes and, therefore, may be subject to U.S. federal estate tax, unless an applicable estate tax treaty provides otherwise.

Information Reporting and Backup Withholding

Information reporting generally will apply to the amount of dividends paid to each non-U.S. holder and the tax withheld with respect to such dividends, regardless of whether withholding was required. Copies of the information returns reporting such dividends and withholding may also be made available to the tax authorities in the country in which the non-U.S. holder resides under the provisions of an applicable income tax treaty.

Table of Contents

A non-U.S. holder will be subject to backup withholding for dividends paid to such holder unless such holder certifies under penalty of perjury that it is a non-U.S. holder (and the payor does not have actual knowledge or reason to know that such holder is a United States person as defined under the Code), or such holder otherwise establishes an exemption.

Proceeds of a disposition of our common stock conducted through a non-United States office of a non-United States broker generally will not be subject to information reporting or backup withholding. However, information reporting and, depending on the circumstances, backup withholding will apply to the proceeds of a disposition of our common stock within the United States or conducted through certain United States-related financial intermediaries, unless the beneficial owner certifies under penalty of perjury that it is a non-U.S. holder (and the payor does not have actual knowledge or reason to know that the beneficial owner is a United States person as defined under the Code), or such owner otherwise establishes an exemption.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be allowed as a refund or a credit against a non-U.S. holder's United States federal income tax liability provided the required information is timely furnished to the Internal Revenue Service.

Additional Withholding Requirements

Under Sections 1471 through 1474 of the Code (such Sections commonly referred to as the Foreign Account Tax Compliance Act, or "FATCA"), a 30% United States federal withholding tax may apply to any dividends paid on our common stock and, for a disposition of our common stock occurring after December 31, 2018, the gross proceeds from such disposition, in each case paid to (i) a "foreign financial institution" (as specifically defined in the Code) which does not provide sufficient documentation, typically on IRS Form W-8BEN-E, evidencing either (x) an exemption from FATCA, or (y) its compliance (or deemed compliance) with FATCA (which may alternatively be in the form of compliance with an intergovernmental agreement with the United States) in a manner which avoids withholding, or (ii) a "non-financial foreign entity" (as specifically defined in the Code) which does not provide sufficient documentation, typically on IRS Form W-8BEN-E, evidencing either (x) an exemption from FATCA, or (y) adequate information regarding certain substantial United States beneficial owners of such entity (if any). Certain countries have entered into intergovernmental agreements with the United States implementing FATCA and such agreements may provide different rules with respect to a foreign financial institution in such countries. Withholding under FATCA applies to payments as described above regardless of whether the recipient receives the payments as a beneficial owner or acting as an intermediary. If a dividend payment is both subject to withholding under FATCA and subject to the withholding tax discussed above under "Dividends," the withholding under FATCA may be credited against, and therefore reduce, such other withholding tax. You should consult your tax advisor regarding these requirements and whether they may be relevant to your ownership and disposition of our common stock.

THE UNITED STATES FEDERAL INCOME TAX SUMMARY SET FORTH ABOVE IS FOR GENERAL INFORMATION PURPOSES ONLY, DOES NOT PURPORT TO BE A COMPLETE DESCRIPTION OF THE POTENTIAL TAX CONSIDERATIONS RELATING TO OUR SHARES OF COMMON STOCK AND IS NOT TAX ADVICE. INVESTORS SHOULD CONSULT THEIR TAX ADVISORS REGARDING THE SPECIFIC TAX CONSEQUENCES TO THEM OF THE PURCHASE, OWNERSHIP AND DISPOSITION OF THE SHARES OF COMMON STOCK.

UNDERWRITING

Subject to the terms and conditions of the underwriting agreement by and among us, the selling securityholder and UBS Securities LLC, as the underwriter, the underwriter has agreed to purchase from the selling securityholder, K Equity, the full remaining portion of the Platinum Warrant. Upon acquiring the warrant, the underwriter will exercise the warrant in full on a cash exercise basis, and we will issue all of the 8,416,814 common shares so issuable upon such exercise of the warrant to the underwriter. For a description of the effect of a cash exercise of the warrant, see the section entitled "Selling Securityholder" in this prospectus supplement.

The underwriting agreement provides that the obligation of the underwriter to purchase the warrant is subject to certain conditions precedent.

The underwriter has agreed to purchase and exercise the warrant for an aggregate price of \$21.56999 per underlying share, which includes the cash exercise price of \$1.04999 per underlying share to be paid by the underwriter to us and which will result in \$172,713,023.28 of proceeds to the selling securityholder, before expenses. The underwriter may receive from purchasers of the shares normal brokerage commissions in amounts agreed with such purchasers. The underwriter proposes to offer the shares of common stock from time to time for sale in one or more transactions on the NYSE, in the over-the-counter market, through negotiated transactions or otherwise, at market prices prevailing at the time of sale, at prices related to prevailing market prices or at negotiated prices, subject to receipt and acceptance by the underwriter and subject to the underwriter's right to reject any order in whole or in part. The underwriter may effect such transactions by selling shares of common stock to or through dealers and such dealers may receive compensation in the form of discounts, concessions or commissions from the underwriter and/or purchasers of shares of common stock for whom they may act as agents or to whom they may sell as principal. The underwriter is committed to take and pay for all of the shares being offered, if any are taken.

In connection with the offering, the underwriter may purchase and sell shares of our common stock in the open market. These transactions may include short sales, purchases to cover positions created by short sales and stabilizing transactions. Short sales involve the sale by the underwriter of a greater number of shares than it is required to purchase in the offering. The underwriter must close out any short position by purchasing shares in the open market. A short position is more likely to be created if the underwriter is concerned that there may be downward pressure on the price of the shares in the open market prior to the completion of the offering. Stabilizing transactions consist of various bids for or purchases of our common stock made by the underwriter in the open market prior to the completion of the offering.

Purchases to cover a short position and stabilizing transactions may have the effect of preventing or slowing a decline in the market price of our common stock. Additionally, these purchases, along with the imposition of any penalty bid, may stabilize, maintain or otherwise affect the market price of our common stock. As a result, the price of our common stock may be higher than the price that might otherwise exist in the open market. These transactions may be effected on the NYSE, in the over-the-counter market or otherwise.

Neither we nor the underwriter makes any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our common stock. In addition, neither we nor the underwriter make any representation that the underwriter will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

Pursuant to the underwriting agreement we have entered into with the selling securityholder and the underwriter, we remain responsible for certain expenses in connection with the offering of our shares pursuant to this prospectus supplement. We estimate that our share of the total expenses of this

Table of Contents

offering, which do not include discounts paid by the selling securityholder, will be approximately \$450,000.

We and the selling securityholder have agreed to indemnify the underwriter against some specified types of liabilities, including liabilities under the Securities Act, and to contribute to payments the underwriter may be required to make in respect of any of these liabilities.

We have entered into a lock-up agreement with the underwriter. Under this agreement, which is subject to certain limited exceptions as described below, we may not, directly or indirectly, offer, sell, short sell or otherwise dispose of any shares of our common stock or other securities convertible into or exchangeable or exercisable for shares of our common stock or derivative of our common stock without the prior written consent of the underwriter for a period of 30 days from the date of this prospectus supplement. This consent may be given at any time and without public notice. The foregoing restrictions do not apply to any issuances, grants or awards under the Company's new or existing option, incentive or other equity-based compensation plans (or the issuance of shares of common stock with respect to any awards under such plans, whether such awards are outstanding now or may hereafter become outstanding under such plans), or the issuance of shares upon exercise of the Platinum Warrant.

Our common stock is listed on the NYSE under the symbol "KEM."

Other Relationships

The underwriter and its affiliates have in the past provided, are currently providing and may in the future from time to time provide, investment banking and other services to us or our subsidiaries and to the selling securityholder or its affiliates, for which they have received, and may in the future receive, customary fees and payment of expenses for the transactions.

In addition, in the ordinary course of its business activities, the underwriter and its affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers. Such investments and securities activities may involve securities and/or instruments of ours or our affiliates. The underwriter and its affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

Notice to Prospective Investors in Australia

No placement document, prospectus, product disclosure statement or other disclosure document has been lodged with the Australian Securities and Investments Commission ("ASIC"), in relation to the offering. This prospectus supplement and the accompanying prospectus do not constitute a prospectus, product disclosure statement or other disclosure document under the Corporations Act 2001 (the "Corporations Act"), and does not purport to include the information required for a prospectus, product disclosure statement or other disclosure document under the Corporations Act.

Any offer in Australia of the securities offered pursuant to this prospectus supplement and the accompanying prospectus (the "Securities") may only be made to persons (the "Exempt Investors") who are "sophisticated investors" (within the meaning of section 708(8) of the Corporations Act), "professional investors" (within the meaning of section 708(11) of the Corporations Act) or otherwise pursuant to one or more exemptions contained in section 708 of the Corporations Act so that it is lawful to offer the Securities without disclosure to investors under Chapter 6D of the Corporations Act.

The Securities applied for by Exempt Investors in Australia must not be offered for sale in Australia in the period of 12 months after the date of allotment under the offering, except in

Table of Contents

circumstances where disclosure to investors under Chapter 6D of the Corporations Act would not be required pursuant to an exemption under section 708 of the Corporations Act or otherwise or where the offer is pursuant to a disclosure document which complies with Chapter 6D of the Corporations Act. Any person acquiring Securities must observe such Australian on-sale restrictions.

This prospectus supplement and the accompanying prospectus contain general information only and does not take account of the investment objectives, financial situation or particular needs of any particular person. It does not contain any securities recommendations or financial product advice. Before making an investment decision, investors need to consider whether the information in this prospectus supplement and the accompanying prospectus are appropriate to their needs, objectives and circumstances, and, if necessary, seek expert advice on those matters.

Notice to Prospective Investors in the Dubai International Financial Centre

This prospectus supplement and the accompanying prospectus relates to an Exempt Offer in accordance with the Offered Securities Rules of the Dubai Financial Services Authority ("DFSA"). This prospectus supplement and the accompanying prospectus is intended for distribution only to persons of a type specified in the Offered Securities Rules of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus supplement and the accompanying prospectus nor taken steps to verify the information set forth herein and has no responsibility for this prospectus supplement and the accompanying prospectus. The Securities to which this prospectus supplement and the accompanying prospectus relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the Securities offered should conduct their own due diligence on the Securities. If you do not understand the contents of this prospectus supplement and the accompanying prospectus you should consult an authorized financial advisor.

Notice to Prospective Investors in European Economic Area

In relation to each member state of the European Economic Area, no offer of Securities which are the subject of the offering may be made to the public in that Member State, other than under the following exemptions under the Prospectus Directive:

- A. to any legal entity which is a qualified investor as defined in the Prospectus Directive;
- B. to fewer than 150 natural or legal persons (other than qualified investors as defined in the Prospectus Directive), subject to obtaining the prior consent of the underwriter for any such offer; or
- C. in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of Securities referred to in (a) to (c) above shall result in a requirement for the Company or the underwriter to publish a prospectus pursuant to Article 3 of the Prospectus Directive, or supplement a prospectus pursuant to Article 16 of the Prospectus Directive.

Each person located in a Member State to whom any offer of Securities is made or who receives any communication in respect of any offer of ordinary shares, or who initially acquires any Securities will be deemed to have represented, warranted, acknowledged and agreed to and with the underwriter and the Company that (1) it is a "qualified investor" within the meaning of the law in that Member State implementing Article 2(1)(e) of the Prospectus Directive; and (2) in the case of any Securities acquired by it as a financial intermediary as that term is used in Article 3(2) of the Prospectus Directive, the Securities acquired by it in the offer have not been acquired on behalf of, nor have they been acquired with a view to their offer or resale to, persons in any Member State other than qualified investors, as that term is defined in the Prospectus Directive, or in circumstances in which the prior consent of the underwriter has been given to the offer or resale; or where ordinary shares have been

Table of Contents

acquired by it on behalf of persons in any Member State other than qualified investors, the offer of those ordinary shares to it is not treated under the Prospectus Directive as having been made to such persons.

The Company, the underwriter and their respective affiliates will rely upon the truth and accuracy of the foregoing representations, acknowledgments and agreements.

This prospectus supplement and the accompanying prospectus has been prepared on the basis that any offer of Securities in any Member State will be made pursuant to an exemption under the Prospectus Directive from the requirement to publish a prospectus for offers of Securities. Accordingly any person making or intending to make an offer in that Member State of Securities which are the subject of the offering contemplated in this prospectus supplement and the accompanying prospectus may only do so in circumstances in which no obligation arises for the Company or the underwriter to publish a prospectus pursuant to Article 3 of the Prospectus Directive in relation to such offer. Neither the Company nor the underwriter has authorized, nor do they authorize, the making of any offer of Securities in circumstances in which an obligation arises for the Company or the underwriter to publish a prospectus for such offer.

For the purposes of this provision, the expression an "offer of Securities to the public" in relation to any Securities in any Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the Securities to be offered so as to enable an investor to decide to purchase or subscribe the Securities, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State and the expression "Prospectus Directive" means Directive 2003/71/EC (as amended) and includes any relevant implementing measure in each Member State.

The above selling restriction is in addition to any other selling restrictions set out below.

Notice to Prospective Investors in Hong Kong

The Securities have not been offered or sold and will not be offered or sold in Hong Kong, by means of any document, other than (a) to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance; or (b) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies Ordinance (Cap. 32) of Hong Kong or which do not constitute an offer to the public within the meaning of that Ordinance. No advertisement, invitation or document relating to the Securities has been or may be issued or has been or may be in the possession of any person for the purposes of issue, whether in Hong Kong or elsewhere, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to Securities which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the Securities and Futures Ordinance and any rules made under that Ordinance.

Notice to Prospective Investors in Switzerland

We have not and will not register with the Swiss Financial Market Supervisory Authority ("FINMA") as a foreign collective investment scheme pursuant to Article 119 of the Federal Act on Collective Investment Scheme of 23 June 2006, as amended ("CISA"), and accordingly the securities being offered pursuant to this prospectus supplement and the accompanying prospectus have not and will not be approved, and may not be licenseable, with FINMA. Therefore, the securities have not been authorized for distribution by FINMA as a foreign collective investment scheme pursuant to Article 119 CISA and the securities offered hereby may not be offered to the public (as this term is defined in Article 3 CISA) in or from Switzerland. The securities may solely be offered to "qualified investors," as this term is defined in Article 10 CISA, and in the circumstances set out in Article 3 of the Ordinance

Table of Contents

on Collective Investment Scheme of 22 November 2006, as amended ("CISO"), such that there is no public offer. Investors, however, do not benefit from protection under CISA or CISO or supervision by FINMA. This prospectus supplement and the accompanying prospectus and any other materials relating to the securities are strictly personal and confidential to each offeree and do not constitute an offer to any other person. This prospectus supplement and the accompanying prospectus may only be used by those qualified investors to whom it has been handed out in connection with the offer described herein and may neither directly or indirectly be distributed or made available to any person or entity other than its recipients. It may not be used in connection with any other offer and shall in particular not be copied and/or distributed to the public in Switzerland or from Switzerland. This prospectus supplement and the accompanying prospectus does not constitute an issue prospectus as that term is understood pursuant to Article 652a and/or 1156 of the Swiss Federal Code of Obligations. We have not applied for a listing of the securities on the SIX Swiss Exchange or any other regulated securities market in Switzerland, and consequently, the information presented in this prospectus supplement and the accompanying prospectus does not necessarily comply with the information standards set out in the listing rules of the SIX Swiss Exchange and corresponding prospectus schemes annexed to the listing rules of the SIX Swiss Exchange.

Notice to Prospective Investors in the United Kingdom

In addition, in the United Kingdom, this document is being distributed only to, and is directed only at, and any offer subsequently made may only be directed at persons who are "qualified investors" (as defined in the Prospectus Directive) (i) who have professional experience in matters relating to investments falling within Article 19 (5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the "Order") and/or (ii) who are high net worth companies (or persons to whom it may otherwise be lawfully communicated) falling within Article 49(2)(a) to (d) of the Order (all such persons together being referred to as "relevant persons"). This document must not be acted on or relied on in the United Kingdom by persons who are not relevant persons. In the United Kingdom, any investment or investment activity to which this document relates is only available to, and will be engaged in with, relevant persons.

Notice to Prospective Investors in Canada

The Securities may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 *Prospectus Exemptions* or subsection 73.3(1) of the *Securities Act* (Ontario), and are permitted clients, as defined in National Instrument 31-103 *Registration Requirements, Exemptions and Ongoing Registrant Obligations*. Any resale of the Securities must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus supplement and the accompanying prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 (or, in the case of securities issued or guaranteed by the government of a non-Canadian jurisdiction, section 3A.4) of National Instrument 33-105 *Underwriting Conflicts* (NI 33-105), the underwriter is not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

Table of Contents

Notice to Investors

Each purchaser of our common stock that is (1) an employee benefit plan subject to Title I of the Employee Retirement Income Security Act of 1974, as amended ("ERISA"), (2) a plan or account subject to Section 4975 of the Internal Revenue Code of 1986, as amended (the "Code") or (3) an entity deemed to hold "plan assets" of any such employee benefit plan, plan or account, by acceptance of any common stock, will be deemed to have represented and warranted that a fiduciary acting on its behalf is causing it to purchase the common stock and that such fiduciary:

- a) Is a bank, an insurance carrier, a registered investment adviser, a registered broker-dealer or an independent fiduciary with at least \$50 million of assets under management or control as specified in 29 CFR Section 2510.3-21(c)(1)(i) (excluding the IRA owner if the purchaser is an IRA);
- b) Is independent (for purposes of 29 CFR Section 2510.3-21(c)(1)) of the Company, the selling securityholder, the underwriter and their respective affiliates (the "Transaction Parties");
- c) Is capable of evaluating investment risks independently, both in general and with regard to particular transactions and investment strategies, including the purchaser's transactions with the Transaction Parties contemplated hereby;
- d) Has been advised that none of the Transaction Parties has undertaken or will undertake to provide impartial investment advice, or has given or will give advice in a fiduciary capacity, in connection with the purchaser's transactions with the Transaction Parties contemplated hereby;
- e) Is a "fiduciary" under Section 3(21)(a) of ERISA or Section 4975(e)(3) of the Code, or both, as applicable, with respect to, and is responsible for exercising independent judgment in evaluating, the purchaser's transactions with the Transaction Parties contemplated hereby; and
- f) Understands and acknowledges the existence and nature of the underwriting discounts, commissions and fees, and any other related fees, compensation arrangements or financial interests, described in this prospectus supplement; and understands, acknowledges and agrees that no such fee or other compensation is a fee or other compensation for the provision of investment advice, and that none of the Transaction Parties, nor any of their respective directors, officers, members, partners, employees, principals or agents has received or will receive a fee or other compensation from the purchaser or such fiduciary for the provision of investment advice (rather than other services) in connection with the purchaser's transactions with the Transaction Parties contemplated hereby.

LEGAL MATTERS

The validity of the common stock offered hereby will be passed upon for us by Jenner & Block LLP. Certain legal matters in connection with this offering will be passed upon for the underwriter by Cahill Gordon & Reindel LLP. Certain legal matters in connection with this offering will be passed upon for the selling securityholder by Morgan, Lewis & Bockius LLP.

EXPERTS

The consolidated financial statements of the Company appearing in the Company's Annual Report on Form 10-K for the year ended March 31, 2017, and the effectiveness of the Company's internal control over financial reporting as of March 31, 2017 appearing in the Company's Annual Report on Form 10-K for the year ended March 31, 2017, have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their reports thereon included therein, and incorporated herein by reference. Such financial statements are, and audited financial statements to be included in subsequently filed documents will be, incorporated herein in reliance upon the reports of Ernst & Young LLP pertaining to such financial statements and the effectiveness of our internal control over financial reporting as of the respective dates (to the extent covered by consents filed with the SEC) given on the authority of such firm as experts in accounting and auditing.

The consolidated financial statements of TOKIN Corporation appearing in the Company's Annual Report on Form 10-K for the year ended March 31, 2017 have been audited by Ernst & Young ShinNihon LLC, independent auditors, as set forth in their report thereon included therein, and incorporated herein by reference. Such financial statements are, and audited financial statements to be included in subsequently filed documents will be, incorporated herein in reliance upon the report of Ernst & Young ShinNihon LLC pertaining to such financial statements (to the extent covered by consents filed with the SEC) given on the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act with respect to the shares of common stock offered hereby. This prospectus supplement does not contain all the information set forth in the registration statement, parts of which are omitted in accordance with the rules and regulations of the SEC. For further information with respect to us and the common stock offered hereby, reference is made to the registration statement. Statements contained in this prospectus supplement as to the contents of any contract or other document are not necessarily complete. If a contract or document has been filed as an exhibit to the registration statement, we refer you to the copy of the contract or document that has been filed. Each statement in this prospectus supplement relating to a contract or document filed as an exhibit is qualified in all respects by the filed exhibit.

We file annual, quarterly and current reports, proxy and information statements and other information with the SEC pursuant to the Exchange Act. The SEC maintains an Internet site at http://www.sec.gov that contains those reports, proxy and information statements and other information regarding us. You may also inspect and copy those reports, proxy and information statements and other information at the Public Reference Room of the SEC at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the Public Reference Room.

You can also access electronic copies of our filings with the SEC, including our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K and all amendments to those reports, free of charge, on our website at http://www.kemet.com. Access to those electronic filings is available as soon as reasonably practicable after they are filed with, or furnished to, the SEC. We make our website content available for information purposes only. It should not be relied upon for investment purposes, nor is it incorporated by reference into this prospectus supplement.

Table of Contents

You can also inspect reports, proxy and information statements and other information about us at the offices of the NYSE, 11 Wall Street, New York, New York 10005.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" information into this prospectus supplement, which means that we can disclose important information about us by referring you to another document filed separately with the SEC. The information incorporated by reference is considered to be a part of this prospectus supplement. This prospectus supplement incorporates by reference the documents and reports listed below (other than portions of these documents deemed to have been furnished and not filed in accordance with SEC rules):

our Annual Report on Form 10-K for the year ended March 31, 2017, as filed with the SEC on June 1, 2017, including the information incorporated by reference from our Proxy Statement filed with the SEC on June 19, 2017 in connection with the solicitation of proxies for the Annual Meeting of Stockholders of KEMET Corporation held on August 2, 2017;

our Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2017, as filed with the SEC on August 8, 2017;

our Current Reports on Form 8-K, as filed with the SEC on the following dates: April 20, 2017, April 20, 2017 (as amended by that Amendment No. 1 on Form 8-K/A filed on July 5, 2017), May 1, 2017, June 14, 2017 and August 2, 2017 (the filing containing Items 5.02, 5.07, and 9.01); and

the description of our common stock, par value \$0.01 per share, included in our Registration Statement on Form 8-A, filed pursuant to Section 12(b) of the Exchange Act, on November 12, 2010 (File No. 001-15491), including any amendments or reports filed for the purpose of updating such description.

We also incorporate by reference the information contained in all other documents we file with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (other than documents or portions of these documents that are deemed to have been furnished and not filed in accordance with SEC rules, unless otherwise indicated therein) after the date of this prospectus supplement and prior to the termination of the offering under this prospectus supplement. The information contained in any such document will be considered part of this prospectus supplement and the accompanying prospectus from the date the document is filed with the SEC.

Any statement contained in a document incorporated or deemed to be incorporated by reference in this prospectus supplement or the accompanying prospectus will be deemed to be modified or superseded to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference in this prospectus supplement or the accompanying prospectus modifies or supersedes that statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus supplement or the accompanying prospectus.

We will provide you, without charge, a copy of any or all of the information incorporated by reference into this prospectus supplement or the accompanying prospectus, if requested in writing or by telephone. Any such request should be directed to:

KEMET Corporation 2835 Kemet Way Simpsonville, South Carolina 29681 Attention: Investor Relations (864) 963-6300

S-20

Table of Contents

PROSPECTUS

8,416,814 Shares

KEMET Corporation

Common Stock

The selling securityholder named herein may offer and sell from time to time up to 8,416,814 shares of our common stock covered by this prospectus. The selling securityholder will receive all of the proceeds from any sales of the shares offered hereby. We will not receive any of the proceeds, but we will incur expenses in connection with the offering.

Our registration of the shares of common stock covered by this prospectus does not mean that the selling securityholder will offer or sell any of the shares. The selling securityholder may sell the shares of common stock covered by this prospectus in a number of different ways and at varying prices. The shares covered by this prospectus currently are subject to issuance upon exercise of a currently outstanding and exercisable warrant held by the selling securityholder. If the selling securityholder offers the shares through a broker-dealer, in an underwritten offering or otherwise, the broker-dealer may purchase from the selling securityholder a portion of the warrant, and may exercise the purchased portion of the warrant, either on a net exercise basis or for cash, and sell to the public the shares acquired upon exercise. We provide more information about how the selling securityholder may sell the shares in the section entitled "Plan of Distribution" beginning on page 9.

Our common stock is traded on the NYSE under the symbol "KEM." On July 19, 2017 the last reported sale price of our common stock on the NYSE was \$17.43 per share.

Investing in our common stock involves risks. See "Risk Factors" on page 2.

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 July 20, 2017.

TABLE OF CONTENTS

ABOUT THIS PROSPECTUS	<u>i</u>
BASIS OF PRESENTATION	<u>i</u>
OUR COMPANY	<u>1</u>
RISK FACTORS	2
CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS	2
USE OF PROCEEDS	4
SELLING SECURITYHOLDER	5
DESCRIPTION OF CAPITAL STOCK	6
PLAN OF DISTRIBUTION	9
LEGAL MATTERS	12
EXPERTS	12
WHERE YOU CAN FIND MORE INFORMATION	13
INCORPORATION OF CERTAIN INFORMATION BY REFERENCE	13

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or the "SEC," using a "shelf" registration process. Specific information about the terms of an offering will be included in a prospectus supplement relating to each specific offering of shares. The prospectus supplement may also add to, update or change information included in this prospectus. You should read both this prospectus and any applicable prospectus supplement, together with additional information described below under the captions "Where You Can Find More Information" and "Incorporation of Certain Information by Reference."

We have prepared the information contained in this prospectus, any applicable prospectus supplement, any free writing prospectus and the documents incorporated by reference herein and therein that have been filed by us with the SEC. Neither we, the selling securityholder, nor any underwriter has authorized anyone to provide you with any other information and neither we, the selling securityholder nor any underwriter takes any responsibility for other information others may give you.

The information contained in this prospectus, in any prospectus supplement, in any free writing prospectus or in any document incorporated by reference herein and therein is accurate only as of its date, regardless of the time of delivery of this prospectus or any sale of common stock. Our business, financial condition, results of operations and prospects may have changed since the dates of such respective documents.

This prospectus is not an offer to sell or solicitation of an offer to buy these shares of common stock in any circumstances under which or jurisdiction in which the offer or solicitation is unlawful.

Unless the context otherwise indicates, the terms "KEMET," "Company," "we," "us," and "our" as used in this prospectus refer to KEMET Corporation and its subsidiaries. The phrase "this prospectus" refers to this prospectus and any applicable prospectus supplement, unless the context otherwise requires.

BASIS OF PRESENTATION

Our fiscal year ends on March 31 of each year. Fiscal years are identified in this prospectus according to the calendar year in which they end. For example, references to "fiscal year 2017" or similar references refer to the fiscal year ended March 31, 2017.

i

OUR COMPANY

We are a leading global supplier of passive components. We offer our customers the broadest selection of capacitor technologies in the industry, along with an expanding range of electromechanical devices, electromagnetic compatibility solutions and supercapacitors.

Our product offerings include the world's most complete line of surface mount and through-hole capacitor technologies across tantalum, ceramic, aluminum, film, and paper dielectrics, as well as noise management products, sensors and actuators. Capacitors are fundamental components of most electronic circuits and are found in communication systems, data processing equipment, personal computers, cellular phones, automotive electronic systems, defense and aerospace systems, consumer electronics, power management systems and many other electronic devices and systems. Capacitors are typically used to filter out interference, smooth the output of power supplies, block the flow of direct current while allowing alternating current to pass and for many other purposes. We manufacture a broad line of capacitors in many different sizes and configurations using a variety of raw materials. Our product line consists of over 250,000 distinct part configurations distinguished by various attributes, such as dielectric (or insulating) material, configuration, encapsulation, capacitance level and tolerance, performance characteristics and packaging. Most of our customers have multiple capacitance requirements, often within each of their products and our broad offering allows us to meet the majority of those needs independent of application and end use.

We operate 24 production facilities in Europe, North America and Asia and employ approximately 15,000 employees worldwide. Our customer base includes most of the world's major electronics original equipment manufacturers (including Alcatel-Lucent USA Inc., Bosch Group, Cisco Systems, Inc., Continental AG, Dell Inc., HP Inc., International Business Machines Corporation, Motorola Solutions, L.M. Ericsson, Siemens AG and TRW Automotive), electronic manufacturing service providers (including Celestica Inc., Flextronics International LTD., Jabil Circuit, Inc. and Sanmina-SCI Corporation) and distributors (including TTI, Inc., Arrow Electronics, Inc. and Avnet, Inc.).

In connection with a credit facility (as subsequently amended and restated, the "Platinum Credit Facility") we entered into in May 2009 with K Financing, LLC ("K Financing"), we issued a warrant (which we sometimes refer to herein as the "Platinum Warrant") to K Financing, which was subsequently merged with and into its affiliate K Equity, LLC ("K Equity"). The Platinum Warrant originally entitled K Equity to purchase up to 26,848,484 shares of our common stock, subject to certain adjustments, which represented 49.9% of our common equity at the time of issuance on a post-exercise basis. In December 2010, K Equity sold a portion of the Platinum Warrant equal to 10,893,608 shares which was exercised on a net exercise basis and the resulting 10,000,000 shares of which were sold by underwriters in an offering. In May 2011, K Equity sold a portion of the Platinum Warrant equal to 7,538,062 shares which was exercised on a net exercise basis and the resulting 7,000,000 shares of which were sold by underwriters in an offering. The Platinum Warrant is currently immediately exercisable for the remaining 8,416,814 shares at an exercise price of \$1.04999 per share. In connection with the issuance of the Platinum Warrant, we entered into an Investor Rights Agreement (the "Investor Rights Agreement") with K Financing, which subsequently merged with and into K Equity. The Investor Rights Agreement provides K Equity with registration rights, along with certain preemptive, information and board observation rights. All outstanding amounts under the Platinum Credit Facility have been repaid and the facility has been terminated.

Our corporate headquarters is located at 2835 Kemet Way, Simpsonville, South Carolina 29681. Our telephone number is (864) 963-6300. Our website is located at http://www.kemet.com. None of the information that appears on or is linked to or from our website is incorporated by reference into or is otherwise made a part of this prospectus. Our common stock trades on the New York Stock Exchange (the "NYSE") under the symbol "KEM".

RISK FACTORS

Investing in our common stock involves substantial risk. You should carefully consider all the information contained or incorporated by reference in this prospectus and any accompanying prospectus supplement prior to investing in our common stock. In particular, we suggest you consider carefully the risk factors discussed in "Item 1A Risk Factors" of our Annual Report on Form 10-K for the year ended March 31, 2017, as such risk factors may be updated by our annual, quarterly and current reports that we may file with the SEC after the date of this prospectus and that are incorporated by reference in this prospectus and the risk factors contained or incorporated by reference in any accompanying prospectus supplement.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains or incorporates by reference documents containing certain statements that are, or may be deemed to be, "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and as defined in the U.S. Private Securities Litigation Reform Act of 1995. These statements are not guarantees of future performance and involve certain risks, uncertainties and assumptions that are difficult to predict. Actual outcomes and results may differ materially from those expressed in, or implied by, our forward-looking statements and you should not place undue reliance on these statements Words such as "expects," "anticipates," "believes," "estimates" and other similar expressions or future or conditional verbs such as "will," "should," "would" and "could" are intended to identify such forward-looking statements. Readers should not rely solely on the forward-looking statements and should consider all risks and uncertainties discussed in this prospectus, any prospectus supplement and the documents incorporated by reference herein and therein under the captions "Risk Factors" and "Cautionary Note Regarding Forward Looking Statements" and elsewhere in those documents. The statements are representative only as of the date they are made, and we undertake no obligation to update any forward-looking statement.

All forward-looking statements, by their nature, are subject to risks and uncertainties. Our actual future results may differ materially from those set forth in our forward-looking statements. We face risks that are inherent in the businesses and the market places in which we operate. While management believes these forward-looking statements are accurate and reasonable, uncertainties, risks and factors, including those discussed in this prospectus, any prospectus supplement and the documents incorporated by reference herein and therein under the captions "Risk Factors" and "Cautionary Note Regarding Forward Looking Statements" and elsewhere in those documents, could cause actual results to differ materially from those reflected in the forward-looking statements.

Factors that may cause the actual outcome and results to differ materially from those expressed in, or implied by, these forward-looking statements include, but are not necessarily limited to the following:

adverse economic conditions could impact our ability to realize operating plans if the demand for our products declines, and such conditions could adversely affect our liquidity and ability to continue to operate and cause a write down of long-lived assets or goodwill;
an increase in the cost or a decrease in the availability of our principal or single-sourced raw materials;
changes in the competitive environment;
uncertainty of the timing of customer product qualifications in heavily regulated industries;
economic, political or regulatory changes in the countries in which we operate;
difficulties, delays or unexpected costs in completing the restructuring plan;

Table of Contents

acquisitions and other strategic transactions expose us to a variety of risks; acquisition of TOKIN may not achieve all of the anticipated results; our business could be negatively impacted by increased regulatory scrutiny and litigation; difficulties in attracting and training effective employees and management; the need to develop innovative products to maintain customer relationships and offset potential price erosion in older products; exposure to claims alleging product defects; the impact of laws and regulations that apply to our business, including those relating to environmental matters; the impact of laws relating to trade, export controls and foreign corrupt practices; changes impacting international trade and corporate tax provisions related to the global manufacturing and sales of our products may have an adverse effect on our financial condition and results of operations; volatility of financial and credit markets affecting our access to capital; the need to reduce the total costs of our products to remain competitive; potential limitation on the use of net operating losses to offset possible future taxable income; restrictions in our debt agreements that could limit our flexibility in operating our business; any failure of our information technology systems to function properly or control unauthorized access to our systems may cause business disruptions; additional exercise of the warrant by K Equity which could potentially result in the existence of a significant stockholder who could seek to influence our corporate decisions; any economic and demographic experience for our pension plan and other post-retirement benefit plans that is less favorable than our assumptions;

fluctuation in distributor sales could adversely affect our results of operations; and

32

earthquakes and other natural disasters could disrupt our operations and have a material adverse effect on our financial condition and results of operations.

Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may impair our business operations and also could cause actual results to differ materially from those included, contemplated or implied by the forward-looking statements made, or incorporated by reference, in this prospectus, and the reader should not consider the above list of factors to be a complete set of all potential risks or uncertainties.

3

Table of Contents

USE OF PROCEEDS

We will not receive any of the proceeds from the sale of the shares of common stock offered and sold pursuant to this prospectus. The shares offered pursuant to this prospectus are currently not outstanding but are subject to issuance upon exercise of the Platinum Warrant held by the selling securityholder.

If the Platinum Warrant is exercised on a net exercise basis, we will not receive any proceeds. Net exercise is described further below in "Selling Securityholder."

If the Platinum Warrant is exercised for cash, we will receive \$1.04999 per share of common stock issuable upon such exercise, which is the current exercise price per share for the Platinum Warrant. If cash exercise is elected, and assuming that the Platinum Warrant is exercised for all 8,416,814 shares of common stock covered by this prospectus, we would receive proceeds of \$8,837,571, which we would use for general corporate purposes.

We, and not the selling securityholder, will pay the costs, expenses and fees in connection with the registration and sale of the shares covered by this prospectus, but the selling securityholder will pay all discounts, commissions or brokers' fees or fees of similar securities industry professionals and transfer taxes, if any, attributable to sales of the shares of common stock.

SELLING SECURITYHOLDER

This prospectus relates to the possible resale of up to 8,416,814 shares of our common stock by K Equity. K Financing received the Platinum Warrant to purchase 26,848,484 shares of our common stock, subject to certain adjustments, in connection with the entry into the Platinum Credit Facility among us, K Financing and certain of our subsidiaries. K Financing was subsequently merged with and into K Equity. In December 2010, K Equity sold a portion of the Platinum Warrant equal to 10,893,608 shares and in May, 2011, K Equity sold a portion of the Platinum Warrant equal to 7,538,062 shares. The Platinum Warrant is currently immediately exercisable for the remaining 8,416,814 shares at an exercise price of \$1.04999 per share. Pursuant to its terms, the Platinum Warrant may be exercised on a net exercise basis or for cash.

The following table sets forth information with respect to the beneficial ownership of our common stock held as of June 30, 2017 by the selling securityholder, the number of shares being offered hereby and information with respect to shares to be beneficially owned by the selling securityholder assuming all the shares registered hereunder are sold and assuming that cash exercise of the Platinum Warrant is elected. The percentage ownership after the offering is based on the 47,558,784 shares of our common stock outstanding as of June 30, 2017 plus the additional 8,416,814 shares of our common stock that would be outstanding immediately after the completion of the offering assuming cash exercise of the Platinum Warrant is elected. The registration of the shares of common stock underlying the Platinum Warrant does not necessarily mean that the selling securityholder will sell all or any particular portion of the shares.

	Shares Beneficially		Shares B	Beneficially
	Owned Prior to the	Shares Offered	Owned After the	
Name	Offering Number	Hereby Number	Number	ering Percentage
Name	Number	Nullibei	Number	rercentage
K Equity, LLC(1)	8,416,814	8,416,814	0	0.0%

(1)

This assumes the exercise of the Platinum Warrant on a cash exercise basis. If net exercise of the entire Platinum Warrant is instead elected, then, based on the closing bid price for our common stock of \$17.43 on July 19, 2017, a total of 7,909,781 shares of our common stock would be issued to the selling securityholder (rather than 8,416,814 shares); in that case, based on such bid price and assuming a sale of all of such shares in the offering, the number of shares offered hereby would be 7,909,781, and the resulting beneficial ownership of our common stock by K Equity after such offering would still be 0.0%. The number of shares issuable upon any net exercise of the Platinum Warrant varies depending on the closing bid price for our common stock as of the trading day immediately preceding the date of exercise, so changes in such closing bid price from day to day can result in changes in the number of shares issuable upon any such net exercise. K Holdings, LLC ("K Holdings") is the sole member of K Equity; Platinum Equity Capital Partners II, L.P. ("PECP II") is the controlling member of K Holdings; Platinum Equity Partners II, LLC ("Platinum Partners") is the general partner of PECP II; Platinum Equity Investment Holdings II, LLC ("Platinum Investment") is the senior managing member of Platinum Partners; Platinum Equity, LLC ("Platinum Equity") is the sole member of Platinum Investment; and Tom Gores, a natural person, is the ultimate beneficial owner and Chairman of Platinum Equity. Each of the foregoing may be deemed to have shared power to direct the voting and disposition of the Platinum Warrant (as well as the shares of common stock underlying the Platinum Warrant) held by K Equity. Each of the foregoing disclaims beneficial ownership of the Platinum Warrant (as well as the shares of common stock underlying the Platinum Warrant) except to the extent of their respective pecuniary interest therein. The principal place of business and principal office of each of the foregoing is 360 North Crescent Drive, South Building, Beverly Hills, California 90210.

5

Table of Contents

Material Relationships

Investor Rights Agreement. On June 30, 2009, in connection with the issuance of the Platinum Warrant, we entered into an Investor Rights Agreement (the "Investor Rights Agreement") with K Financing, which subsequently merged with and into K Equity. The Investor Rights Agreement provides K Equity with up to three demand registrations and the right to request that any registerable securities it holds be included in any registration statement we file for our own account or the account of any holder of our common stock. Pursuant to the agreement we agreed to pay registration-related fees and expenses. We also agreed to indemnify K Equity for certain losses in connection with such registrations. On December 14, 2010, the SEC declared effective a registration statement on Form S-3 for 10,000,000 of the Platinum Warrant shares, which registration statement was filed in response to K Equity's exercise of the first of its three demand registration rights, and on March 27, 2011, the SEC declared effective a registration statement on Form S-3 for 7,000,000 of the Platinum Warrant shares, which registration statement was filed in response to K Equity's exercise of the second of its three demand registration rights. In addition to registration rights, the Investor Rights Agreement grants K Equity certain information rights and the right to appoint up to two representatives, depending on its ownership percentage of our common stock, to observe our board of directors and receive materials sent to our board of directors. The Investor Rights Agreement also provides K Equity with preemptive rights in connection with any proposed issuance or sale of our common stock or securities exercisable for or convertible into shares of our common stock.

DESCRIPTION OF CAPITAL STOCK

Our authorized capital stock consists of 175,000,000 shares of common stock, par value \$0.01 per share, and 10,000,000 shares of preferred stock, par value \$0.10 per share, the rights and preferences of which may be established from time to time by our board of directors, and zero shares of non-voting common stock, par value \$0.01 per share. As of June 30, 2017, there were 47,558,784 outstanding shares of our common stock. There are currently no outstanding shares of preferred stock.

The following description of our capital stock is only a summary, does not purport to be complete and is subject to and qualified by the full text of our restated certificate of incorporation and our amended and restated by-laws and of the applicable provisions of Delaware law.

Common Stock

Holders of our common stock are entitled to one vote for each share on all matters voted upon by our stockholders, including the election of directors, and do not have cumulative voting rights. Our common stockholders are entitled to receive ratably any dividends that may be declared by our board of directors out of any assets or funds legally available for payment of dividends.

We currently do not expect to pay dividends on our common stock. Future declaration and payment of dividends, if any, will be at the discretion of our board of directors and will be dependent upon our results of operations, financial condition, cash requirements, future prospects and other factors. We can give no assurance that any dividends will be declared or paid in the future.

Holders of our common stock are entitled to share ratably in our net assets upon our dissolution or liquidation after payment or provision for all liabilities and any preferential liquidation rights of our preferred stock then outstanding. Holders of our common stock do not have preemptive rights to purchase shares of our stock. Holders of our common stock do not have subscription, redemption or conversion rights. The rights, preferences and privileges of holders of our common stock will be subject to those of the holders of any shares of our preferred stock we may issue in the future.

Table of Contents

Preferred Stock

Our board of directors may, from time to time, authorize the issuance of one or more classes or series of preferred stock without stockholder approval.

Our restated certificate of incorporation permits us to issue up to 10,000,000 shares of preferred stock from time to time. Subject to the provisions of our restated certificate of incorporation and limitations prescribed by law, our board of directors is authorized to issue preferred shares and to fix before issuance the number of preferred shares to be issued and the designation, relative powers, preferences, rights and qualifications, limitations or restrictions of the preferred shares, terms of redemption, conversion rights and liquidation preferences, in each case without any action or vote by our stockholders.

The issuance of preferred stock may adversely affect the rights of our common stockholders by, among other things:

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 a change in control without further action by the stockholders.

As a result of these or other factors, the issuance of preferred stock could have an adverse effect on the market price of our common stock.

Anti-takeover Effects of Our Restated Certificate of Incorporation, Our Amended and Restated By-laws and Contractual Arrangements

Our restated certificate of incorporation and our amended and restated by-laws contain certain provisions that are intended to enhance the likelihood of continuity and stability in the composition of the board of directors and which may have the effect of delaying, deferring or preventing a future takeover or change in control of the company unless such takeover or change in control is approved by the board of directors.

Classified Board of Directors

Our restated certificate of incorporation divides our board of directors into three classes of directors serving staggered three-year terms. The existence of a classified board will make it more difficult for a third party to gain control of our board of directors by preventing the third party from replacing a majority of the directors at any given meeting of stockholders.

Removal of Directors and Filling Vacancies in Directorships

Our restated certificate of incorporation and our amended and restated by-laws provide that directors may be removed for cause by the holders of a majority of shares entitled to vote. Our restated certificate of incorporation and our amended and restated by-laws provide that any vacancy on our board of directors or newly created directorship may be filled solely by the affirmative vote of a majority of the remaining directors then in office or by a sole remaining director, and that any director so elected will hold office for the remainder of the full term of the class of directors in which the vacancy occurred or the new directorship was created and until such director's successor has been elected and qualified. The limitations on the removal of directors and the filling of vacancies may deter a third party from seeking to remove incumbent directors and simultaneously gaining control of our board of directors by filling the vacancies created by such removal with its own nominees.

Table of Contents

Stockholder Action and Meetings of Stockholders

Our restated certificate of incorporation provides that stockholder action can be taken only at an annual or special meeting of stockholders and cannot be taken by written consent in lieu of a meeting. Our restated certificate of incorporation and our amended and restated by-laws provide that, except as otherwise required by law, special meetings of the stockholders can only be called by the affirmative vote of a majority of our board of directors, the chairman of the board or our chief executive officer. Stockholders are not permitted to call a special meeting or to require the board of directors to call a special meeting.

Undesignated Preferred Stock

The ability to authorize undesignated preferred stock will make it possible for our board of directors to issue preferred stock with super voting, special approval, dividend or other rights or preferences on a discriminatory basis that could impede the success of any attempt to acquire us. These and other provisions may have the effect of deferring, delaying or discouraging hostile takeovers or changes in control or management of our company.

Advance Notice Requirements for Stockholder Proposals

Our amended and restated by-laws establish an advance notice procedure for stockholder proposals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to the board of directors. Stockholders at an annual meeting may only consider proposals or nominations specified in the notice of meeting or brought before the meeting by or at the direction of the board of directors or by a stockholder who was a stockholder of record on the record date for the meeting, who is entitled to vote at the meeting and who has complied with the notice procedures provided in our amended and restated by-laws.

To be timely, a stockholder's notice must be delivered to the corporate secretary at the principal executive offices not less than 90 days prior to the first anniversary of the prior year's annual meeting of stockholders, except that, if the date of the annual meeting is advanced more than 30 days prior to or delayed more than 60 days after such anniversary, notice must be so delivered not later than the close of business on the later of the 90th day prior to such annual meeting or the 10th day following the date on which public announcement of the date of the annual meeting is first made. Our amended and restated by-laws also specify requirements as to the form and substance of notice. These provisions may make it more difficult for stockholders to bring matters before an annual meeting of stockholders.

Although our amended and restated by-laws do not give the board of directors the power to approve or disapprove stockholder nominations of candidates or proposals regarding other business to be conducted at a special or annual meeting, our amended and restated by-laws may have the effect of precluding the conduct of certain business at a meeting if the proper procedures are not followed or may discourage or deter a potential acquiror from conducting a solicitation of proxies to elect its own slate of directors or otherwise attempting to obtain control of the company.

Authorized but Unissued Shares

Our authorized but unissued shares of common stock and preferred stock are available for future issuance without stockholder approval. These additional shares may be utilized for a variety of corporate purposes, including future public offerings to raise additional capital, corporate acquisitions and employee benefit plans. The existence of authorized but unissued shares of common stock and preferred stock could render more difficult or discourage an attempt to obtain control of a majority of our common stock by means of a proxy contest, tender offer, merger or otherwise.

Table of Contents

Stockholder Action by Written Consent

Pursuant to Section 228 of the General Corporation Law of the State of Delaware (the "DGCL"), any action required to be taken at any annual or special meeting of the stockholders may be taken without a meeting, without prior notice and without a vote if a consent or consents in writing, setting forth the action so taken, is signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares of our stock entitled to vote thereon were present and voted, unless our restated certificate of incorporation provides otherwise. Our restated certificate of incorporation provides that any action required or permitted to be taken by our stockholders may be effected at a duly called annual or special meeting of our stockholders and may not be effected by consent in writing by such stockholders.

Business Combinations with Interested Stockholders

In general, Section 203 of the DGCL prohibits a publicly held Delaware corporation from engaging in a business combination, such as a merger, with a person or group owning 15% or more of the corporation's voting stock for a period of three years following the date the person became an interested stockholder, unless (with certain exceptions) the business combination or the transaction in which the person became an interested stockholder is approved in a prescribed manner. Our restated certificate of incorporation contains provisions that have the same effect as certain portions of Section 203 that relate to acquisition transactions. Our restated certificate of incorporation provides that in the case of certain mergers, sales of assets, issuances of securities, liquidations or dissolutions, or reclassifications or recapitalizations involving holders of stock representing 20% or more of the voting power of the then-outstanding shares of voting stock (other than certain existing holders of voting stock prior to our initial public offering in 1992), such transactions must be approved by 80% of the voting power of our then-outstanding voting stock entitled to vote generally in the election of the directors, unless such transactions are approved by a majority of the Disinterested Directors (as defined in our restated certificate of incorporation) or unless certain minimum price, form of consideration and procedural requirements are satisfied. Our restated certificate of incorporation provides that the affirmative vote of the holders of 80% of the voting power of our then-outstanding voting stock entitled to vote generally in the election of the directors is required to amend, alter, change, or repeal the provisions of our restated certificate of incorporation described above. These requirements of a supermajority vote to approve certain transactions and amendments to our restated certificate of incorporation could enable a minority of our stockholders to exercise veto powers over such transactions and amendments.

Under some circumstances, Section 203 of the DGCL makes it more difficult for a person who is an interested stockholder to effect various business combinations with us for a three-year period. We have not elected to be exempt from the restrictions imposed under Section 203 of the DGCL.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Computershare Trust Company, N.A.

PLAN OF DISTRIBUTION

We are registering 8,416,814 shares of our common stock for possible sale by the selling securityholder.

9

Table of Contents

The selling securityholder may offer and sell all or a portion of the shares covered by this prospectus from time to time, in one or more or any combination of the following transactions:

on the NYSE, in the over-the-counter market or on any other national securities exchange on which our shares are listed or traded:

in privately negotiated transactions;

in underwritten transactions, including by selling the Platinum Warrant or a portion thereof to underwriters, who may then exercise the Platinum Warrant or a portion thereof and offer and sell the underlying shares to investors;

in a block trade in which a broker-dealer will attempt to sell the offered shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;

through purchases by a broker-dealer as principal and resale by the broker-dealer for its account pursuant to this prospectus; and

through any other method permitted by applicable law.

The selling securityholder may sell the shares at prices then prevailing or related to the then current market price or at negotiated prices. The offering price of the shares from time to time will be determined by the selling securityholder and, at the time of the determination, may be higher or lower than the market price of our common stock on the NYSE or any other exchange or market.

The shares of common stock offered hereby currently are subject to issuance upon exercise of the Platinum Warrant. If the selling securityholder offers the shares through a broker-dealer, including in an underwritten offering or otherwise, the broker-dealer may agree to purchase from the selling securityholder a portion of the Platinum Warrant, and may exercise the purchased portion of the Platinum Warrant, either for cash or on a net exercise basis, and sell to the public the shares acquired upon exercise.

The shares may be offered to the public, from time to time, through broker-dealers acting as agent or principal, including through underwriting syndicates represented by one or more managing underwriters or directly by one or more of such firms in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. The obligations of the underwriters to purchase the shares of common stock (or portion of the Platinum Warrant, as applicable) will be subject to the conditions set forth in the applicable underwriting agreement. Any public offering price and any discounts or concessions allowed or reallowed or paid by underwriters or dealers to other dealers may be changed from time to time.

In connection with an underwritten offering, underwriters or agents may receive compensation in the form of discounts, concessions or commissions from the selling securityholder or from purchasers of the offered shares for whom they may act as agents. In addition, underwriters may sell the shares to or through dealers, and those dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters and/or commissions from the purchasers for whom they may act as agents. The selling securityholder and any underwriters, dealers or agents participating in a distribution of the shares may be deemed to be "underwriters" within the meaning of the Securities Act, and any profit on the sale of the shares by the selling securityholder and any commissions received by broker-dealers may be deemed to be underwriting commissions under the Securities Act.

We and the selling securityholder each may agree to indemnify an underwriter, broker-dealer or agent against certain liabilities related to the selling of the common stock, including liabilities arising under the Securities Act. Under the Investor Rights Agreement, we have agreed to indemnify the selling securityholder against certain liabilities related to the sale of the common stock, including liabilities arising under the Securities Act. Under the Investor Rights Agreement, we have also agreed

Table of Contents

to pay the costs, expenses and fees of registering the shares of common stock; however, the selling securityholder will pay any underwriting discounts or commissions relating to the sale of the shares of common stock in any underwritten offering.

Upon our notification by the selling securityholder that any material arrangement has been entered into with an underwriter or broker-dealer (or if we enter into such an agreement) for the sale of shares through a sale over the NYSE, a privately negotiated transaction, a block trade, a purchase of shares or a portion of the Platinum Warrant by an underwriter or broker-dealer or through another of the manners of offer and sale described above, we will file a supplement to this prospectus, if required, pursuant to Rule 424(b) under the Securities Act, disclosing certain material information, including:

the name of the selling securityholder;
the number of shares being offered;
the terms of the offering;
the names of the participating underwriters, broker-dealers or agents;
any discounts, commissions or other compensation paid to underwriters or broker-dealers and any discounts, commissions or concessions allowed or reallowed or paid by any underwriters to dealers;
the public offering price; and
other material terms of the offering.

The selling securityholder is subject to the applicable provisions of the Exchange Act, and the rules and regulations under the Exchange Act, including Regulation M. This regulation may limit the timing of purchases and sales of any of the shares of common stock offered in this prospectus by the selling securityholder. The anti-manipulation rules under the Exchange Act may apply to sales of shares in the market and to the activities of the selling securityholder and its affiliates. Furthermore, Regulation M may restrict the ability of any person engaged in the distribution of the shares to engage in market-making activities for the particular securities being distributed for a period of up to five business days before the distribution. The restrictions may affect the marketability of the shares and the ability of any person or entity to engage in market-making activities for the shares.

To facilitate the offering of shares covered by this prospectus, certain persons participating in the offering may engage in transactions that stabilize, maintain or otherwise affect the price of the shares of common stock. This may include over-allotments or short sales of the securities, which involve the sale by persons participating in the offering of more securities than the selling securityholder sold to them. In these circumstances, these persons would cover such over-allotments or short positions by making purchases in the open market or by exercising their over-allotment option, if any. In addition, these persons may stabilize or maintain the price of the securities by bidding for or purchasing securities in the open market or by imposing penalty bids, whereby selling concessions allowed to dealers participating in the offering may be reclaimed if securities sold by them are repurchased in connection with stabilization transactions. The effect of these transactions may be to stabilize or maintain the market price of the securities at a level above that which might otherwise prevail in the open market. These transactions may be discontinued at any time.

In the ordinary course of their business activities, any underwriters and their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers and may at any time hold long and short positions in such securities and instruments. Such investment and securities activities may involve securities and instruments of the Company.

Table of Contents

To the extent required, this prospectus may be amended and/or supplemented from time to time to describe a specific plan of distribution.

Instead of selling the shares of common stock under this prospectus, the selling securityholder may sell the shares of common stock in compliance with the provisions of Rule 144 under the Securities Act, if available, or pursuant to other available exemptions from the registration requirements of the Securities Act.

LEGAL MATTERS

The validity of the common stock offered hereby will be passed upon for us by Jenner & Block LLP. Any underwriters or agents will be advised about other issues relating to the offering by counsel to be named in the applicable prospectus supplement.

EXPERTS

The consolidated financial statements of the Company appearing in the Company's Annual Report on Form 10-K for the year ended March 31, 2017, and the effectiveness of the Company's internal control over financial reporting as of March 31, 2017 appearing in the Company's Annual Report on Form 10-K for the year ended March 31, 2017, have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their reports thereon included therein, and incorporated herein by reference. Such financial statements are, and audited financial statements to be included in subsequently filed documents will be, incorporated herein in reliance upon the reports of Ernst & Young LLP pertaining to such financial statements and the effectiveness of our internal control over financial reporting as of the respective dates (to the extent covered by consents filed with the SEC) given on the authority of such firm as experts in accounting and auditing.

The consolidated financial statements of TOKIN Corporation appearing in the Company's Annual Report on Form 10-K for the year ended March 31, 2017 have been audited by Ernst & Young ShinNihon LLC, independent auditors, as set forth in their report thereon included therein, and incorporated herein by reference. Such financial statements are, and audited financial statements to be included in subsequently filed documents will be, incorporated herein in reliance upon the report of Ernst & Young ShinNihon LLC pertaining to such financial statements (to the extent covered by consents filed with the SEC) given on the authority of such firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act with respect to the shares of common stock offered hereby. This prospectus, filed as part of the registration statement, does not contain all the information set forth in the registration statement, parts of which are omitted in accordance with the rules and regulations of the SEC. For further information with respect to us and the common stock offered hereby, reference is made to the registration statement. Statements contained in this prospectus as to the contents of any contract or other document are not necessarily complete. If a contract or document has been filed as an exhibit to the registration statement, we refer you to the copy of the contract or document that has been filed. Each statement in this prospectus relating to a contract or document filed as an exhibit is qualified in all respects by the filed exhibit.

We file annual, quarterly and current reports, proxy and information statements and other information with the SEC pursuant to the Exchange Act. The SEC maintains an Internet site at http://www.sec.gov that contains those reports, proxy and information statements and other information regarding us. You may also inspect and copy those reports, proxy and information statements and other information at the Public Reference Room of the SEC at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the Public Reference Room.

You can also access electronic copies of our filings with the SEC, including our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K and all amendments to those reports, free of charge, on our website at http://www.kemet.com. Access to those electronic filings is available as soon as reasonably practicable after they are filed with, or furnished to, the SEC. We make our website content available for information purposes only. It should not be relied upon for investment purposes, nor is it incorporated by reference into this prospectus.

You can also inspect reports, proxy and information statements and other information about us at the offices of the NYSE, 20 Broad Street, New York. New York 10005.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" information into this prospectus, which means that we can disclose important information about us by referring you to another document filed separately with the SEC. The information incorporated by reference is considered to be a part of this prospectus. This prospectus incorporates by reference the documents and reports listed below (other than portions of these documents deemed to have been furnished and not filed in accordance with SEC rules):

our Annual Report on Form 10-K for the year ended March 31, 2017, as filed with the SEC on June 1, 2017, including the information incorporated by reference from our Proxy Statement filed with the SEC on June 19, 2017 in connection with the solicitation of proxies for the Annual Meeting of Stockholders of KEMET Corporation to be held on August 2, 2017;

our Current Reports on Form 8-K, as filed with the SEC on the following dates: April 20, 2017, April 20, 2017 (as amended by that Amendment No. 1 on Form 8-K/A filed on July 5, 2017), May 1, 2017 and June 14, 2017; and

the description of our common stock, par value \$0.01 per share, included in our Registration Statement on Form 8-A, filed pursuant to Section 12(b) of the Exchange Act, on November 12, 2010 (File No. 001-15491), including any amendments or reports filed for the purpose of updating such description.

Table of Contents

We also incorporate by reference the information contained in all other documents we file with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (other than documents or portions of these documents that are deemed to have been furnished and not filed in accordance with SEC rules, unless otherwise indicated therein) after the date of the initial registration statement of which this prospectus forms a part and prior to the effectiveness of such registration statement, and after the date of this prospectus and prior to the termination of this offering. The information contained in any such document will be considered part of this prospectus from the date the document is filed with the SEC.

Any statement contained in a document incorporated or deemed to be incorporated by reference in this prospectus will be deemed to be modified or superseded to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference in this prospectus modifies or supersedes that statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

We will provide you, without charge, a copy of any or all of the information incorporated by reference into this prospectus, if requested in writing or by telephone. Any such request should be directed to:

KEMET Corporation 2835 Kemet Way Simpsonville, South Carolina 29681 Attention: Investor Relations (864) 963-6300

14

8,416,814 Shares

KEMET Corporation UBS Investment Bank

Prospectus Supplement dated September 6, 2017