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

FORM 10-Q

(Mark One)

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended October 3, 2020

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from _______ **to** _______

Commission File Number 001-07416

Vishay Intertechnology, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**38-1686453**
(State or Other Jurisdiction of Incorporation)	(I.R.S. Employer Identification Number)
63 Lancaster Avenue Malvern, Pennsylvania 19355-2143	**610-644-1300**
(Address of Principal Executive Offices)	(Registrant's Area Code and Telephone Number)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading symbol	Name of exchange on which registered
Common stock, par value $0.10 per share	VSH	New York Stock Exchange LLC

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. ☒ Yes ☐ No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (section 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files.)
☒Yes ☐ No

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

Large Accelerated Filer ☒	Accelerated filer ☐
Non-accelerated filer ☐	Smaller reporting company ☐
Emerging growth company ☐	

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).
☐ Yes ☒ No

As of October 30, 2020 the registrant had 132,560,749 shares of its common stock and 12,097,409 shares of its Class B common stock outstanding.

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PART I - FINANCIAL INFORMATION

Item 1. Financial Statements

VISHAY INTERTECHNOLOGY, INC.
Consolidated Condensed Balance Sheets
(In thousands)

	October 3, 2020 (Unaudited)	December 31, 2019
Assets		
Current assets:		
Cash and cash equivalents	**$ 682,422**	$ 694,133
Short-term investments	**29,538**	108,822
Accounts receivable, net	**342,691**	328,187
Inventories:		
Finished goods	**119,221**	122,466
Work in process	**197,806**	187,354
Raw materials	**123,176**	121,860
Total inventories	**440,203**	431,680
Prepaid expenses and other current assets	**120,490**	141,294
Total current assets	**1,615,344**	1,704,116
Property and equipment, at cost:		
Land	**75,335**	75,011
Buildings and improvements	**619,228**	585,064
Machinery and equipment	**2,678,629**	2,606,355
Construction in progress	**78,059**	110,722
Allowance for depreciation	**(2,534,027)**	(2,425,627)
Property and equipment, net	**917,224**	951,525
Right of use assets	**103,235**	93,162
Goodwill	**157,406**	150,642
Other intangible assets, net	**67,839**	60,659
Other assets	**172,785**	160,671
Total assets	**$ 3,033,833**	$ 3,120,775

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VISHAY INTERTECHNOLOGY, INC.
Consolidated Condensed Balance Sheets (continued)
(In thousands)

	October 3, 2020 (Unaudited)	December 31, 2019
Liabilities, temporary equity, and equity		
Current liabilities:		
Notes payable to banks	**$ 4**	$ 2
Trade accounts payable	**159,016**	173,915
Payroll and related expenses	**130,252**	122,100
Lease liabilities	**21,924**	20,217
Other accrued expenses	**169,379**	186,463
Income taxes	**22,699**	17,731
Total current liabilities	**503,274**	520,428
Long-term debt less current portion	**392,290**	499,147
U.S. transition tax payable	**125,438**	140,196
Deferred income taxes	**8,670**	22,021
Long-term lease liabilities	**86,043**	78,511
Other liabilities	**101,191**	100,207
Accrued pension and other postretirement costs	**277,758**	272,402
Total liabilities	**1,494,664**	1,632,912
Redeemable convertible debentures	**-**	174
Equity:		
Vishay stockholders' equity		
Common stock	**13,256**	13,235
Class B convertible common stock	**1,210**	1,210
Capital in excess of par value	**1,410,335**	1,425,170
Retained earnings	**115,184**	72,180
Accumulated other comprehensive income (loss)	**(3,340)**	(26,646)
Total Vishay stockholders' equity	**1,536,645**	1,485,149
Noncontrolling interests	**2,524**	2,540
Total equity	**1,539,169**	1,487,689
Total liabilities, temporary equity, and equity	**$ 3,033,833**	$ 3,120,775

See accompanying notes.

VISHAY INTERTECHNOLOGY, INC.
Consolidated Condensed Statements of Operations
(Unaudited - In thousands, except per share amounts)

	Fiscal quarters ended	
	October 3, 2020	**September 28, 2019**
Net revenues	**$ 640,160**	$ 628,329
Costs of products sold	**488,451**	478,250
Gross profit	**151,709**	150,079
Selling, general, and administrative expenses	**90,219**	91,796
Restructuring and severance costs	**-**	7,255
Operating income	**61,490**	51,028
Other income (expense):		
Interest expense	**(7,414)**	(8,564)
Other	**(4,898)**	1,718
Loss on early extinguishment of debt	**(3,454)**	-
Total other income (expense)	**(15,766)**	(6,846)
Income before taxes	**45,724**	44,182
Income tax expense	**12,063**	13,917
Net earnings	**33,661**	30,265
Less: net earnings attributable to noncontrolling interests	**177**	227
Net earnings attributable to Vishay stockholders	**$ 33,484**	$ 30,038
Basic earnings per share attributable to Vishay stockholders	**$ 0.23**	$ 0.21
Diluted earnings per share attributable to Vishay stockholders	**$ 0.23**	$ 0.21
Weighted average shares outstanding - basic	**144,854**	144,628
Weighted average shares outstanding - diluted	**145,197**	145,027
Cash dividends per share	**$ 0.095**	$ 0.095

See accompanying notes.

VISHAY INTERTECHNOLOGY, INC.
Consolidated Statements of Comprehensive Income
(Unaudited - In thousands)

	Fiscal quarters ended October 3, 2020	September 28, 2019
Net earnings	**$ 33,661**	$ 30,265
Other comprehensive income, net of tax		
Pension and other post-retirement actuarial items	**1,886**	1,368
Foreign currency translation adjustment	**21,100**	(23,004)
Other comprehensive income	**22,986**	(21,636)
Comprehensive income	**56,647**	8,629
Less: comprehensive income attributable to noncontrolling interests	**177**	227
Comprehensive income attributable to Vishay stockholders	**$ 56,470**	$ 8,402

See accompanying notes.

VISHAY INTERTECHNOLOGY, INC.
Consolidated Condensed Statements of Operations
(Unaudited - In thousands, except per share amounts)

	Nine fiscal months ended October 3, 2020	Nine fiscal months ended September 28, 2019
Net revenues	**$ 1,834,718**	$ 2,058,728
Costs of products sold	**1,405,099**	1,522,889
Gross profit	**429,619**	535,839
Selling, general, and administrative expenses	**279,178**	290,332
Restructuring and severance costs	**743**	7,255
Operating income	**149,698**	238,252
Other income (expense):		
Interest expense	**(24,396)**	(25,160)
Other	**(6,184)**	3,233
Loss on early extinguishment of debt	**(7,520)**	(1,307)
Total other income (expense)	**(38,100)**	(23,234)
Income before taxes	**111,598**	215,018
Income tax expense	**25,658**	64,377
Net earnings	**85,940**	150,641
Less: net earnings attributable to noncontrolling interests	**584**	667
Net earnings attributable to Vishay stockholders	**$ 85,356**	$ 149,974
Basic earnings per share attributable to Vishay stockholders	**$ 0.59**	$ 1.04
Diluted earnings per share attributable to Vishay stockholders	**$ 0.59**	$ 1.03
Weighted average shares outstanding - basic	**144,831**	144,602
Weighted average shares outstanding - diluted	**145,221**	145,114
Cash dividends per share	**$ 0.285**	$ 0.275

See accompanying notes.

VISHAY INTERTECHNOLOGY, INC.
Consolidated Statements of Comprehensive Income
(Unaudited - In thousands)

	Nine fiscal months ended October 3, 2020	Nine fiscal months ended September 28, 2019
Net earnings	**$ 85,940**	$ 150,641
Other comprehensive income (loss), net of tax		
Pension and other post-retirement actuarial items	**5,247**	4,448
Foreign currency translation adjustment	**18,059**	(25,609)
Other comprehensive income	**23,306**	(21,161)
Comprehensive income	**109,246**	129,480
Less: comprehensive income attributable to noncontrolling interests	**584**	667
Comprehensive income attributable to Vishay stockholders	**$ 108,662**	$ 128,813

See accompanying notes.

VISHAY INTERTECHNOLOGY, INC.
Consolidated Condensed Statements of Cash Flows
(Unaudited - In thousands)

	Nine fiscal months ended October 3, 2020	Nine fiscal months ended September 28, 2019
Operating activities		
Net earnings	**$ 85,940**	$ 150,641
Adjustments to reconcile net earnings to net cash provided by operating activities:		
Depreciation and amortization	**123,776**	122,302
(Gain) loss on disposal of property and equipment	**257**	(168)
Accretion of interest on convertible debt instruments	**10,232**	10,558
Inventory write-offs for obsolescence	**17,891**	19,214
Deferred income taxes	**(1,142)**	(4,481)
Loss on extinguishment of debt	**7,520**	1,307
Other	**3,188**	9,029
Change in U.S. transition tax liability	**(14,757)**	(14,757)
Change in repatriation tax liability	**(16,258)**	(38,814)
Net change in operating assets and liabilities, net of effects of businesses acquired	**(27,408)**	(42,810)
Net cash provided by operating activities	**189,239**	212,021
Investing activities		
Capital expenditures	**(70,801)**	(100,267)
Proceeds from sale of property and equipment	**293**	486
Purchase of businesses, net of cash received	**(25,852)**	(11,862)
Purchase of short-term investments	**(157,177)**	(59,440)
Maturity of short-term investments	**241,016**	79,765
Other investing activities	**(529)**	4,021
Net cash used in investing activities	**(13,050)**	(87,297)
Financing activities		
Issuance costs	**-**	(5,394)
Repurchase of convertible debt instruments	**(148,177)**	(22,695)
Net changes in short-term borrowings	**(110)**	(12)
Dividends paid to common stockholders	**(37,779)**	(36,396)
Dividends paid to Class B common stockholders	**(3,448)**	(3,327)
Distributions to noncontrolling interests	**(600)**	(600)
Cash withholding taxes paid when shares withheld for vested equity awards	**(2,016)**	(2,708)
Net cash used in financing activities	**(192,130)**	(71,132)
Effect of exchange rate changes on cash and cash equivalents	**4,230**	(8,141)
Net increase (decrease) in cash and cash equivalents	**(11,711)**	45,451
Cash and cash equivalents at beginning of period	**694,133**	686,032
Cash and cash equivalents at end of period	**$ 682,422**	$ 731,483

See accompanying notes.

VISHAY INTERTECHNOLOGY, INC.
Consolidated Condensed Statements of Equity
(Unaudited - In thousands, except share and per share amounts)

	Common Stock	Class B Convertible Common Stock	Capital in Excess of Par Value	Retained Earnings (Accumulated Deficit)	Accumulated Other Comprehensive Income (Loss)	Total Vishay Stockholders' Equity	Noncontrolling Interests	Total Equity
Balance at December 31, 2018	$ 13,212	$ 1,210	$ 1,436,011	$ (61,258)	$ (6,791)	$ 1,382,384	$ 2,286	$ 1,384,670
Cumulative effect of accounting change for adoption of ASU 2016-02	-	-	-	23,013	-	23,013	-	23,013
Net earnings	-	-	-	75,459	-	75,459	182	75,641
Other comprehensive income	-	-	-	-	(8,532)	(8,532)	-	(8,532)
Conversion of Class B shares (18 shares)	-	-	-	-	-	-	-	-
Temporary equity reclassification	-	-	3	-	-	3	-	3
Issuance of stock and related tax withholdings for vested restricted stock units (220,718 shares)	22	-	(2,681)	-	-	(2,659)	-	(2,659)
Dividends declared ($0.085 per share)	-	-	15	(12,292)	-	(12,277)	-	(12,277)
Stock compensation expense	-	-	3,536	-	-	3,536	-	3,536
Repurchase of convertible debentures due 2040 and due 2042	-	-	(11,783)	-	-	(11,783)	-	(11,783)
Balance at March 30, 2019	$ 13,234	$ 1,210	$ 1,425,101	$ 24,922	$ (15,323)	$ 1,449,144	$ 2,468	$ 1,451,612
Net earnings	-	-	-	44,477	-	44,477	258	44,735
Other comprehensive income	-	-	-	-	9,007	9,007	-	9,007
Distributions to noncontrolling interests	-	-	-	-	-	-	(600)	(600)
Temporary equity reclassification	-	-	206	-	-	206	-	206
Issuance of stock and related tax withholdings for vested restricted stock units (9,906 shares)	1	-	(50)	-	-	(49)	-	(49)
Dividends declared ($0.095 per share)	-	-	17	(13,740)	-	(13,723)	-	(13,723)
Stock compensation expense	-	-	890	-	-	890	-	890
Balance at June 29, 2019	$ 13,235	$ 1,210	$ 1,426,164	$ 55,659	$ (6,316)	$ 1,489,952	$ 2,126	$ 1,492,078
Net earnings	-	-	-	30,038	-	30,038	227	30,265
Other comprehensive income	-	-	-	-	(21,636)	(21,636)	-	(21,636)
Dividends declared ($0.095 per share)	-	-	18	(13,741)	-	(13,723)	-	(13,723)
Stock compensation expense	-	-	867	-	-	867	-	867
Balance at September 28, 2019	$ 13,235	$ 1,210	$ 1,427,049	$ 71,956	$ (27,952)	$ 1,485,498	$ 2,353	$ 1,487,851

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VISHAY INTERTECHNOLOGY, INC.
Consolidated Condensed Statements of Equity (continued)
(Unaudited - In thousands, except share and per share amounts)

	Common Stock	Class B Convertible Common Stock	Capital in Excess of Par Value	Retained Earnings (Accumulated Deficit)	Accumulated Other Comprehensive Income (Loss)	Total Vishay Stockholders' Equity	Noncontrolling Interests	Total Equity
Balance at December 31, 2019	$ 13,235	$ 1,210	$ 1,425,170	$ 72,180	$ (26,646)	$ 1,485,149	$ 2,540	$ 1,487,689
Cumulative effect of accounting change for adoption of ASU 2016-13 (see Note 1)	-	-	-	(1,070)	-	(1,070)	-	(1,070)
Net earnings	-	-	-	27,219	-	27,219	165	27,384
Other comprehensive income	-	-	-	-	(21,528)	(21,528)	-	(21,528)
Temporary equity reclassification	-	-	174	-	-	174	-	174
Issuance of stock and related tax withholdings for vested restricted stock units (199,251 shares)	20	-	(2,011)	-	-	(1,991)	-	(1,991)
Dividends declared ($0.095 per share)	-	-	18	(13,759)	-	(13,741)	-	(13,741)
Stock compensation expense	-	-	2,998	-	-	2,998	-	2,998
Repurchase of convertible senior debentures due 2041	-	-	(10,089)	-	-	(10,089)	-	(10,089)
Balance at April 4, 2020	$ 13,255	$ 1,210	$ 1,416,260	$ 84,570	$ (48,174)	$ 1,467,121	$ 2,705	$ 1,469,826
Net earnings	-	-	-	24,653	-	24,653	242	24,895
Other comprehensive income	-	-	-	-	21,848	21,848	-	21,848
Distributions to noncontrolling interests	-	-	-	-	-	-	(600)	(600)
Issuance of stock and related tax withholdings for vested restricted stock units (13,141 shares)	1	-	(26)	-	-	(25)	-	(25)
Dividends declared ($0.095 per share)	-	-	18	(13,761)	-	(13,743)	-	(13,743)
Stock compensation expense	-	-	875	-	-	875	-	875
Repurchase of convertible senior notes due 2025	-	-	(4,352)	-	-	(4,352)	-	(4,352)
Balance at July 4, 2020	$ 13,256	$ 1,210	$ 1,412,775	$ 95,462	$ (26,326)	$ 1,496,377	$ 2,347	$ 1,498,724
Net earnings	**-**	**-**	**-**	**33,484**	**-**	**33,484**	**177**	**33,661**
Other comprehensive income	**-**	**-**	**-**	**-**	**22,986**	**22,986**	**-**	**22,986**
Dividends declared ($0.095 per share)	**-**	**-**	**19**	**(13,762)**	**-**	**(13,743)**	**-**	**(13,743)**
Stock compensation expense	**-**	**-**	**732**	**-**	**-**	**732**	**-**	**732**
Repurchase of convertible senior notes due 2025	**-**	**-**	**(3,191)**	**-**	**-**	**(3,191)**	**-**	**(3,191)**
Balance at October 3, 2020	**$ 13,256**	**$ 1,210**	**$ 1,410,335**	**$ 115,184**	**$ (3,340)**	**$ 1,536,645**	**$ 2,524**	**$ 1,539,169**

See accompanying notes.

Note 1 – Basis of Presentation

The accompanying unaudited consolidated condensed financial statements of Vishay Intertechnology, Inc. ("Vishay" or the "Company") have been prepared in accordance with the instructions to Form 10-Q and therefore do not include all information and footnotes necessary for presentation of financial position, results of operations, and cash flows required by accounting principles generally accepted in the United States ("GAAP") for complete financial statements. The information furnished reflects all normal recurring adjustments which are, in the opinion of management, necessary for a fair summary of the financial position, results of operations, and cash flows for the interim periods presented. The financial statements should be read in conjunction with the consolidated financial statements filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2019. The results of operations for the fiscal quarter and nine fiscal months ended October 3, 2020 are not necessarily indicative of the results to be expected for the full year.

The Company reports interim financial information for 13-week periods beginning on a Sunday and ending on a Saturday, except for the first fiscal quarter, which always begins on January 1, and the fourth fiscal quarter, which always ends on December 31. The four fiscal quarters in 2020 end on April 4, 2020, July 4, 2020, October 3, 2020, and December 31, 2020, respectively. The four fiscal quarters in 2019 ended on March 30, 2019, June 29, 2019, September 28, 2019, and December 31, 2019, respectively.

Recently Adopted Accounting Guidance

In June 2016, the Financial Accounting Standards Board ("FASB") issued ASU No. 2016-13, *Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*. The ASU replaces the incurred loss impairment methodology in current GAAP with a methodology that reflects expected credit losses and requires consideration of a broader range of reasonable and supportable information to inform credit loss estimates. The Company adopted the ASU effective January 1, 2020.

Payment terms for the Company's sales are generally less than ninety days. Substantially all of the Company's receivables are collected within twelve months of the transfer of products to the customer and the Company expects this to continue going forward. The credit loss allowance is determined through an analysis of the aging of accounts receivable and assessments of risk that are based on historical trends and an evaluation of the impact of current and projected economic conditions. Receivables from customers with deteriorating financial condition and those over 180 days past due are removed from the pool and evaluated separately. The adoption of ASU 2016-13 on January 1, 2020 had no material impact on the Company's allowance for accounts receivable credit losses.

The Company's cash equivalents, short-term investments, and restricted investments are accounted for as held-to-maturity debt instruments, at amortized cost. Interest income on these instruments is recorded as "Other income" on the consolidated condensed statements of operations and interest receivable is recognized as a separate asset and recorded in "Prepaid expenses and other current assets" on the consolidated condensed balance sheets. The Company has not experienced a credit loss on the principal or interest receivable of its cash equivalents, short-term investments, or restricted investments. The Company pools its cash equivalents, short-term investments, and restricted investments by credit rating of the issuing financial institution and estimates an allowance for credit losses based on the corporate bond default ratios, evaluation of the impact of current and projected economic conditions, and probability of credit loss. The Company recorded a cumulative-effect adjustment of $810 to January 1, 2020 retained earnings to recognize an allowance for credit losses for these financial instruments upon the adoption of ASU 2016-13. The Company does not measure an allowance for credit losses on interest receivable. Any uncollectible interest receivable will be recognized by reversing interest income within the fiscal quarter that the interest becomes uncollectible.

The Company has an immaterial amount of other short-term held-to-maturity debt instruments recorded within "Prepaid expenses and other current assets" on the consolidated condensed balance sheets. The Company analyzes these assets on a separate asset basis and estimates an allowance for credit losses based on historical credit loss rates and an evaluation of the impact of current and projected economic conditions. The Company recorded a cumulative-effect adjustment of $260 to January 1, 2020 retained earnings to recognize an allowance for credit losses for these financial instruments upon the adoption of ASU 2016-13.

Recently Issued Accounting Guidance

In August 2020, the FASB issued ASU No. 2020-06, *Debt — Debt With Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging — Contracts in Entity's Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity's Own Equity*. The ASU simplifies the accounting for certain financial instruments with characteristics of liability and equity, including convertible debt instruments. The ASU reduces the number of accounting models available for convertible debt instruments, requires the use of the if-converted method for the calculation of diluted earnings per share for convertible debt instruments, and increases disclosure requirements. The ASU is effective for the Company for interim and annual periods beginning on or after January 1, 2022, with the ability to early adopt for interim and annual periods beginning on or after January 1, 2021. The Company is currently evaluating the effect of the ASU on its convertible debt instruments.

Reclassifications

Certain prior period amounts have been reclassified to conform to the current financial statement presentation.

Note 2 – Impact of Coronavirus Outbreak

The Company's operations have been impacted by the coronavirus ("COVID-19") outbreak. Some manufacturing facilities were temporarily closed and some are operating at levels less than full capacity. The Company has incurred incremental costs separable from normal operations that are directly related to the outbreak and containment efforts, primarily wages paid to manufacturing employees during government-mandated shut-downs, additional wages and hardship allowances for working during lockdown periods, additional costs of cleaning and disinfecting facilities, costs of additional safety equipment for employees, and temporary housing for employees due to travel restrictions, which were partially offset by government subsidies. The net impact of the costs and subsidies are reported as cost of products sold ($242 and $4,295) and selling, general, and administrative benefits of ($441 and $871) based on employee function on the consolidated condensed statements of operations for the fiscal quarter and nine fiscal months ended October 3, 2020, respectively.

The Company's insurance coverages generally exclude losses incurred due to pandemics. Any amounts that may be received will not be recognized until all contingencies are settled.

(dollars in thousands, except per share amounts)

Note 3 – Leases

The Company leases buildings and machinery and equipment used for manufacturing and/or sales and administrative purposes. The Company is also party to various service, warehousing, and other agreements that it evaluates for potential embedded leases.

The Company leases assets in each region in which it operates. No individual lease is considered significant and there are no leases that have not yet commenced that are considered significant.

The net right of use assets and lease liabilities recognized on the consolidated condensed balance sheets for the Company's operating leases were as follows:

	October 3, 2020	December 31, 2019
Right of use assets		
Operating Leases		
Buildings and improvements	**$ 98,227**	$ 87,689
Machinery and equipment	**5,008**	5,473
Total	**$ 103,235**	$ 93,162
Current lease liabilities		
Operating Leases		
Buildings and improvements	**$ 19,237**	$ 17,410
Machinery and equipment	**2,687**	2,807
Total	**$ 21,924**	$ 20,217
Long-term lease liabilities		
Operating Leases		
Buildings and improvements	**$ 83,742**	$ 75,877
Machinery and equipment	**2,301**	2,634
Total	**$ 86,043**	$ 78,511
Total lease liabilities	**$ 107,967**	$ 98,728

(dollars in thousands, except per share amounts)

Lease expense is classified in the statements of operations based on asset use. Total lease cost recognized on the consolidated condensed statements of operations is as follows:

	Fiscal quarters ended		Nine fiscal months ended	
	October 3, 2020	**September 28, 2019**	**October 3, 2020**	**September 28, 2019**
Lease expense				
Operating lease expense	**$ 5,898**	$ 5,557	**$ 17,310**	$ 16,720
Short-term lease expense	**260**	361	**679**	2,013
Variable lease expense	**11**	9	**40**	30
Total lease expense	**$ 6,169**	$ 5,927	**$ 18,029**	$ 18,763

The Company paid $18,703 and $16,023 for its operating leases in the nine fiscal months ended October 3, 2020 and September 28, 2019, respectively, which are included in operating cash flows on the consolidated condensed statements of cash flows. The weighted-average remaining lease term for the Company's operating leases is 8.9 years and the weighted-average discount rate is 5.9% as of October 3, 2020.

The undiscounted future lease payments for the Company's operating lease liabilities are as follows:

	October 3, 2020
2020 (excluding the nine fiscal months ended October 3, 2020)	$ 5,770
2021	21,720
2022	18,320
2023	15,020
2024	13,728
Thereafter	65,738

The undiscounted future lease payments presented in the table above include payments through the term of the lease, which may include periods beyond the noncancellable term. The difference between the total payments above and the lease liability balance is due to the discount rate used to calculate lease liabilities.

Note 4 – Acquisition Activities

As part of its growth strategy, the Company seeks to expand through targeted acquisitions of other manufacturers of electronic components that have established positions in major markets, reputations for product quality and reliability, and product lines with which the Company has substantial marketing and technical expertise.

On October 1, 2020, the Company acquired the worldwide business and substantially all of the U.S. assets of Applied Thin-Film Products, a California-based, privately-held manufacturer of custom, build-to-print thin film substrates for the microwave, fiber optic, and life science industries. Concurrently, a Chinese subsidiary of Applied Thin-Film Products entered into an agreement to sell certain inventory and equipment to a subsidiary of Vishay for approximately $350 at a later date. The total acquisition price was $25,852, subject to customary post-closing adjustments. Based on its preliminary estimate of their fair values, the Company allocated $10,800 of the purchase price to definite-lived intangible assets. After allocating the purchase price to the assets acquired and liabilities assumed based on a preliminary estimation of their fair values at the date of acquisition, the Company recorded goodwill of $6,309 related to this acquisition. The results and operations of this acquisition have been included in the Resistors segment since October 1, 2020. The inclusion of this acquisition did not have a material impact on the Company's consolidated results for the fiscal quarter and nine fiscal months ended October 3, 2020. The goodwill related to this acquisition is included in the Resistors reporting unit for goodwill impairment testing. The purchase price allocation is preliminary pending finalization of a working capital adjustment.

Had this acquisition occurred as of the beginning of the periods presented in these consolidated condensed financial statements, the pro forma statements of operations would not be materially different than the consolidated condensed statements of operations presented.

The remaining fluctuation in the goodwill account balance is due to foreign currency translation.

(dollars in thousands, except per share amounts)

Note 5 – Restructuring and Related Activities

In the third fiscal quarter of 2019, the Company announced global cost reduction and management rejuvenation programs as part of its continuous efforts to improve efficiency and operating performance.

The programs are primarily designed to reduce manufacturing fixed costs and selling, general, and administrative costs company-wide, and provide management rejuvenation. The Company has incurred charges totalling $24,882, primarily related to cash severance costs, to implement these programs. The Company expects these cost reductions to be fully achieved by December 2020. All participants in the program are now identified.

The following table summarizes the activity to date related to this program:

Expense recorded in 2019	$	24,139
Cash paid		(1,330)
Foreign currency translation		35
Balance at December 31, 2019	$	22,844
Expense recorded in 2020		**743**
Cash paid		**(8,422)**
Foreign currency translation		**655**
Balance at October 3, 2020	**$**	**15,820**

The payment terms vary by country, but generally are paid in a lump sum at cessation of employment. The current portion of the liability is $12,425 and is included in other accrued expenses on the consolidated condensed balance sheet. The non-current portion of the liability is $3,395 and is included in other liabilities on the consolidated condensed balance sheet.

Note 6 – Income Taxes

The provision for income taxes consists of provisions for federal, state, and foreign income taxes. The effective tax rates for the periods ended October 3, 2020 and September 28, 2019 reflect the Company's expected tax rate on reported income from continuing operations before income tax and tax adjustments. The Company operates in a global environment with significant operations in various jurisdictions outside the United States. Accordingly, the consolidated income tax rate is a composite rate reflecting the Company's earnings and the applicable tax rates in the various jurisdictions where the Company operates.

During the second fiscal quarter of 2020, the Company repatriated $104,091 to the United States, and paid withholding and foreign taxes of $16,258, which completes the cash repatriation program that the Company initiated in 2017 in response to the Tax Cuts and Jobs Act enacted in the United States. Substantially all of these amounts were used to repay certain indebtedness.

The Company repurchased a portion of outstanding convertible notes and debentures in the fiscal quarter and nine fiscal months ended October 3, 2020 (see Note 7). The Company recognized tax benefits on the pre-tax loss on early extinguishment of debt. The Company also recognized tax benefits of $1,346 in the nine fiscal months ended October 3, 2020, reflecting the reduction in deferred tax liabilities related to the special tax attributes of the extinguished debentures.

During the nine fiscal months ended October 3, 2020, the liabilities for unrecognized tax benefits decreased by $2,621 on a net basis, primarily due to settlement of an audit and the expiration of a statute, partially offset by accruals for current year tax positions and interest.

(dollars in thousands, except per share amounts)

Note 7 – Long-Term Debt

Long-term debt consists of the following:

	October 3, 2020	December 31, 2019
Credit facility	**$ -**	$ -
Convertible senior notes, due 2025	**403,345**	509,128
Convertible senior debentures, due 2040	**129**	126
Convertible senior debentures, due 2041	**1,065**	6,677
Deferred financing costs	**(12,249)**	(16,784)
	392,290	499,147
Less current portion	**-**	-
	$ 392,290	$ 499,147

The following table summarizes some key facts and terms regarding the outstanding convertible debt instruments as of October 3, 2020:

	Convertible Senior Notes Due 2025	Convertible Senior Debentures Due 2040	Convertible Senior Debentures Due 2041
Issuance date	June 12, 2018	November 9, 2010	May 13, 2011
Maturity date	June 15, 2025	November 15, 2040	May 15, 2041
Principal amount as of October 3, 2020	$ 465,344	$ 300	$ 2,640
Cash coupon rate (per annum)	2.25%	2.25%	2.25%
Nonconvertible debt borrowing rate at issuance (per annum)	5.50%	8.00%	8.375%
Conversion rate effective September 10, 2020 (per $1 principal amount)	31.8674	81.4200	59.4161
Effective conversion price effective September 10, 2020 (per share)	$ 31.38	$ 12.28	$ 16.83
130% of the conversion price (per share)	$ 40.79	$ 15.96	$ 21.88
Call date	n/a	November 20, 2020	May 20, 2021

The terms of the convertible senior debentures due 2040 and due 2041 are generally congruent.

Prior to three months before the maturity date, the holders may convert their convertible senior debentures due 2040 and due 2041 only under the following circumstances: (1) during any fiscal quarter after the first full quarter subsequent to issuance, if the sale price of Vishay common stock reaches 130% of the conversion price for a specified period; (2) the trading price of the debentures falls below 98% of the product of the sale price of Vishay's common stock and the conversion rate for a specified period; (3) Vishay calls any or all of the debentures for redemption, at any time prior to the close of business on the third scheduled trading day immediately preceding the redemption date; or (4) upon the occurrence of specified corporate events. The convertible senior debentures due 2040 and due 2041 are not currently convertible.

Prior to December 15, 2024, the holders of the convertible senior notes due 2025 may convert their notes only under the following circumstances: (1) during any fiscal quarter after the fiscal quarter ending September 29, 2018, if the sale price of Vishay common stock reaches 130% of the conversion price for a specified period; (2) the trading price of the notes falls below 98% of the product of the sale price of Vishay's common stock and the conversion rate for a specified period; or (3) upon the occurrence of specified corporate transactions. The convertible senior notes due 2025 are not currently convertible.

Vishay may not redeem the convertible senior debentures prior to the respective call dates. On or after the call date and prior to the maturity date, Vishay may redeem for cash all or part of the debentures at a redemption price equal to 100% of the principal amount of the debentures to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date, if the last reported sale price of Vishay’s common stock has been at least 150% of the conversion price then in effect for at least 20 trading days during any 30 consecutive trading day period prior to the date on which Vishay provides notice of redemption.

The quarterly cash dividend program of the Company results in adjustments to the conversion rate and effective conversion price for the convertible debt instruments effective as of the ex-dividend date of each cash dividend. The conversion rate and effective conversion price for the convertible senior notes due 2025 is adjusted for quarterly cash dividends to the extent such dividends exceed $0.085 per share of common stock.

GAAP requires an issuer to separately account for the liability and equity components of the instrument in a manner that reflects the issuer's nonconvertible debt borrowing rate when interest costs are recognized in subsequent periods. The resulting discount on the debt is amortized as non-cash interest expense in future periods.

(dollars in thousands, except per share amounts)

The carrying values of the liability and equity components of the convertible debt instruments are reflected in the Company's consolidated condensed balance sheets as follows:

	Principal amount of the debt instruments	Unamortized discount	Carrying value of liability component	Equity component (including temporary equity) -net carrying value
October 3, 2020				
Convertible senior notes due 2025	**$ 465,344**	**(61,999)**	**$ 403,345**	**$ 66,127**
Convertible senior debentures due 2040 and due 2041	**$ 2,940**	**(1,746)**	**$ 1,194**	**$ 1,216**
Total	**$ 468,284**	**$ (63,745)**	**$ 404,539**	**$ 67,343**
December 31, 2019				
Convertible senior notes due 2025	$ 600,000	(90,872)	$ 509,128	$ 85,262
Convertible senior debentures due 2040 and due 2041	$ 17,190	(10,387)	$ 6,803	$ 7,129
Total	$ 617,190	$ (101,259)	$ 515,931	$ 92,391

Interest is payable on the convertible debt instruments semi-annually at the cash coupon rate; however, the remaining debt discount is being amortized as additional non-cash interest expense using an effective annual interest rate equal to the Company's estimated nonconvertible debt borrowing rate at the time of issuance. In addition to ordinary interest, contingent interest will accrue in certain circumstances relating to the trading price of the convertible senior debentures due 2040 and due 2041 and under certain other circumstances, beginning in 2020 and 2021, respectively. The convertible senior notes due 2025 do not possess contingent interest features.

Interest expense related to the convertible debt instruments is reflected on the consolidated condensed statements of operations for the fiscal quarters ended:

	Contractual coupon interest	Non-cash amortization of debt discount	Other non-cash interest expense	Total interest expense related to the debt instruments
October 3, 2020				
Convertible senior notes due 2025	**$ 2,839**	**3,099**	**382**	**$ 6,320**
Convertible senior debentures	**$ 16**	**8**	**-**	**$ 24**
Total	**$ 2,855**	**$ 3,107**	**$ 382**	**$ 6,344**
September 28, 2019				
Convertible senior notes due 2025	$ 3,375	3,520	454	$ 7,349
Convertible senior debentures	$ 118	53	(8)	$ 163
Total	$ 3,493	$ 3,573	$ 446	$ 7,512

(dollars in thousands, except per share amounts)

Interest expense related to the convertible debt instruments is reflected on the consolidated condensed statements of operations for the nine fiscal months ended:

	Contractual coupon interest	Non-cash amortization of debt discount	Other non-cash interest expense	Total interest expense related to the debt instruments
October 3, 2020				
Convertible senior notes due 2025	**$ 9,480**	**10,195**	**1,271**	**$ 20,946**
Convertible senior debentures	**$ 76**	**37**	**-**	**$ 113**
Total	**$ 9,556**	**$ 10,232**	**$ 1,271**	**$ 21,059**
September 28, 2019				
Convertible senior notes due 2025	$ 10,125	10,388	1,362	$ 21,875
Convertible senior debentures	$ 385	170	(26)	$ 529
Total	$ 10,510	$ 10,558	$ 1,336	$ 22,404

Other non-cash interest expense includes amortization of deferred financing costs and changes in the value of embedded derivative liabilities.

The Company used cash to repurchase $58,886 and $134,656 principal amount of convertible senior notes due 2025 in the fiscal quarter and nine fiscal months ending October 3, 2020, respectively. The net carrying value of the debentures repurchased was $50,922 and $115,978, respectively. In accordance with the authoritative accounting guidance for convertible debt, the aggregate repurchase payments in the fiscal quarter and nine fiscal months ending October 3, 2020 of $57,652 and $128,328, respectively, were allocated between the liability ($53,531 and $118,587, respectively) and equity ($4,121 and $9,741, respectively) components of the convertible notes, using the Company's nonconvertible debt borrowing rate at the time of the repurchases. As a result, the Company recognized losses on extinguishment of convertible notes of $3,454 and $4,600, including the write-off of unamortized debt issuance costs in the fiscal quarter and nine fiscal months ended October 3, 2020, respectively.

The Company used cash to repurchase $14,250 principal amount of convertible senior debentures due 2041 in the first fiscal quarter of 2020. The net carrying value of the debentures repurchased was $5,645. The aggregate repurchase payment of $19,849 was allocated between the liability ($8,452) and equity ($11,397) components of the convertible debentures, using the Company's nonconvertible debt borrowing rate at the time of the repurchase. As a result, the Company recognized a loss on extinguishment of convertible debentures of $2,920, including the write-off of unamortized debt issuance costs in the first fiscal quarter of 2020.

(dollars in thousands, except per share amounts)

Note 8 – Revenue Recognition

Sales returns and allowances accrual activity is shown below:

	Fiscal quarters ended		Nine fiscal months ended	
	October 3, 2020	**September 28, 2019**	**October 3, 2020**	**September 28, 2019**
Beginning balance	**$ 39,432**	$ 44,382	**$ 40,508**	$ 42,663
Sales allowances	**22,190**	26,403	**64,046**	83,517
Credits issued	**(27,610)**	(34,937)	**(70,583)**	(90,269)
Foreign currency	**534**	(449)	**575**	(512)
Ending balance	**$ 34,546**	$ 35,399	**$ 34,546**	$ 35,399

(dollars in thousands, except per share amounts)

Note 9 – Accumulated Other Comprehensive Income (Loss)

The cumulative balance of each component of other comprehensive income (loss) and the income tax effects allocated to each component are as follows:

	Pension and other post-retirement actuarial items	Currency translation adjustment	Total
Balance at January 1, 2020	$ (68,020)	$ 41,374	**$ (26,646)**
Other comprehensive income before reclassifications	-	18,059	**$ 18,059**
Tax effect	-	-	**$ -**
Other comprehensive income before reclassifications, net of tax	-	18,059	**$ 18,059**
Amounts reclassified out of AOCI	6,835	-	**$ 6,835**
Tax effect	(1,588)	-	**$ (1,588)**
Amounts reclassified out of AOCI, net of tax	5,247	-	**$ 5,247**
Net other comprehensive income	$ 5,247	$ 18,059	**$ 23,306**
Balance at October 3, 2020	**$ (62,773)**	**$ 59,433**	**$ (3,340)**

Reclassifications of pension and other post-retirement actuarial items out of AOCI are included in the computation of net periodic benefit cost. See Note 10 for further information.

(dollars in thousands, except per share amounts)

Note 10 – Pensions and Other Postretirement Benefits

The Company maintains various retirement benefit plans. The service cost component of net periodic pension cost is classified in costs of products sold or selling, general, and administrative expenses on the consolidated condensed statements of operations based on the respective employee's function. The other components of net periodic pension cost are classified as other expense on the consolidated condensed statements of operations.

Defined Benefit Pension Plans

The following table shows the components of the net periodic pension cost for the third fiscal quarters of 2020 and 2019 for the Company's defined benefit pension plans:

	Fiscal quarter ended October 3, 2020		Fiscal quarter ended September 28, 2019	
	U.S. Plans	Non-U.S. Plans	U.S. Plans	Non-U.S. Plans
Net service cost	$ -	$ 1,115	$ -	$ 841
Interest cost	342	961	424	1,271
Expected return on plan assets	-	(504)	-	(483)
Amortization of prior service cost	36	31	36	49
Amortization of losses	298	1,671	118	1,332
Curtailment and settlement losses	-	317	-	499
Net periodic benefit cost	$ 676	$ 3,591	$ 578	$ 3,509

The following table shows the components of the net periodic pension cost for the nine fiscal months ended October 3, 2020 and September 28, 2019 for the Company's defined benefit pension plans:

	Nine fiscal months ended October 3, 2020		Nine fiscal months ended September 28, 2019	
	U.S. Plans	Non-U.S. Plans	U.S. Plans	Non-U.S. Plans
Net service cost	$ -	$ 3,260	$ -	$ 2,538
Interest cost	1,025	2,804	1,272	3,843
Expected return on plan assets	-	(1,490)	-	(1,462)
Amortization of prior service cost	108	91	108	150
Amortization of losses	893	4,851	354	4,035
Curtailment and settlement losses	-	777	-	1,504
Net periodic benefit cost	$ 2,026	$ 10,293	$ 1,734	$ 10,608

(dollars in thousands, except per share amounts)

Other Postretirement Benefits

The following table shows the components of the net periodic benefit cost for the third fiscal quarters of 2020 and 2019 for the Company's other postretirement benefit plans:

	Fiscal quarter ended October 3, 2020		Fiscal quarter ended September 28, 2019	
	U.S. Plans	**Non-U.S. Plans**	**U.S. Plans**	**Non-U.S. Plans**
Service cost	**$ 28**	**$ 73**	$ 36	$ 71
Interest cost	**59**	**16**	77	30
Amortization of losses (gains)	**7**	**33**	(32)	27
Net periodic benefit cost	**$ 94**	**$ 122**	$ 81	$ 128

The following table shows the components of the net periodic pension cost for the nine fiscal months ended October 3, 2020 and September 28, 2019 for the Company's other postretirement benefit plans:

	Nine fiscal months ended October 3, 2020		Nine fiscal months ended September 28, 2019	
	U.S. Plans	**Non-U.S. Plans**	**U.S. Plans**	**Non-U.S. Plans**
Service cost	**$ 84**	**$ 210**	$ 106	$ 215
Interest cost	**177**	**47**	232	90
Amortization of losses (gains)	**20**	**95**	(96)	81
Net periodic benefit cost	**$ 281**	**$ 352**	$ 242	$ 386

(dollars in thousands, except per share amounts)

Note 11 – Stock-Based Compensation

The Company has various stockholder-approved programs which allow for the grant of stock-based compensation to officers, employees, and non-employee directors of the Company.

The amount of compensation cost related to stock-based payment transactions is measured based on the grant-date fair value of the equity instruments issued. The Company determines compensation cost for restricted stock units ("RSUs") and phantom stock units based on the grant-date fair value of the underlying common stock adjusted for expected dividends paid over the required vesting period for non-participating awards. Compensation cost is recognized over the period that an officer, employee, or non-employee director provides service in exchange for the award.

The following table summarizes stock-based compensation expense recognized:

	Fiscal quarters ended		Nine fiscal months ended	
	October 3, 2020	**September 28, 2019**	**October 3, 2020**	**September 28, 2019**
Restricted stock units	**$ 732**	$ 867	**$ 4,390**	5,116
Phantom stock units	**-**	-	**215**	177
Total	**$ 732**	$ 867	**$ 4,605**	5,293

The Company recognizes compensation cost for RSUs that are expected to vest and records cumulative adjustments in the period that the expectation changes.

The following table summarizes unrecognized compensation cost and the weighted average remaining amortization periods at October 3, 2020 *(amortization periods in years)*:

	Unrecognized Compensation Cost	Weighted Average Remaining Amortization Periods
Restricted stock units	**$ 3,430**	**0.9**
Phantom stock units	**-**	**n/a**
Total	**$ 3,430**	

The Company currently expects all performance-based RSUs to vest and all of the associated unrecognized compensation cost for performance-based RSUs presented in the table above to be recognized.

2007 Stock Incentive Plan

The Company's 2007 Stock Incentive Program (the "2007 Program"), as amended and restated, permits the grant of up to 6,500,000 shares of restricted stock, unrestricted stock, RSUs, stock options, and phantom stock units, to officers, employees, and non-employee directors of the Company. Such instruments are available for grant until May 20, 2024.

Restricted Stock Units

RSU activity under the 2007 Program as of October 3, 2020 and changes during the nine fiscal months then ended are presented below *(number of RSUs in thousands)*:

	Number of RSUs	Weighted Average Grant-date Fair Value per Unit
Outstanding:		
January 1, 2020	**842**	**$ 17.93**
Granted	**272**	**18.30**
Vested*	**(308)**	**15.70**
Cancelled or forfeited	**(13)**	**19.06**
Outstanding at October 3, 2020	**793**	**$ 18.90**
Expected to vest at October 3, 2020	**793**	

* The number of RSUs vested includes shares that the Company withheld on behalf of employees to satisfy the statutory tax withholding requirements.

The number of performance-based RSUs that are scheduled to vest increases ratably based on the achievement of defined performance criteria between the established target and maximum levels. RSUs with performance-based vesting criteria are expected to vest as follows *(number of RSUs in thousands)*:

Vesting Date	Expected to Vest	Not Expected to Vest	Total
January 1, 2021	141	-	141
January 1, 2022	174	-	174
January 1, 2023	152	-	152

Phantom Stock Units

The 2007 Program authorizes the grant of phantom stock units to the extent provided for in the Company's employment agreements with certain executives. Each phantom stock unit entitles the recipient to receive a share of common stock at the individual's termination of employment or any other future date specified in the applicable employment agreement. Phantom stock units participate in dividend distribution on the same basis as the Company's common stock and Class B common stock. Dividend equivalents are issued in the form of additional units of phantom stock. The phantom stock units are fully vested at all times.

Phantom stock unit activity under the phantom stock plan as of October 3, 2020 and changes during the nine fiscal months then ended are presented below *(number of phantom stock units in thousands)*:

	Number of units	Grant-date Fair Value per Unit
Outstanding:		
January 1, 2020	**183**	
Granted	**10**	**$ 21.49**
Dividend equivalents issued	**4**	
Outstanding at October 3, 2020	**197**	

Note 12 – Segment Information

Vishay is a global manufacturer and supplier of electronic components. Vishay operates, and its chief operating decision maker makes strategic and operating decisions with regards to assessing performance and allocating resources based on, six reporting segments: MOSFETs, Diodes, Optoelectronic Components, Resistors, Inductors, and Capacitors. These segments represent groupings of product lines based on their functionality:

- Metal oxide semiconductor field-effect transistors ("MOSFETs") function as solid-state switches to control power.
- Diodes route, regulate, and block radio frequency, analog, and power signals; protect systems from surges or electrostatic discharge damage; or provide electromagnetic interference filtering.
- Optoelectronic components emit light, detect light, or do both.
- Resistors are basic components used in all forms of electronic circuitry to adjust and regulate levels of voltage and current.
- Inductors use an internal magnetic field to change alternating current phase and resist alternating current.
- Capacitors store energy and discharge it when needed.

The current six segment alignment reflects a change in reporting structure made during the fourth fiscal quarter of 2019. The fiscal periods ended September 28, 2019 have been recast to separately present Resistors and Inductors.

Vishay's reporting segments generate substantially all of their revenue from product sales to the industrial, automotive, telecommunications, computing, consumer products, power supplies, military and aerospace, and medical end markets. A small portion of revenues is from royalties.

The Company evaluates business segment performance on operating income, exclusive of certain items ("segment operating income"). Only dedicated, direct selling, general, and administrative expenses of the segments are included in the calculation of segment operating income. The Company's calculation of segment operating income excludes such selling, general, and administrative costs as global operations, sales and marketing, information systems, finance and administration groups, as well as restructuring and severance costs, the direct impact of the COVID-19 outbreak, goodwill and long-lived asset impairment charges, and other items. Management believes that evaluating segment performance excluding such items is meaningful because it provides insight with respect to intrinsic operating results of the Company. These items represent reconciling items between segment operating income and consolidated operating income. Business segment assets are the owned or allocated assets used by each business.

The Company also regularly evaluates gross profit by segment to assist in the analysis of consolidated gross profit. The Company considers segment operating income to be the more important metric because it more fully captures the business operations of the segments.

(dollars in thousands, except per share amounts)

The following tables set forth business segment information:

	MOSFETs	Diodes	Optoelectronic Components	Resistors	Inductors	Capacitors	Corporate / Other*	Total
Fiscal quarter ended October 3, 2020:								
Net revenues	**$ 133,976**	**$ 123,744**	**$ 64,955**	**$ 145,362**	**$ 79,399**	**$ 92,724**	**$ -**	**$ 640,160**
Gross profit	**$ 29,649**	**$ 20,843**	**$ 21,289**	**$ 35,186**	**$ 26,597**	**$ 18,387**	**$ (242)**	**$ 151,709**
Segment operating income	**$ 20,148**	**$ 15,828**	**$ 17,184**	**$ 30,127**	**$ 24,106**	**$ 13,703**	**$ (242)**	**$ 120,854**
Fiscal quarter ended September 28, 2019:								
Net revenues	$ 126,747	$ 123,879	$ 50,702	$ 155,119	$ 73,458	$ 98,424	$ -	$ 628,329
Gross profit	$ 30,491	$ 21,138	$ 10,883	$ 42,444	$ 23,450	$ 21,673	$ -	$ 150,079
Segment operating income	$ 21,018	$ 16,420	$ 6,923	$ 36,900	$ 20,797	$ 16,675	$ -	$ 118,733
Nine fiscal months ended October 3, 2020:								
Net revenues	**$ 369,813**	**$ 363,274**	**$ 168,264**	**$ 444,982**	**$ 218,369**	**$ 270,016**	**$ -**	**$1,834,718**
Gross Profit	**$ 84,779**	**$ 65,265**	**$ 47,602**	**$ 112,472**	**$ 69,836**	**$ 53,960**	**$ (4,295)**	**$ 429,619**
Segment Operating Income	**$ 56,408**	**$ 50,064**	**$ 35,818**	**$ 96,891**	**$ 62,129**	**$ 39,297**	**$ (4,295)**	**$ 336,312**
Nine fiscal months ended September 28, 2019:								
Net revenues	$ 392,930	$ 433,761	$ 171,939	$ 509,309	$ 222,122	$ 328,667	$ -	$2,058,728
Gross Profit	$ 98,483	$ 93,487	$ 43,131	$ 151,910	$ 71,268	$ 77,560	$ -	$ 535,839
Segment Operating Income	$ 70,237	$ 78,558	$ 30,655	$ 134,914	$ 63,213	$ 62,402	$ -	$ 439,979

*Amounts reported in Corporate/Other above represent unallocated costs directly related to the COVID-19 outbreak, which are reported as costs of products sold on the consolidated condensed statements of operations.

	Fiscal quarters ended		Nine fiscal months ended	
	October 3, 2020	September 28, 2019	October 3, 2020	September 28, 2019
Reconciliation:				
Segment Operating Income	**$ 120,854**	$ 118,733	**$ 336,312**	$ 439,979
Restructuring and Severance Costs	**-**	(7,255)	**(743)**	(7,255)
Impact of COVID-19 on Selling, General, and Administrative Expenses	**441**	-	**871**	-
Unallocated Selling, General, and Administrative Expenses	**(59,805)**	(60,450)	**(186,742)**	(194,472)
Consolidated Operating Income	**$ 61,490**	$ 51,028	**$ 149,698**	$ 238,252
Unallocated Other Income (Expense)	**(15,766)**	(6,846)	**(38,100)**	(23,234)
Consolidated Income Before Taxes	**$ 45,724**	$ 44,182	**$ 111,598**	$ 215,018

(dollars in thousands, except per share amounts)

The Company has a broad line of products that it sells to OEMs, EMS companies, and independent distributors. The distribution of sales by customer type is shown below:

	Fiscal quarters ended		Nine fiscal months ended	
	October 3, 2020	**September 28, 2019**	**October 3, 2020**	**September 28, 2019**
Distributors	**$ 325,695**	$ 317,385	**$ 980,703**	$ 1,097,365
OEMs	**273,664**	263,983	**725,592**	815,645
EMS companies	**40,801**	46,961	**128,423**	145,718
Total Revenue	**$ 640,160**	$ 628,329	**$ 1,834,718**	$ 2,058,728

Net revenues were attributable to customers in the following regions:

	Fiscal quarters ended		Nine fiscal months ended	
	October 3, 2020	**September 28, 2019**	**October 3, 2020**	**September 28, 2019**
Asia	**$ 270,451**	$ 231,999	**$ 748,160**	$ 737,918
Europe	**213,296**	231,677	**626,276**	765,318
Americas	**156,413**	164,653	**460,282**	555,492
Total Revenue	**$ 640,160**	$ 628,329	**$ 1,834,718**	$ 2,058,728

The Company generates substantially all of its revenue from product sales to end customers in the industrial, automotive, telecommunications, computing, consumer products, power supplies, military and aerospace, and medical end markets. Sales by end market are presented below:

	Fiscal quarters ended		Nine fiscal months ended	
	October 3, 2020	**September 28, 2019**	**October 3, 2020**	**September 28, 2019**
Industrial	**$ 209,473**	$ 205,670	**$ 651,461**	$ 738,043
Automotive	**216,641**	212,222	**552,418**	627,588
Telecommunications	**27,845**	34,409	**91,033**	132,251
Computing	**51,032**	47,923	**151,974**	143,675
Consumer Products	**33,353**	23,401	**76,477**	87,936
Power Supplies	**29,112**	31,103	**86,482**	90,704
Military and Aerospace	**40,582**	41,872	**125,968**	137,281
Medical	**32,122**	31,729	**98,905**	101,250
Total revenue	**$ 640,160**	$ 628,329	**$ 1,834,718**	$ 2,058,728

Note 13 – Earnings Per Share

The following table sets forth the computation of basic and diluted earnings per share attributable to Vishay stockholders *(shares in thousands)*:

	Fiscal quarters ended		Nine fiscal months ended	
	October 3, 2020	September 28, 2019	October 3, 2020	September 28, 2019
Numerator:				
Net earnings attributable to Vishay stockholders	**$ 33,484**	$ 30,038	**$ 85,356**	$ 149,974
Denominator:				
Denominator for basic earnings per share:				
Weighted average shares	**144,658**	144,446	**144,636**	144,421
Outstanding phantom stock units	**196**	182	**195**	181
Adjusted weighted average shares	**144,854**	144,628	**144,831**	144,602
Effect of dilutive securities:				
Convertible debt instruments	**5**	6	**35**	89
Restricted stock units	**338**	393	**355**	423
Dilutive potential common shares	**343**	399	**390**	512
Denominator for diluted earnings per share:				
Adjusted weighted average shares - diluted	**145,197**	145,027	**145,221**	145,114
Basic earnings per share attributable to Vishay stockholders	**$ 0.23**	$ 0.21	**$ 0.59**	$ 1.04
Diluted earnings per share attributable to Vishay stockholders	**$ 0.23**	$ 0.21	**$ 0.59**	$ 1.03

Diluted earnings per share for the periods presented do not reflect the following weighted average potential common shares that would have an antidilutive effect or have unsatisfied performance conditions *(in thousands)*:

	Fiscal quarters ended		Nine fiscal months ended	
	October 3, 2020	September 28, 2019	October 3, 2020	September 28, 2019
Convertible debt instruments:				
Convertible Senior Notes, due 2025	**16,009**	19,066	**17,806**	19,058
Convertible Senior Debentures, due 2041	**156**	1,204	**133**	401
Weighted average other	**325**	315	**346**	315

The Company's convertible debt instruments are only convertible for specified periods upon the occurrence of certain events. The Company's convertible debt instruments are not currently convertible. In periods that the convertible debt instruments are not convertible, the certain conditions which could trigger conversion of the debt instruments have been deemed to be non-substantive, and accordingly, the Company assumes the conversion of these instruments in its diluted earnings per share computation during periods in which they are dilutive.

At the direction of its Board of Directors, the Company intends, upon conversion, to repay the principal amounts of any of the convertible debt instruments in cash and settle any additional amounts in shares of Vishay common stock. Accordingly, the convertible instruments are included in the diluted earnings per share computation using the "treasury stock method" (similar to options and warrants) rather than the "if converted method" otherwise required for convertible debt. Under the "treasury stock method," Vishay calculates the number of shares issuable under the terms of the debentures based on the average market price of Vishay common stock during the period, and that number is included in the total diluted shares figure for the period. If the average market price is less than $12.28, no shares are included in the diluted earnings per share computation for the convertible senior debentures due 2040, if the average market price is less than $16.83, no shares are included in the diluted earnings per share computation for the convertible senior debentures due 2041, and if the average market price is less than $31.38, no shares are included in the diluted earnings per share computation for the convertible senior notes due 2025.

(dollars in thousands, except per share amounts)

Note 14 – Fair Value Measurements

The fair value measurement accounting guidance establishes a valuation hierarchy of the inputs used to measure fair value. This hierarchy prioritizes the inputs to valuation techniques used to measure fair value into three broad levels. The following is a brief description of those three levels:

Level 1: Observable inputs such as quoted prices (unadjusted) in active markets for identical assets or liabilities.

Level 2: Inputs other than quoted prices that are observable for the asset or liability, either directly or indirectly. These include quoted prices for similar assets or liabilities in active markets and quoted prices for identical or similar assets or liabilities in markets that are not active.

Level 3: Unobservable inputs that reflect the Company's own assumptions.

An asset or liability's classification within the hierarchy is determined based on the lowest level input that is significant to the fair value measurement. There have been no changes in the classification of any financial instruments within the fair value hierarchy in the periods presented.

The following table provides the financial assets and liabilities carried at fair value measured on a recurring basis:

	Total Fair Value	Level 1	Level 2	Level 3
October 3, 2020				
Assets:				
Assets held in rabbi trusts	**$ 54,972**	$ 37,029	$ 17,943	$ -
Available for sale securities	**$ 4,643**	4,643	-	-
	$ 59,615	**$ 41,672**	**$ 17,943**	**$ -**
December 31, 2019				
Assets:				
Assets held in rabbi trusts	$ 52,148	$ 34,280	17,868	$ -
Available for sale securities	$ 4,405	4,405	-	-
	$ 56,553	$ 38,685	$ 17,868	$ -

As described in Note 7, the Company allocated the aggregate repurchase payment of convertible senior debt instruments between the associated liability and equity components of the repurchased convertible senior debt instruments based on a nonrecurring fair value measurement of the convertible senior debt instruments immediately prior to the repurchase. The nonrecurring fair value measurement is considered a Level 3 measurement. See Note 7 for further information on the measurement and input.

The Company maintains non-qualified trusts, referred to as "rabbi" trusts, to fund payments under deferred compensation and non-qualified pension plans. Rabbi trust assets consist primarily of marketable securities, classified as available-for-sale and company-owned life insurance assets. The marketable securities held in the rabbi trusts are valued using quoted market prices on the last business day of the period. The company-owned life insurance assets are valued in consultation with the Company's insurance brokers using the value of underlying assets of the insurance contracts. The fair value measurement of the marketable securities held in the rabbi trust is considered a Level 1 measurement and the measurement of the company-owned life insurance assets is considered a Level 2 measurement within the fair value hierarchy.

The Company holds investments in equity securities that are intended to fund a portion of its pension and other postretirement benefit obligations outside of the United States. The investments are valued based on quoted market prices on the last business day of the period. The fair value measurement of the investments is considered a Level 1 measurement within the fair value hierarchy.

The Company enters into forward contracts with highly-rated financial institutions to mitigate the foreign currency risk associated with intercompany loans denominated in a currency other than the legal entity's functional currency. The notional amount of the forward contracts was $100,000 as of October 3, 2020. The forward contracts are short-term in nature and are expected to be renewed at the Company's discretion until the intercompany loans are repaid. We have not designated the forward contracts as hedges for accounting purposes, and as such the change in the fair value of the contracts is recognized in the consolidated condensed statement of operations as a component of other income (expense). The Company estimates the fair value of the forward contracts based on applicable and commonly used pricing models using current market information and is considered a Level 2 measurement within the fair value hierarchy. The value of the forward contracts was immaterial as of October 3, 2020. The Company does not utilize derivatives or other financial instruments for trading or other speculative purposes.

The fair value of the long-term debt, excluding the derivative liabilities and deferred financing costs, at October 3, 2020 and December 31, 2019 is approximately $460,500 and $632,200, respectively, compared to its carrying value, excluding the derivative liabilities and deferred financing costs, of $404,539 and $515,931, respectively. The Company estimates the fair value of its long-term debt using a combination of quoted market prices for similar financing arrangements and expected future payments discounted at risk-adjusted rates, which are considered Level 2 inputs.

At October 3, 2020 and December 31, 2019, the Company’s short-term investments were comprised of time deposits with financial institutions that have maturities that exceed 90 days from the date of acquisition; however they all mature within one year from the respective balance sheet dates. The Company's short-term investments are accounted for as held-to-maturity debt instruments, at amortized cost, which approximates their fair value. The investments are funded with excess cash not expected to be needed for operations prior to maturity; therefore, the Company believes it has the intent and ability to hold the short-term investments until maturity. At each reporting date, the Company performs an evaluation to determine if any unrealized losses are other-than-temporary. No other-than-temporary impairments have been recognized on these securities, and there are no unrecognized holding gains or losses for these securities during the periods presented. There have been no transfers to or from the held-to-maturity classification. All decreases in the account balance are due to returns of principal at the securities’ maturity dates. Interest on the securities is recognized as interest income when earned.

At October 3, 2020 and December 31, 2019, the Company’s cash and cash equivalents were comprised of demand deposits, time deposits with maturities of three months or less when purchased, and money market funds. The Company estimates the fair value of its cash, cash equivalents, and short-term investments using level 2 inputs. Based on the current interest rates for similar investments with comparable credit risk and time to maturity, the fair value of the Company's cash, cash equivalents, and held-to-maturity short-term investments approximate the carrying amounts reported in the consolidated condensed balance sheets.

The Company’s financial instruments also include accounts receivable, short-term notes payable, and accounts payable. The carrying amounts for these financial instruments reported in the consolidated condensed balance sheets approximate their fair values.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

This Management's Discussion and Analysis ("MD&A") is intended to provide an understanding of Vishay's financial condition, results of operations and cash flows by focusing on changes in certain key measures from period to period. The MD&A should be read in conjunction with our Consolidated Condensed Financial Statements and accompanying Notes included in Item 1. This discussion contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of various factors, including those discussed in our Annual Report on Form 10-K, particularly in Item 1A. "Risk Factors," filed with the Securities and Exchange Commission on February 14, 2020.

Overview

Vishay Intertechnology, Inc. ("Vishay," "we," "us," or "our") is a global manufacturer and supplier of discrete semiconductors and passive components, including power MOSFETs, power integrated circuits, transistors, diodes, optoelectronic components, resistors, capacitors, and inductors. Discrete semiconductors and passive components manufactured by Vishay are used in virtually all types of electronic products, including those in the industrial, computing, automotive, consumer electronic products, telecommunications, power supplies, military/aerospace, and medical industries.

We operate in six product segments: MOSFETs, Diodes, Optoelectronic Components, Resistors, Inductors, and Capacitors. The current six segment alignment reflects a change in reporting structure made during the fourth fiscal quarter of 2019. Results presented herein for the first through third fiscal quarters of 2019 have been recast to separately present Resistors and Inductors.

We are focused on enhancing stockholder value by growing our business and improving earnings per share. Since 1985, we have pursued a business strategy of growth through focused research and development and acquisitions. We plan to continue to grow our business through intensified internal growth supplemented by opportunistic acquisitions, while at the same time maintaining a prudent capital structure. To foster intensified internal growth, we have increased our worldwide R&D and engineering technical staff; we are expanding critical manufacturing capacities; we are increasing our technical field sales force in Asia to increase our market access to the industrial segment and increase the design-in of our products in local markets; and we are directing increased funding and focus on developing products to capitalize on the connectivity, mobility, and sustainability growth drivers of our business. In addition to our growth plan, we also have opportunistically repurchased our stock and, as further described below, reduced dilution risks by repurchasing a portion of our convertible senior debentures.

In 2014, our Board of Directors instituted a quarterly dividend payment program and declared the first cash dividend in the history of Vishay. We have paid dividends each quarter since the first fiscal quarter of 2014, and further increased the quarterly cash dividend to $0.095 per share in the second fiscal quarter of 2019.

On May 20, 2020, our Board of Directors authorized a program to repurchase up to $200 million of the outstanding convertible senior notes due 2025 in open market repurchases or through privately negotiated transactions. Such transactions provide us more flexibility to adjust our debt levels if necessary. We repurchased $134.7 million principal amount of convertible senior notes in the nine fiscal months ended October 3, 2020. We also continue to repurchase convertible senior debentures in 2020, further reducing the principal amount of outstanding convertible senior debentures to $2.9 million.

Our business and operating results have been and will continue to be impacted by worldwide economic conditions. Our revenues are dependent on end markets that are impacted by consumer and industrial demand, and our operating results can be adversely affected by reduced demand in those global markets. The worldwide economy and, specifically, our business have been impacted by the outbreak of the coronavirus ("COVID-19"). The outbreak has significantly impacted the global market, including our customers, suppliers, and shipping partners, which has impacted our net revenues. We have also incurred incremental costs separable from normal operations that are directly attributable to the outbreak and containment efforts, primarily salaries and wages for employees impacted by quarantines and additional safety measures, including masks and temperature scanners, which were partially offset by government subsidies. The net impact of the costs and subsidies are classified as cost of products sold ($0.2 million and $4.3 million) and selling, general, and administrative expenses (benefits) ($(0.4) million and $(0.9) million) based on employee function on the consolidated condensed statements of operations for the fiscal quarter and nine fiscal months ended October 3, 2020, respectively. We exclude from the amounts reported above indirect financial changes from the outbreak of COVID-19 such as general macroeconomic effects and higher shipping costs due to reduced shipping capacity.

We believe the economic impact of the COVID-19 outbreak on Vishay will be temporary. We have significant liquidity to withstand the temporary disruptions in the economic environment. However, we continue to closely monitor our fixed costs, capital expenditure plans, inventory, and capital resources to respond to changing conditions and to ensure we have the management, business processes, and resources to meet our future needs. We will react quickly and professionally to changes in demand to minimize manufacturing inefficiencies and excess inventory build. In the third fiscal quarter of 2019, we announced global cost reduction and management rejuvenation programs as part of our continuous efforts to improve efficiency and operating performance, which we expect to fully implement by the end of 2020. All participants in the program are now identified.

We utilize several financial metrics, including net revenues, gross profit margin, segment operating income, end-of-period backlog, book-to-bill ratio, inventory turnover, change in average selling prices, net cash and short-term investments (debt), and free cash generation to evaluate the performance and assess the future direction of our business. See further discussion in "Financial Metrics" and "Financial Condition, Liquidity, and Capital Resources" below. The outbreak of COVID-19 has impacted almost all key financial metrics. We experienced a strong recovery in orders and sales in the third fiscal quarter of 2020, primarily due to an abrupt recovery of our automotive customers and continued strong demand from our Asian customers. The increases in orders and sales positively impacted almost all key financial metrics.

Net revenues for the fiscal quarter ended October 3, 2020 were $640.2 million, compared to $581.7 million and $628.3 million for the fiscal quarters ended July 4, 2020 and September 28, 2019, respectively. The net earnings attributable to Vishay stockholders for the fiscal quarter ended October 3, 2020 were $33.5 million, or $0.23 per diluted share, compared to $24.7 million, or $0.17 per diluted share for the fiscal quarter ended July 4, 2020, and $30.0 million, or $0.21 per diluted share for the fiscal quarter ended September 28, 2019.

Net revenues for the nine fiscal months ended October 3, 2020 were $1,834.7 million, compared to $2,058.7 million for the nine fiscal months ended September 28, 2019. The net earnings attributable to Vishay stockholders for the nine fiscal months ended October 3, 2020 were $85.4 million, or $0.59 per diluted share, compared to $150.0 million, or $1.03 per diluted share for the nine fiscal months ended September 28, 2019.

We define adjusted net earnings as net earnings determined in accordance with GAAP adjusted for various items that management believes are not indicative of the intrinsic operating performance of our business. We define free cash as the cash flows generated from continuing operations less capital expenditures plus net proceeds from the sale of property and equipment. The reconciliations below include certain financial measures which are not recognized in accordance with GAAP, including adjusted net earnings, adjusted earnings per share, and free cash. These non-GAAP measures should not be viewed as alternatives to GAAP measures of performance or liquidity. Non-GAAP measures such as adjusted net earnings, adjusted earnings per share, and free cash do not have uniform definitions. These measures, as calculated by Vishay, may not be comparable to similarly titled measures used by other companies. Management believes that adjusted net earnings and adjusted earnings per share are meaningful because they provide insight with respect to our intrinsic operating results. Management believes that free cash is a meaningful measure of our ability to fund acquisitions, repay debt, and otherwise enhance stockholder value through stock repurchases or dividends.

The items affecting comparability are (*in thousands, except per share amounts*):

	Fiscal quarters ended			Nine fiscal months ended	
	October 3, 2020	**July 4, 2020**	**September 28, 2019**	**October 3, 2020**	**September 28, 2019**
GAAP net earnings attributable to Vishay stockholders	**$ 33,484**	$ 24,653	$ 30,038	**$ 85,356**	$ 149,974
Reconciling items affecting gross income:					
Impact of COVID-19 outbreak	**242**	923	-	**4,295**	-
Other reconciling items affecting operating income:					
Restructuring and severance costs	**-**	743	7,255	**743**	7,255
Impact of COVID-19 outbreak	**(441)**	(747)	-	**(871)**	-
Reconciling items affecting other income (expense):					
Loss on early extinguishment of debt	**3,454**	1,146	-	**7,520**	1,307
Reconciling items affecting tax expense:					
Effects of tax-basis foreign exchange gain	**$ -**	$ -	$ -	**$ -**	$ 7,554
Effects of cash repatriation program	**-**	(190)	2,604	**(190)**	1,971
Change in deferred taxes due to early extinguishment of debt	**-**	-	-	**(1,346)**	(1,312)
Tax effects of pre-tax items above	**(716)**	(589)	(1,644)	**(2,787)**	(1,934)
Adjusted net earnings	**$ 36,023**	$ 25,939	$ 38,253	**$ 92,720**	$ 164,815
Adjusted weighted average diluted shares outstanding	**145,197**	145,170	145,027	**145,221**	145,114
Adjusted earnings per diluted share	**$ 0.25**	$ 0.18	$ 0.26	**$ 0.64**	$ 1.14

Although the term "free cash" is not defined in GAAP, each of the elements used to calculate free cash for the year-to-date period is presented as a line item on the face of our consolidated condensed statement of cash flows prepared in accordance with GAAP and the quarterly amounts are derived from the year-to-date GAAP statements as of the beginning and end of the respective quarter.

	Fiscal quarters ended			Nine fiscal months ended	
	October 3, 2020	**July 4, 2020**	**September 28, 2019**	**October 3, 2020**	**September 28, 2019**
Net cash provided by continuing operating activities	**$ 64,330**	$ 90,431	$ 76,202	**$ 189,239**	$ 212,021
Proceeds from sale of property and equipment	**63**	177	22	**293**	486
Less: Capital expenditures	**(21,969)**	(24,504)	(30,119)	**(70,801)**	(100,267)
Free cash	**$ 42,424**	$ 66,104	$ 46,105	**$ 118,731**	$ 112,240

Our results for the fiscal quarter ended October 3, 2020 represent the strong recovery in sales we experienced following the fiscal quarter ended July 4, 2020, which was severely negatively impacted by the COVID-19 outbreak. Our results for the fiscal quarter September 28, 2019 represent the effects of the normalization of demand that we began to experience in the fourth fiscal quarter of 2018 and accelerated through 2019 as supply, in general, caught up with demand, and customers, particularly distributors, significantly reduced their orders as they decreased their inventory. Our percentage of euro-based sales approximates our percentage of euro-based expenses so the foreign currency impact on revenues was substantially offset by the impact on expenses. Our pre-tax results were consistent with expectations based on our business model.

Our free cash results were significantly impacted by the payment of cash taxes related to the cash repatriated to the U.S. in the second fiscal quarter of 2020 of $16.3 million and the second and third fiscal quarters of 2019 of $20.5 million and $18.3 million, respectively, pursuant to the cash repatriation program that we initiated in 2017 in response to the Tax Cuts and Jobs Act ("TCJA") enacted in the United States and the installment payments of the TCJA transition tax of $14.8 million in the third fiscal quarter of 2020 and the second fiscal quarter of 2019.

Financial Metrics

We utilize several financial metrics to evaluate the performance and assess the future direction of our business. These key financial measures and metrics include net revenues, gross profit margin, operating margin, segment operating income, end-of-period backlog, and the book-to-bill ratio. We also monitor changes in inventory turnover and our or publicly available average selling prices ("ASP").

Gross profit margin is computed as gross profit as a percentage of net revenues. Gross profit is generally net revenues less costs of products sold, but also deducts certain other period costs, particularly losses on purchase commitments and inventory write-downs. Losses on purchase commitments and inventory write-downs have the impact of reducing gross profit margin in the period of the charge, but result in improved gross profit margins in subsequent periods by reducing costs of products sold as inventory is used. Gross profit margin is clearly a function of net revenues, but also reflects our cost management programs and our ability to contain fixed costs.

Operating margin is computed as gross profit less operating expenses as a percentage of net revenues. We evaluate business segment performance on segment operating margin. Only dedicated, direct selling, general, and administrative expenses of the segments are included in the calculation of segment operating income. Segment operating margin is computed as operating income less items such as restructuring and severance costs, asset write-downs, goodwill and indefinite-lived intangible asset impairments, inventory write-downs, gains or losses on purchase commitments, global operations, sales and marketing, information systems, finance and administrative groups, and other items, expressed as a percentage of net revenues. We believe that evaluating segment performance excluding such items is meaningful because it provides insight with respect to intrinsic operating results of the segment. Operating margin is clearly a function of net revenues, but also reflects our cost management programs and our ability to contain fixed costs.

End-of-period backlog is one indicator of future revenues. We include in our backlog only open orders that we expect to ship in the next twelve months. If demand falls below customers' forecasts, or if customers do not control their inventory effectively, they may cancel or reschedule the shipments that are included in our backlog, in many instances without the payment of any penalty. Therefore, the backlog is not necessarily indicative of the results to be expected for future periods.

An important indicator of demand in our industry is the book-to-bill ratio, which is the ratio of the amount of product ordered during a period as compared with the product that we ship during that period. A book-to-bill ratio that is greater than one indicates that our backlog is building and that we are likely to see increasing revenues in future periods. Conversely, a book-to-bill ratio that is less than one is an indicator of declining demand and may foretell declining revenues.

We focus on our inventory turnover as a measure of how well we are managing our inventory. We define inventory turnover for a financial reporting period as our costs of products sold for the four fiscal quarters ending on the last day of the reporting period divided by our average inventory (computed using each fiscal quarter-end balance) for this same period. A higher level of inventory turnover reflects more efficient use of our capital.

Pricing in our industry can be volatile. Using our and publicly available data, we analyze trends and changes in average selling prices to evaluate likely future pricing. We attempt to offset deterioration in the average selling prices of established products with ongoing cost reduction activities and new product introductions. Our specialty passive components are more resistant to average selling price erosion. All pricing is subject to governing market conditions and is independently set by us.

The quarter-to-quarter trends in these financial metrics can also be an important indicator of the likely direction of our business. The following table shows net revenues, gross profit margin, operating margin, end-of-period backlog, book-to-bill ratio, inventory turnover, and changes in ASP for our business as a whole during the five fiscal quarters beginning with the third fiscal quarter of 2019 through the third fiscal quarter of 2020 *(dollars in thousands)*:

	3rd Quarter 2019	4th Quarter 2019	1st Quarter 2020	2nd Quarter 2020	3rd Quarter 2020
Net revenues	$ 628,329	$ 609,577	$ 612,841	$ 581,717	$ 640,160
Gross profit margin(1)	23.9%	22.2%	24.0%	22.5%	23.7%
Operating margin(2)	8.1%	4.0%	7.7%	7.0%	9.6%
End-of-period backlog	$ 935,400	$ 911,300	$ 1,005,200	$ 914,300	$ 927,900
Book-to-bill ratio	0.72	0.94	1.17	0.82	0.99
Inventory turnover	4.1	4.3	4.2	3.9	4.4
Change in ASP vs. prior quarter	(1.1)%	(0.8)%	(1.1)%	0.1%	(1.1)%

(1) Gross margin for the first, second, and third fiscal quarters of 2020 includes $3.1 million, $0.9 million, and $0.2 million, respectively, of expenses directly related to the COVID-19 outbreak (see Note 2 to our consolidated condensed financial statements).
(2) Operating margin for the third and fourth fiscal quarters of 2019 and second fiscal quarter of 2020 includes $7.3 million, $16.9 million, and $0.7 million, respectively, of restructuring and severance expenses (see Note 5 to our consolidated condensed financial statements). Operating margin for the first, second, and third fiscal quarters of 2020 also includes in total $3.4 million, $0.2 million, and $(0.2) million, respectively, of expenses (benefits) directly related to the COVID-19 outbreak (see Note 2 to our consolidated condensed financial statements).

See "Financial Metrics by Segment" below for net revenues, book-to-bill ratio, and gross profit margin broken out by segment.

Revenues increased versus the prior fiscal quarter and the third fiscal quarter of 2019. An abrupt recovery in demand from our automotive industry customers, which were particularly impacted by plant closures in the second fiscal quarter, substantially increased revenues and orders. The increased orders increased the book-to-bill ratio, while the backlog remained relatively flat due to the simultaneous increase in revenues. Pressure on average selling prices remains consistent with our historical experience.

Gross profit margin increased versus the prior fiscal quarter, but decreased versus the prior year quarter. The fluctuations are primarily volume-driven.

The book-to-bill ratio in the third fiscal quarter of 2020 increased to 0.99 versus 0.82 in the second fiscal quarter of 2020. The book-to-bill ratios in the third fiscal quarter of 2020 for distributors and original equipment manufacturers ("OEM") were 0.99 and 1.01, respectively, versus ratios of 0.75 and 0.93, respectively, during the second fiscal quarter of 2020.

For the fourth fiscal quarter of 2020, we anticipate revenues between $620 million and $660 million at a gross margin of 23.9% plus/minus 70 basis points, assuming a EUR/USD exchange rate of 0.86.

Financial Metrics by Segment

The following table shows net revenues, book-to-bill ratio, gross profit margin, and segment operating margin broken out by segment for the five fiscal quarters beginning with the third fiscal quarter of 2019 through the third fiscal quarter of 2020 *(dollars in thousands)*:

	3rd Quarter 2019	4th Quarter 2019	1st Quarter 2020	2nd Quarter 2020	3rd Quarter 2020
MOSFETs					
Net revenues	$ 126,747	$ 116,215	$ 116,893	$ 118,944	$ 133,976
Book-to-bill ratio	0.54	0.94	1.12	0.97	0.93
Gross profit margin	24.1%	23.7%	24.1%	22.7%	22.1%
Segment operating margin	16.6%	16.1%	16.0%	14.8%	15.0%
Diodes					
Net revenues	$ 123,879	$ 123,382	$ 115,343	$ 124,187	$ 123,744
Book-to-bill ratio	0.57	0.88	1.36	0.61	1.05
Gross profit margin	17.1%	16.3%	16.9%	20.1%	16.8%
Segment operating margin	13.3%	12.6%	12.5%	16.0%	12.8%
Optoelectronic Components					
Net revenues	$ 50,702	$ 51,047	$ 54,179	$ 49,130	$ 64,955
Book-to-bill ratio	0.86	1.11	1.40	0.96	0.97
Gross profit margin	21.5%	20.2%	26.9%	23.9%	32.8%
Segment operating margin	13.7%	12.7%	19.7%	16.2%	26.5%
Resistors					
Net revenues	$ 155,119	$ 147,883	$ 159,208	$ 140,412	$ 145,362
Book-to-bill ratio	0.82	0.95	1.05	0.73	1.06
Gross profit margin	27.4%	23.5%	28.1%	23.2%	24.2%
Segment operating margin	23.8%	19.0%	24.4%	19.9%	20.7%
Inductors					
Net revenues	$ 73,458	$ 76,520	$ 73,785	$ 65,185	$ 79,399
Book-to-bill ratio	0.95	1.05	0.98	0.96	0.96
Gross profit margin	31.9%	33.5%	31.2%	31.1%	33.5%
Segment operating margin	28.3%	30.3%	27.5%	27.2%	30.4%
Capacitors					
Net revenues	$ 98,424	$ 94,530	$ 93,433	$ 83,859	$ 92,724
Book-to-bill ratio	0.76	0.84	1.20	0.90	0.95
Gross profit margin	22.0%	17.9%	21.8%	18.1%	19.8%
Segment operating margin	16.9%	12.3%	16.1%	12.5%	14.8%

Cost Management

We place a strong emphasis on controlling our costs, and use various measures and metrics to evaluate our cost structure.

We define variable costs as expenses that vary with respect to quantity produced. Fixed costs do not vary with respect to quantity produced over the relevant time period. Contributive margin is calculated as net revenue less variable costs. It may be expressed in dollars or as a percentage of net revenue. Management uses this measure to determine the amount of profit to be expected for any change in revenues. While these measures are typical cost accounting measures, none of these measures are recognized in accordance with GAAP. The classification of expenses as either variable or fixed is judgmental and other companies might classify such expenses differently. These measures, as calculated by Vishay, may not be comparable to similarly titled measures used by other companies.

We closely monitor variable costs and seek to achieve the contributive margin in our business model. Over a period of many years, we have generally maintained a contributive margin of between 45% - 47% of revenues. The erosion of average selling prices, particularly of our semiconductor products, that is typical of our industry and inflation negatively impact contributive margin and drive us to continually seek ways to reduce our variable costs. Our variable cost reduction efforts include increasing the efficiency in our production facilities by expending capital for automation, reducing materials costs, materials substitution, increasing wafer size and shrinking dies to maximize efficiency in our semiconductor production processes, and other yield improvement activities.

Our cost management strategy also includes a focus on controlling fixed costs recorded as costs of products sold or selling, general, and administrative expenses and maintaining our break-even point (adjusted for acquisitions). We seek to limit increases in selling, general, and administrative expenses to the rate of inflation, excluding foreign currency exchange effects and substantially independent of sales volume changes. At constant fixed costs, we would expect each $1 million increase in revenues to increase our operating income by approximately $450,000 to $470,000. Sudden changes in the business conditions, such as the current COVID-19 situation, may not allow us to quickly adapt our manufacturing capacity and cost structure.

Occasionally, our ongoing cost containment activities are not adequate and we must take actions to maintain our cost competitiveness. We incurred significant restructuring expenses in our past to reduce our cost structure. Historically, our primary cost reduction technique was through the transfer of production to the extent possible from high-labor-cost countries to lower-labor-cost countries. We believe that our manufacturing footprint is suitable to serve our customers and end markets, while maintaining lower manufacturing costs. Since 2013, our cost reduction programs have primarily focused on reducing fixed costs, including selling, general, and administrative expenses.

We continue to monitor the economic environment and its potential effects on our customers and the end markets that we serve, especially in light of the ongoing COVID-19 situation.

In the third fiscal quarter of 2019, we announced global cost reduction and management rejuvenation programs as part of our continuous efforts to improve efficiency and operating performance. We incurred restructuring expense of $24.9 million since the inception of the programs. We incurred $0.7 million of restructuring expenses during the nine fiscal months ended October 3, 2020.

The programs are primarily designed to reduce manufacturing fixed costs and selling, general, and administrative ("SG&A") costs company-wide, and provide management rejuvenation. The programs in total are expected to lower costs by approximately $15 million annually when fully implemented, of which approximately 50% is expected to be realized as reduced manufacturing fixed costs and 50% is expected to be realized as reduced SG&A expenses. The implementation of these programs will not impact planned research and development activities. All individuals have been identified and such expected costs have been accrued.

We first solicited volunteers to accept a voluntary separation / early retirement offer, which was generally successful. The voluntary separation benefits vary by country and job classification, but generally offer a cash loyalty bonus. A limited number of involuntary terminations were necessary to achieve the cost reduction targets. All participants in the program are now identified. We expect these cost reductions to be fully achieved by December 2020.

No manufacturing facility closures are currently expected pursuant to these programs. Except for these programs, we do not anticipate any other material restructuring activities in 2020. However, a continued sluggish business environment for the electronics industry, a prolonged impact of the COVID-19 outbreak, or a significant economic downturn may require us to implement additional restructuring initiatives.

In uncertain times, we focus on managing our production capacities in accordance with customer requirements, and maintain discipline in terms of our fixed costs and capital expenditures. Even as we seek to manage our costs, we remain cognizant of the future requirements of our demanding markets. We continue to pursue our growth plans through investing in capacities for strategic product lines, and through increasing our resources for R&D, technical marketing, and field application engineering; supplemented by opportunistic acquisitions of specialty businesses.

Our long-term strategy includes growth through the integration of acquired businesses, and GAAP requires plant closure and employee termination costs that we incur in connection with our acquisition activities to be recorded as expenses in our consolidated statement of operations, as such expenses are incurred. We have not incurred any material plant closure or employee termination costs related to any of the businesses acquired since 2011, but we expect to have some level of future restructuring expenses due to acquisitions.

Foreign Currency Translation

We are exposed to foreign currency exchange rate risks, particularly due to transactions in currencies other than the functional currencies of certain subsidiaries. We occasionally use forward exchange contracts to economically hedge a portion of these exposures.

GAAP requires that we identify the "functional currency" of each of our subsidiaries and measure all elements of the financial statements in that functional currency. A subsidiary's functional currency is the currency of the primary economic environment in which it operates. In cases where a subsidiary is relatively self-contained within a particular country, the local currency is generally deemed to be the functional currency. However, a foreign subsidiary that is a direct and integral component or extension of the parent company's operations generally would have the parent company's currency as its functional currency. We have both situations among our subsidiaries.

Foreign Subsidiaries which use the Local Currency as the Functional Currency

We finance our operations in Europe and certain locations in Asia in local currencies, and accordingly, these subsidiaries utilize the local currency as their functional currency. For those subsidiaries where the local currency is the functional currency, assets and liabilities in the consolidated condensed balance sheets have been translated at the rate of exchange as of the balance sheet date. Translation adjustments do not impact the results of operations and are reported as a separate component of stockholders' equity.

For those subsidiaries where the local currency is the functional currency, revenues and expenses incurred in the local currency are translated at the average exchange rate for the year. While the translation of revenues and expenses incurred in the local currency into U.S. dollars does not directly impact the statements of operations, the translation effectively increases or decreases the U.S. dollar equivalent of revenues generated and expenses incurred in those foreign currencies. The dollar generally was weaker during the third fiscal quarter of 2020 compared to the prior fiscal quarter and prior year quarter, with the translation of foreign currency revenues and expenses into U.S. dollars slightly increasing reported revenues and expenses versus the prior fiscal quarter and prior year quarter. The dollar generally was slightly stronger during the first nine fiscal months of 2020 compared to the prior year period, with the translation of foreign currency revenues and expenses into U.S. dollars slightly decreasing reported revenues and expenses versus the prior year period.

Foreign Subsidiaries which use the U.S. Dollar as the Functional Currency

Our operations in Israel and most significant locations in Asia are largely financed in U.S. dollars, and accordingly, these subsidiaries utilize the U.S. dollar as their functional currency. For those foreign subsidiaries where the U.S. dollar is the functional currency, all foreign currency financial statement amounts are remeasured into U.S. dollars. Exchange gains and losses arising from remeasurement of foreign currency-denominated monetary assets and liabilities are included in the results of operations. While these subsidiaries transact most business in U.S. dollars, they may have significant costs, particularly payroll-related, which are incurred in the local currency. The cost of products sold for the third fiscal quarter and first nine fiscal months of 2020 have been slightly unfavorably impacted compared to the prior fiscal quarter and prior year periods by local currency transactions of subsidiaries which use the U.S. dollar as their functional currency.

Results of Operations

Statements of operations' captions as a percentage of net revenues and the effective tax rates were as follows:

	Fiscal quarters ended			Nine fiscal months ended	
	October 3, 2020	**July 4, 2020**	**September 28, 2019**	**October 3, 2020**	**September 28, 2019**
Cost of products sold	76.3%	77.5%	76.1%	76.6%	74.0%
Gross profit	23.7%	22.5%	23.9%	23.4%	26.0%
Selling, general & administrative expenses	14.1%	15.3%	14.6%	15.2%	14.1%
Operating income	9.6%	7.0%	8.1%	8.2%	11.6%
Income before taxes and noncontrolling interest	7.1%	5.1%	7.0%	6.1%	10.4%
Net earnings attributable to Vishay stockholders	5.2%	4.2%	4.8%	4.7%	7.3%
Effective tax rate	26.4%	16.3%	31.5%	23.0%	29.9%

Net Revenues

Net revenues were as follows *(dollars in thousands)*:

	Fiscal quarters ended			Nine fiscal months ended	
	October 3, 2020	**July 4, 2020**	**September 28, 2019**	**October 3, 2020**	**September 28, 2019**
Net revenues	$ 640,160	$ 581,717	$ 628,329	$ 1,834,718	$ 2,058,728

The change in net revenues versus the comparable prior periods was as follows *(dollars in thousands)*:

	Fiscal quarter ended October 3, 2020		Nine fiscal months ended October 3, 2020	
	Change in net revenues	**% change**	**Change in net revenues**	**% change**
July 4, 2020	$ 58,443	10.0%		
September 28, 2019	$ 11,831	1.9%	$ (224,010)	(10.9)%

Changes in net revenues were attributable to the following:

	vs. Prior Quarter	**vs. Prior Year Quarter**	**vs. Prior Year-to-Date**
Change attributable to:			
Change in volume	9.4%	3.4%	(8.6)%
Decrease in average selling prices	(1.1)%	(2.7)%	(2.7)%
Foreign currency effects	1.9%	1.4%	0.0%
Other	(0.2)%	(0.2)%	0.4%
Net change	10.0%	1.9%	(10.9)%

Net revenues for the fiscal quarter and nine fiscal months ended October 3, 2020 have been negatively impacted by the COVID-19 outbreak. Following the second fiscal quarter of 2020, which was significantly impacted by COVID-19 closures, we experienced a strong recovery in orders and revenues in the third fiscal quarter of 2020. The negative impact of COVID-19, particularly through the first six months of 2020, and the declining order rates experienced through 2019 result in decreased net revenues compared to the nine fiscal months ended September 28, 2019.

Gross Profit and Margins

Gross profit margins for the fiscal quarter ended October 3, 2020 were 23.7%, versus 22.5% and 23.9%, for the comparable prior quarter and prior year period, respectively. Gross profit margins for the nine fiscal months ended October 3, 2020 were 23.4%, versus 26.0% for the comparable prior year period. The fluctuations versus the prior fiscal quarter and prior year periods is primarily due to sales volume fluctuations. We were able to offset the negative impacts of inflation, average selling price decline, and temporary higher logistics costs and maintain our contributive margin.

Segments

Analysis of revenues and gross profit margins for our segments is provided below.

MOSFETs

Net revenues and gross profit margin of the MOSFETs segment were as follows *(dollars in thousands):*

	Fiscal quarters ended			Nine fiscal months ended	
	October 3, 2020	July 4, 2020	September 28, 2019	October 3, 2020	September 28, 2019
Net revenues	$ 133,976	$ 118,944	$ 126,747	$ 369,813	$ 392,930
Gross profit margin	22.1%	22.7%	24.1%	22.9%	25.1%

The change in net revenues versus the comparable prior periods was as follows *(dollars in thousands)*:

	Fiscal quarter ended October 3, 2020		Nine fiscal months ended October 3, 2020	
	Change in net revenues	% change	Change in net revenues	% change
July 4, 2020	$ 15,032	12.6%		
September 28, 2019	$ 7,229	5.7%	$ (23,117)	(5.9)%

Changes in MOSFETs segment net revenues were attributable to the following:

	vs. Prior Quarter	vs. Prior Year Quarter	vs. Prior Year-to-Date
Change attributable to:			
Change in volume	12.9%	11.3%	(0.3)%
Decrease in average selling prices	(1.2)%	(5.2)%	(5.7)%
Foreign currency effects	1.1%	0.8%	0.0%
Other	(0.2)%	(1.2)%	0.1%
Net change	12.6%	5.7%	(5.9)%

The MOSFET segment net revenues increased significantly versus the prior fiscal quarter and prior year quarter, but decreased significantly versus the prior year-to-date period. The increase versus the prior fiscal quarter and prior year quarter was primarily due to our automotive customers in Europe and customers of our IC products in Asia, partially offset by decreases from distributor customers in the Europe and Americas regions. The decrease versus the prior year-to-date period is primarily due to the temporary closure of our main manufacturing facility in China during the first fiscal quarter of 2020 due to the COVID-19 outbreak and a significant decrease in revenues from automotive customers in the second fiscal quarter of 2020.

Gross profit margin decreased versus the prior fiscal quarter and the prior year periods. The decrease versus the prior fiscal quarter is primarily due to lower average selling prices, cost inflation, higher metal prices, negative impact of product mix, and the negative impact of inventory reduction, partially offset by higher sales volume. The decrease versus the prior year quarter is primarily due to lower average selling prices, cost inflation, and the negative impact of inventory reduction, partially offset by higher sales volume. The decrease versus the prior year-to-date period is primarily due to lower sales volume, lower average selling prices, cost inflation, and the negative impact of inventory reduction.

We experienced a slight decrease in average selling prices versus the prior fiscal quarter while the price decline accelerated versus the prior year periods.

We continue to invest to expand mid- and long-term manufacturing capacity for strategic product lines.

Diodes

Net revenues and gross profit margin of the Diodes segment were as follows *(dollars in thousands):*

	Fiscal quarters ended			Nine fiscal months ended	
	October 3, 2020	July 4, 2020	September 28, 2019	October 3, 2020	September 28, 2019
Net revenues	$ 123,744	$ 124,187	$ 123,879	$ 363,274	$ 433,761
Gross profit margin	16.8%	20.1%	17.1%	18.0%	21.6%

The change in net revenues versus the comparable prior periods was as follows *(dollars in thousands)*:

	Fiscal quarter ended October 3, 2020		Nine fiscal months ended October 3, 2020	
	Change in net revenues	% change	Change in net revenues	% change
July 4, 2020	$ (443)	(0.4)%		
September 28, 2019	$ (135)	(0.1)%	$ (70,487)	(16.3)%

Changes in Diodes segment net revenues were attributable to the following:

	vs. Prior Quarter	vs. Prior Year Quarter	vs. Prior Year-to-Date
Change attributable to:			
Change in volume	0.6%	4.1%	(12.6)%
Decrease in average selling prices	(1.9)%	(4.5)%	(4.6)%
Foreign currency effects	1.4%	1.0%	0.0%
Other	(0.5)%	(0.7)%	0.9%
Net change	(0.4)%	(0.1)%	(16.3)%

Net revenues of the Diodes segment decreased slightly versus the prior fiscal quarter and prior year quarter, but decreased significantly versus the prior year-to-date period. The decrease versus the prior fiscal quarter was primarily due to a significant decrease in sales to distributor customers, which was almost completely offset by increased sales to OEM customers. The decrease versus the prior year quarter is primarily due to customers in the Americas and Europe regions, which were almost completely offset by customers in the Asia region. The decrease versus the prior year-to-date period is primarily due to the first half of 2020 in which we experienced decreases in all sales channels in the Europe and Americas regions.

Gross profit margin decreased versus the prior fiscal quarter and the prior year periods. The decrease versus the prior fiscal quarter was primarily due to a change in the impact of U.S. tariffs on goods imported from China that positively impacted the prior fiscal quarter and inefficiencies related to a new manufacturing facility, partially offset by cost reduction measures. The decrease versus the prior year periods is primarily due to lower average selling prices and cost inflation, almost fully offset by lower U.S. tariff duties and cost reduction measures. Lower sales volume further decreased the gross profit margin versus the prior year-to-date period.

Average selling prices decreased slightly versus the prior fiscal quarter and decreased moderately versus the prior year periods.

Optoelectronic Components

Net revenues and gross profit margin of the Optoelectronic Components segment were as follows *(dollars in thousands):*

	Fiscal quarters ended			Nine fiscal months ended	
	October 3, 2020	July 4, 2020	September 28, 2019	October 3, 2020	September 28, 2019
Net revenues	$ 64,955	$ 49,130	$ 50,702	$ 168,264	$ 171,939
Gross profit margin	32.8%	23.9%	21.5%	28.3%	25.1%

The change in net revenues versus the comparable prior periods was as follows *(dollars in thousands)*:

	Fiscal quarter ended October 3, 2020		Nine fiscal months ended October 3, 2020	
	Change in net revenues	% change	Change in net revenues	% change
July 4, 2020	$ 15,825	32.2%		
September 28, 2019	$ 14,253	28.1%	$ (3,675)	(2.1)%

Changes in Optoelectronic Components segment net revenues were attributable to the following:

	vs. Prior Quarter	vs. Prior Year Quarter	vs. Prior Year-to-Date
Change attributable to:			
Change in volume	29.5%	25.4%	(1.0)%
Decrease in average selling prices	(0.2)%	(0.6)%	(1.6)%
Foreign currency effects	2.8%	2.4%	0.1%
Other	0.1%	0.9%	0.4%
Net change	32.2%	28.1%	(2.1)%

Net revenues of our Optoelectronic Components segment increased significantly versus the prior fiscal quarter and the prior year quarter, but decreased slightly versus the prior year-to-date period. The increase versus the prior fiscal quarter was due to all regions and sales channels, particularly with OEM customers following the significant capacity loss of our main manufacturing facilities in the prior fiscal quarter due to government regulations in the Philippines and Malaysia due to the COVID-19 outbreak. The increase versus the prior year quarter was primarily due to distribution customers in all regions. The slight decrease versus the year-to-date period is primarily due to a significant decrease in sales to OEM customers, partially offset by a significant increase in sales to distributor customers in Asia.

Gross profit margin increased versus the prior fiscal quarter and the prior year periods. The increase versus the prior fiscal quarter and the prior year quarter resulted from higher sales volume, efficiencies, favorable product mix, and cost reduction measures, partially offset by decreased average selling prices and cost inflation. The increase versus the prior year-to-date period is primarily due to cost reduction measures, a favorable product mix, increases in inventory, and lower obsolescence, partially offset by lower average selling prices and cost inflation.

Average selling prices decreased slightly versus the prior fiscal quarter and prior year periods.

Resistors

Net revenues and gross profit margins of the Resistors segment were as follows *(dollars in thousands)*:

	Fiscal quarters ended			Nine fiscal months ended	
	October 3, 2020	July 4, 2020	September 28, 2019	October 3, 2020	September 28, 2019
Net revenues	$ 145,362	$ 140,412	$ 155,119	$ 444,982	$ 509,309
Gross profit margin	24.2%	23.2%	27.4%	25.3%	29.8%

The change in net revenues versus the comparable prior periods was as follows *(dollars in thousands)*:

	Fiscal quarter ended October 3, 2020		Nine fiscal months ended October 3, 2020	
	Change in net revenues	% change	Change in net revenues	% change
July 4, 2020	$ 4,950	3.5%		
September 28, 2019	$ (9,757)	(6.3)%	$ (64,327)	(12.6)%

Changes in Resistors segment net revenues were attributable to the following:

	vs. Prior Quarter	vs. Prior Year Quarter	vs. Prior Year-to-Date
Change attributable to:			
Change in volume	5.4%	(4.6)%	(11.0)%
Decrease in average selling prices	(0.7)%	(2.5)%	(1.8)%
Foreign currency effects	2.8%	1.9%	(0.1)%
Other	(4.0)%	(1.1)%	0.3%
Net change	3.5%	(6.3)%	(12.6)%

Net revenues of the Resistors segment increased versus the prior fiscal quarter, but decreased significantly versus the prior year periods. The increase versus the prior fiscal quarter is primarily due to automotive and industrial customers in all regions. The decrease versus the prior year periods is primarily due to the Europe and Americas regions. The decrease versus the prior year quarter is primarily due to revenues from industrial, military and aerospace, and medical customers. The decrease versus the prior year-to-date period is primarily due to revenues from distributor, EMS, automotive, and industrial customers.

The gross profit margin increased versus the prior fiscal quarter, but decreased versus the prior year periods. The increase versus the prior fiscal quarter is primarily due to increased sales volume, greater efficiencies, and fixed cost reductions. The decrease versus the prior year periods is due to decreased sales volume, decreased average selling prices, labor and materials cost increases, and higher logistics costs. Fixed cost reductions partially offset the decreases versus the prior year periods.

Average selling prices decreased slightly versus the prior fiscal quarter and prior year periods.

Inductors

Net revenues and gross profit margins of the Inductors segment were as follows *(dollars in thousands):*

	Fiscal quarters ended			Nine fiscal months ended	
	October 3, 2020	**July 4, 2020**	**September 28, 2019**	**October 3, 2020**	**September 28, 2019**
Net revenues	$ 79,399	$ 65,185	$ 73,458	$ 218,369	$ 222,122
Gross profit margin	33.5%	31.1%	31.9%	32.0%	32.1%

The change in net revenues versus the comparable prior periods was as follows *(dollars in thousands)*:

	Fiscal quarters ended October 3, 2020		Nine fiscal months ended October 3, 2020	
	Change in net revenues	**% change**	**Change in net revenues**	**% change**
July 4, 2020	$ 14,214	21.8%		
September 28, 2019	$ 5,941	8.1%	$ (3,753)	(1.7)%

Changes in Inductors segment net revenues were attributable to the following:

	vs. Prior Quarter	**vs. Prior Year Quarter**	**vs. Prior Year-to-Date**
Change attributable to:			
Increase in volume	24.3%	10.3%	0.3%
Decrease in average selling prices	(2.5)%	(2.5)%	(2.0)%
Foreign currency effects	1.1%	0.7%	0.0%
Other	(1.1)%	(0.4)%	0.0%
Net change	21.8%	8.1%	(1.7)%

Net revenues of the Inductors segment increased significantly versus the prior fiscal quarter and prior year quarter, but decreased slightly versus the prior year-to-date period. The increase versus the prior fiscal quarter and prior year quarter is primarily due to the Europe region and automotive customers. The decrease versus the prior year-to-date period is primarily due to the Americas and Europe regions and automotive and medical customers.

The gross profit margin increased versus the prior fiscal quarter and the prior year quarter, but decreased versus the prior year-to-date period. The increase versus the prior fiscal quarter and the prior year quarter is primarily due to higher sales volume, favorable foreign currency exchange rates, manufacturing efficiencies, partially offset by lower average selling prices. The decrease versus the prior year-to-date period is primarily due to lower average selling prices and labor cost increases.

Average selling prices decreased consistent with our historical experience.

We expect long-term growth in this segment, and are positioned to capitalize on future market upturns.

Capacitors

Net revenues and gross profit margin of the Capacitors segment were as follows *(dollars in thousands):*

	Fiscal quarters ended			Nine fiscal months ended	
	October 3, 2020	July 4, 2020	September 28, 2019	October 3, 2020	September 28, 2019
Net revenues	$ 92,724	$ 83,859	$ 98,424	$ 270,016	$ 328,667
Gross profit margin	19.8%	18.1%	22.0%	20.0%	23.6%

The change in net revenues versus the comparable prior periods was as follows *(dollars in thousands)*:

	Fiscal quarter ended October 3, 2020		Nine fiscal months ended October 3, 2020	
	Change in net revenues	% change	Change in net revenues	% change
July 4, 2020	$ 8,865	10.6%		
September 28, 2019	$ (5,700)	(5.8)%	$ (58,651)	(17.8)%

Changes in Capacitors segment net revenues were attributable to the following:

	vs. Prior Quarter	vs. Prior Year Quarter	vs. Prior Year-to-Date
Change attributable to:			
Change in volume	7.6%	(8.9)%	(18.6)%
Increase in average selling prices	0.1%	2.0%	1.4%
Foreign currency effects	2.7%	1.6%	(0.2)%
Other	0.2%	(0.5)%	(0.4)%
Net change	10.6%	(5.8)%	(17.8)%

Net revenues of the Capacitors segment increased significantly versus the prior fiscal quarter, but decreased significantly versus the prior year periods. Net revenues increased versus the prior fiscal quarter primarily in the Europe region and industrial and automotive customers. Net revenues decreased versus the prior year periods in all regions and primarily automotive customers. Decreased sales to industrial and distribution customers also contributed to the decrease versus the prior year-to-date period.

The gross profit margin increased versus the prior fiscal quarter, but decreased versus the prior year periods. The increase versus the prior fiscal quarter is primarily due to higher sales volume and manufacturing efficiencies. The decrease versus the prior year periods is primarily due to lower sales volume, higher shipping costs, and negative impact of product mix, partially offset by cost savings and increased average selling prices.

Average selling prices increased slightly versus the prior fiscal quarter and prior year periods primarily due to increased prices for certain materials that were passed through to our customers.

Selling, General, and Administrative Expenses

Selling, general, and administrative ("SG&A") expenses are summarized as follows *(dollars in thousands):*

	Fiscal quarters ended			Nine fiscal months ended	
	October 3, 2020	**July 4, 2020**	**September 28, 2019**	**October 3, 2020**	**September 28, 2019**
Total SG&A expenses	$ 90,219	$ 89,127	$ 91,796	$ 279,178	$ 290,332
as a percentage of revenues	14.1%	15.3%	14.6%	15.2%	14.1%

SG&A expenses for the fiscal quarters ended October 3, 2020 and July 4, 2020 include $(0.4) million and $(0.7) million, respectively of incremental net costs (benefits) separable from normal operations directly attributable to the COVID-19 outbreak. SG&A expenses increased versus the prior fiscal quarter primarily due to foreign currency effects and less COVID-19 subsidies received. SG&A expenses remain low due to reduced travel and other discretionary spending due to the COVID-19 outbreak.

Other Income (Expense)

Interest expense for the fiscal quarter ended October 3, 2020 decreased $1.0 million and $1.2 million versus the fiscal quarters ended July 4, 2020 and September 28, 2019, respectively. Interest expense for the nine fiscal months ended October 3, 2020 decreased by $0.8 million versus the nine fiscal months ended September 28, 2019. The decreases versus the fiscal quarter ended July 4, 2020 and the prior year periods are primarily due to the repurchases of convertible debt instruments and the lower interest rate environment due to the COVID-19 outbreak.

The following tables analyze the components of the line "Other" on the consolidated condensed statements of operations *(in thousands):*

	Fiscal quarters ended		
	October 3, 2020	**September 28, 2019**	**Change**
Foreign exchange gain (loss)	$ (2,339)	$ 1,113	$ (3,452)
Interest income	514	2,365	(1,851)
Other components of net periodic pension expense	(3,267)	(3,348)	81
Investment income (expense)	201	1,556	(1,355)
Other	(7)	32	(39)
	$ (4,898)	$ 1,718	$ (6,616)

	Fiscal quarters ended		
	October 3, 2020	**July 4, 2020**	**Change**
Foreign exchange gain (loss)	$ (2,339)	$ (1,183)	$ (1,156)
Interest income	514	956	(442)
Other components of net periodic pension expense	(3,267)	(3,063)	(204)
Investment income (expense)	201	1,806	(1,605)
Other	(7)	-	(7)
	$ (4,898)	$ (1,484)	$ (3,414)

	Nine fiscal months ended		
	October 3, 2020	**September 28, 2019**	**Change**
Foreign exchange gain (loss)	$ (1,658)	$ 162	$ (1,820)
Interest income	3,324	6,711	(3,387)
Other components of net periodic pension expense	(9,398)	(10,111)	713
Investment income (expense)	1,570	6,545	(4,975)
Other	(22)	(74)	52
	$ (6,184)	$ 3,233	$ (9,417)

Income Taxes

For the fiscal quarter ended October 3, 2020, our effective tax rate was 26.4%, as compared to 16.3% and 31.5% for the fiscal quarters ended July 4, 2020 and September 28, 2019, respectively. For the nine fiscal months ended October 3, 2020, our effective tax rate was 23.0%, as compared to 29.9% for the nine fiscal months ended September 28, 2019. With the reduction in the U.S. statutory rate to 21% beginning January 1, 2018, we expect that our effective tax rate will now be higher than the U.S. statutory rate, excluding unusual transactions. Historically, the effective tax rates were generally less than the U.S. statutory rate primarily because of earnings in foreign jurisdictions. Discrete tax items impacted our effective tax rate for each fiscal quarter presented.

During the second fiscal quarter of 2020, we repatriated $104.1 million to the United States, and paid withholding and foreign taxes of $16.3 million, which completes the cash repatriation program that we initiated in 2017 in response to the Tax Cuts and Jobs Act enacted in the United States.

The effective tax rates for the nine fiscal months ended October 3, 2020 and September 28, 2019 were impacted by the effect of the repurchase of convertible debentures. We recognized tax benefits of $1.3 million in both the nine fiscal months ended October 3, 2020 and September 28, 2019, reflecting the reduction in deferred tax liabilities related to the special tax attributes of the convertible debentures.

During the nine fiscal months ended October 3, 2020, the liabilities for unrecognized tax benefits decreased by $2.6 million on a net basis, primarily due to settlement of an audit and the expiration of a statute, partially offset by accruals for current year tax positions and interest.

We operate in a global environment with significant operations in various locations outside the United States. Accordingly, the consolidated income tax rate is a composite rate reflecting our earnings and the applicable tax rates in the various locations where we operate. Part of our historical strategy has been to achieve cost savings through the transfer and expansion of manufacturing operations to countries where we can take advantage of lower labor costs and available tax and other government-sponsored incentives. Accordingly, our effective tax rate has historically been less than the U.S. statutory rate, except in years where there are material discrete items.

Additional information about income taxes is included in Note 6 to our consolidated condensed financial statements.

Financial Condition, Liquidity, and Capital Resources

We focus on our ability to generate cash flows from operations. The cash generated from operations is used to fund our capital expenditure plans, and cash in excess of our capital expenditure needs is available to fund our acquisition strategy, to reduce debt levels, and to pay dividends and repurchase stock. We have generated cash flows from operations in excess of $200 million in each of the last 18 years, and cash flows from operations in excess of $100 million in each of the last 25 years.

Management uses a non-GAAP measure, "free cash," to evaluate our ability to fund acquisitions, repay debt, and otherwise enhance stockholder value through stock repurchases or dividends. See "Overview" above for "free cash" definition and reconciliation to GAAP. Vishay has generated positive "free cash" in each of the past 23 years, and "free cash" in excess of $80 million in each of the last 18 years. In this volatile economic environment, we continue to focus on the generation of free cash, including an emphasis on cost controls.

During the second fiscal quarter of 2020, we repatriated $104.1 million to the United States, and paid cash taxes of $16.3 million related to the repatriations. During 2019, we repatriated $188.7 million to the United States, and paid cash taxes of $38.8 million related to the repatriations. The payments of these cash taxes were recorded as operating cash flows and any future cash taxes associated with the TCJA transition tax and related foreign taxes on repatriated cash will generally be recorded as operating cash flows. The payment of these cash taxes significantly impacted cash flows from operations and free cash for the nine fiscal months ended October 3, 2020 and the year ended December 31, 2019. We expect our business to continue to be a reliable generator of free cash, partially offset by such tax payments. There is no assurance, however, that we will be able to continue to generate cash flows from operations and free cash at the same levels, or at all, going forward if the current economic environment worsens.

The $104.1 million repatriation in the second fiscal quarter of 2020 completed our cash repatriation program that we initiated in response to the TCJA. We continue to evaluate the TCJA's provisions and may further adjust our financial and capital structure and business practices accordingly.

We maintain a revolving credit facility, which provides an aggregate commitment of $750 million of revolving loans available until June 5, 2024. The maximum amount available on the revolving credit facility is restricted by the financial covenants described below. The credit facility also provides us the ability to request up to $300 million of incremental facilities, subject to the satisfaction of certain conditions, which could take the form of additional revolving commitments, incremental “term loan A” or “term loan B” facilities, or incremental equivalent debt.

At October 3, 2020, we had no amounts outstanding on our revolving credit facility. We had no amounts outstanding at December 31, 2019. We borrowed $305 million and repaid $305 million on the revolving credit facility during the nine fiscal months ended October 3, 2020. The average outstanding balance on our revolving credit facility calculated at fiscal month-ends was $29.8 million and the highest amount outstanding on our revolving credit facility at a fiscal month end was $61 million during the nine fiscal months ended October 3, 2020.

The revolving credit facility limits or restricts us from, among other things, incurring indebtedness, incurring liens on its respective assets, making investments and acquisitions (assuming our pro forma leverage ratio is greater than 2.75 to 1.00), making asset sales, and paying cash dividends and making other restricted payments (assuming our pro forma leverage ratio is greater than 2.50 to 1.00), and requires us to comply with other covenants, including the maintenance of specific financial ratios.

The financial maintenance covenants include (a) an interest coverage ratio of not less than 2.00 to 1; and (b) a leverage ratio of not more than 3.25 to 1 (and a pro forma ratio of 3.00 to 1 on the date of incurrence of additional debt). The computation of these ratios is prescribed in Article VI of the Credit Agreement between Vishay Intertechnology, Inc. and JPMorgan Chase Bank, N.A., which has been filed with the SEC as Exhibit 10.1 to our current report on Form 8-K filed June 5, 2019.

We were in compliance with all financial covenants under the credit facility at October 3, 2020. Our interest coverage ratio and leverage ratio were 14.22 to 1 and 1.33 to 1, respectively. We expect to continue to be in compliance with these covenants based on current projections. Based on our current EBITDA and outstanding revolver balance, the usable capacity on the revolving credit facility is approximately $672 million.

If we are not in compliance with all of the required financial covenants, the credit facility could be terminated by the lenders, and any amounts then outstanding pursuant to the credit facility could become immediately payable. Additionally, our convertible senior debentures due 2040 and due 2041 and our convertible senior notes due 2025 have cross-default provisions that could accelerate repayment in the event the indebtedness under the credit facility is accelerated.

The credit facility allows an unlimited amount of defined “Investments,” which include certain intercompany transactions and acquisitions, provided our pro forma leverage ratio is equal to or less than 2.75 to 1.00. If our pro forma leverage ratio is greater than 2.75 to 1.00, such Investments are subject to certain limitations.

The credit facility also allows an unlimited amount of defined "Restricted Payments," which include cash dividends and share repurchases, provided our pro forma leverage ratio is equal to or less than 2.50 to 1.00. If our pro forma leverage ratio is greater than 2.50 to 1.00, the credit facility allows such payments up to $100 million per annum (subject to a cap of $300 million for the term of the facility, with up to $25 million of any unused amount of the $100 million per annum base available for use in the next succeeding calendar year).

Borrowings under the credit facility bear interest at LIBOR plus an interest margin. The applicable interest margin is based on our leverage ratio. Based on our current leverage ratio, any new borrowings will bear interest at LIBOR plus 1.50%. The interest rate on any borrowings increases to LIBOR plus 1.75% if our leverage ratio is between 1.50 to 1 and 2.50 to 1 and further increases to 2.00% if our leverage ratio equals or exceeds 2.50 to 1.

We also pay a commitment fee, also based on its leverage ratio, on undrawn amounts. The undrawn commitment fee, based on Vishay's current leverage ratio, is 0.25% per annum. Such undrawn commitment fee increases to 0.30% per annum if our leverage ratio is between 1.50 to 1 and 2.50 to 1 and further increases to 0.35% per annum if our leverage ratio equals or exceeds 2.50 to 1.

The borrowings under the credit facility are secured by a lien on substantially all assets, including accounts receivable, inventory, machinery and equipment, and general intangibles (but excluding real estate, intellectual property registered or licensed solely for use in, or arising solely under the laws of, any country other than the United States, assets located solely outside of the United States and deposit and securities accounts), of Vishay and certain significant subsidiaries located in the United States, and pledges of stock in certain significant domestic and foreign subsidiaries; and are guaranteed by certain significant subsidiaries.

During the nine fiscal months ended October 3, 2020, we repurchased $134.7 million principal amount of convertible senior notes due 2025 for $128.3 million. During the first fiscal quarter of 2020, we repurchased $14.3 million principal amount of convertible senior debentures due 2041 for $19.8 million. We borrowed from our revolving credit facility to fund the repurchases, a portion of which was repaid upon the completion of the cash repatriation plan in the second fiscal quarter. Such transactions provide us more flexibility to adjust our debt levels if necessary.

As of October 3, 2020, substantially all of our cash and cash equivalents and short-term investment were held in countries outside of the United States. Our substantially undrawn credit facility provides us with significant operating liquidity in the United States. We expect to fund any future repurchases of convertible debt instruments, as well as other obligations required to be paid by the U.S. parent company, Vishay Intertechnology, Inc., including cash dividends to stockholders, share repurchases, and principal and interest payments on our debt instruments by borrowing under our revolving credit facility. Our U.S. subsidiaries also have operating cash needs.

Management expects to use the credit facility from time-to-time to meet certain short-term financing needs. We expect that cash on-hand and cash flows from operations will be sufficient to meet our longer-term financing needs related to normal operating requirements, regular dividend payments, and our research and development and capital expenditure plans. Additional acquisition activity, share repurchases, convertible debt repurchases, or conversion of our convertible debentures may require additional borrowing under our credit facility or may otherwise require us to incur additional debt. No principal payments on our debt are due before 2025 and our revolving credit facility expires in June 2024.

Prior to three months before the maturity date, our convertible senior debentures are convertible by the holders under certain circumstances. The convertible senior debentures due 2040 and due 2041 and the convertible senior notes due 2025 are not currently convertible. At the direction of our Board of Directors, we intend, upon conversion, to repay the principal amount of the any convertible debt instruments in cash and settle any additional amounts in shares of our common stock. We intend to finance the principal amount of any converted debentures using borrowings under our credit facility. No conversions have occurred to date.

We invest a portion of our excess cash in highly liquid, high-quality instruments with maturities greater than 90 days, but less than 1 year, which we classify as short-term investments on our consolidated balance sheets. As these investments were funded using a portion of excess cash and represent a significant aspect of our cash management strategy, we include the investments in the calculation of net cash and short-term investments (debt).

The interest rates on our short-term investments vary by location, but can be up to 150 bps higher than the interest rates on our cash accounts. The average interest rate on our short-term investments was 0.59% due to the low interest rate environment in Europe and the U.S. Transactions related to these investments are classified as investing activities on our consolidated condensed statements of cash flows.

The amount of short-term investments at October 3, 2020 is lower than normal due to completed cash repatriation activity.

The following table summarizes the components of net cash and short-term investments (debt) at October 3, 2020 and December 31, 2019 *(in thousands)*:

	October 3, 2020	December 31, 2019
Credit facility	**$ -**	$ -
Convertible senior notes, due 2025*	**403,345**	509,128
Convertible senior debentures, due 2040*	**129**	126
Convertible senior debentures, due 2041*	**1,065**	6,677
Deferred financing costs	**(12,249)**	(16,784)
Total debt	**392,290**	499,147
Cash and cash equivalents	**682,422**	694,133
Short-term investments	**29,538**	108,822
Net cash and short-term investments (debt)	**$ 319,670**	$ 303,808

*Represents the carrying amount of the convertible instruments, which is comprised of the principal amount of the instruments, net of the unamortized discount and the associated embedded derivative liability, when applicable.

"Net cash and short-term investments (debt)" does not have a uniform definition and is not recognized in accordance with GAAP. This measure should not be viewed as an alternative to GAAP measures of performance or liquidity. However, management believes that an analysis of "net cash and short-term investments (debt)" assists investors in understanding aspects of our cash and debt management. The measure, as calculated by us, may not be comparable to similarly titled measures used by other companies.

Our financial condition as of October 3, 2020 continued to be strong, with a current ratio (current assets to current liabilities) of 3.2 to 1, as compared to 3.3 to 1 as of December 31, 2019. The decrease is primarily due to the decrease in short-term investments. Our ratio of total debt to Vishay stockholders' equity was 0.26 to 1 at October 3, 2020, as compared to 0.34 to 1 at December 31, 2019. The decrease in the ratio is primarily due to repurchases of convertible debt instruments.

Cash flows provided by operating activities were $189.2 million for the nine fiscal months ended October 3, 2020, as compared to cash flows provided by operations of $212.0 million for the nine fiscal months ended September 28, 2019.

Cash paid for property and equipment for the nine fiscal months ended October 3, 2020 was $70.8 million, as compared to $100.3 million for the nine fiscal months ended September 28, 2019. We expect capital spending of approximately $110 million in 2020, in accordance with requirements of our markets.

Cash paid for dividends to our common and Class B common stockholders totalled $41.2 million and $39.7 million for the nine fiscal months ended October 3, 2020 and September 28, 2019, respectively. We expect dividend payments in 2020 to total approximately $55.0 million. However, any future dividend declaration and payment remains subject to authorization by our Board of Directors.

Contractual Commitments and Off-Balance Sheet Arrangements

Our Annual Report on Form 10-K for the year ended December 31, 2019 filed on February 14, 2020, includes a table of contractual commitments. Except as described below, there were no material changes to these commitments during the nine fiscal months ended October 3, 2020.

The following tables disclose material changes in contractual commitments during the nine fiscal months ended October 3, 2020. The tables represent our long-term debt obligations and expected cash requirements for interest as of October 3, 2020 and December 31, 2019, reflecting the repurchase of convertible senior notes due 2025 and convertible senior debentures due 2041.

As of October 3, 2020 (in thousands):

		Payments due by period			
	Total	2020	2021 - 2022	2023 - 2024	2025 and beyond
Long-term debt (1)	468,284	-	-	-	468,284
Interest payments on long-term debt (2)	57,559	3,102	24,823	23,755	5,879

(1) Excludes unamortized debt discount associated with our convertible senior notes due 2025 and our convertible senior debentures due 2040 and due 2041.

(2) Excludes the non-cash interest expense related to the amortization of the discount associated with our convertible senior notes due 2025 and our convertible senior debentures due 2040 and due 2041.

As of December 31, 2019 (in thousands):

		Payments due by period			
	Total	2020	2021 - 2022	2023 - 2024	2025 and beyond
Long-term debt (1)	617,190	-	-	-	617,190
Interest payments on long-term debt (2)	90,260	15,762	31,524	30,456	12,518

(1) Excludes unamortized debt discount associated with our convertible senior notes due 2025 and our convertible senior debentures due 2040 and due 2041.

(2) Excludes the non-cash interest expense related to the amortization of the discount associated with our convertible senior notes due 2025 and our convertible senior debentures due 2040 and due 2041.

We do not participate in nor have we created any off-balance sheet variable interest entities or other off-balance sheet financing.

Dividends

In 2014, our Board of Directors approved the initiation of a quarterly cash dividend program. Quarterly cash dividends have been paid in each quarter since the first fiscal quarter of 2014. We expect to continue to pay quarterly dividends, although each dividend is subject to approval by our Board of Directors.

The following table summarizes the quarterly cash dividends declared *(in thousands)*:

Fiscal Period	Amount	Month of Payment
Three fiscal months ended April 4, 2020	$ 13,741	March
Three fiscal months ended July 4, 2020	13,743	June
Three fiscal months ended October 3, 2020	13,743	September

Safe Harbor Statement

From time to time, information provided by us, including but not limited to statements in this report, or other statements made by or on our behalf, may contain "forward-looking" information within the meaning of the Private Securities Litigation Reform Act of 1995. Words such as "believe," "estimate," "will be," "will," "would," "expect," "anticipate," "plan," "project," "intend," "could," "should," or other similar words or expressions often identify forward-looking statements.

Such statements are based on current expectations only, and are subject to certain risks, uncertainties, and assumptions, many of which are beyond our control. Should one or more of these risks or uncertainties materialize, or should underlying assumptions prove incorrect, actual results, performance, or achievements may vary materially from those anticipated, estimated, or projected. Among the factors that could cause actual results to materially differ include: general business and economic conditions; delays or difficulties in implementing our cost reduction strategies; delays or difficulties in expanding our manufacturing capacities; manufacturing or supply chain interruptions or changes in customer demand because of COVID-19; an inability to attract and retain highly qualified personnel; changes in foreign currency exchange rates; uncertainty related to the effects of changes in foreign currency exchange rates; competition and technological changes in our industries; difficulties in new product development; difficulties in identifying suitable acquisition candidates, consummating a transaction on terms which we consider acceptable, and integration and performance of acquired businesses; changes in applicable domestic and foreign tax regulations and uncertainty regarding the same; changes in U.S. and foreign trade regulations and tariffs and uncertainty regarding the same; changes in applicable accounting standards and other factors affecting our operations, markets, capacity to meet demand, products, services, and prices that are set forth in our filings with the SEC, including our annual reports on Form 10-K and our quarterly reports on Form 10-Q. We undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events, or otherwise.

Our 2019 Annual Report on Form 10-K listed various important factors that could cause actual results to differ materially from projected and historic results. We note these factors for investors as permitted by the Private Securities Litigation Reform Act of 1995. Readers can find them in Part I, Item 1A, of that filing under the heading "Risk Factors." You should understand that it is not possible to predict or identify all such factors. Consequently, you should not consider any such list to be a complete set of all potential risks or uncertainties.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

Part II, Item 7A, "Quantitative and Qualitative Disclosures About Market Risk," of our Annual Report on Form 10-K for the year ended December 31, 2019, filed with the SEC on February 14, 2020, describes our exposure to market risks. There have been no material changes to our market risks since December 31, 2019.

Item 4. Controls and Procedures

Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures

An evaluation was performed under the supervision and with the participation of our management, including the Chief Executive Officer ("CEO") and Chief Financial Officer ("CFO"), of the effectiveness of the design and operation of our disclosure controls and procedures, as such term is defined under Rule 13a-15(e) and Rule 15d-15(e) promulgated under the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Based on that evaluation, our CEO and CFO concluded that our disclosure controls and procedures were effective as of the end of the period covered by this quarterly report to ensure that information required to be disclosed in reports that we file or submit under the Exchange Act are: (1) recorded, processed, summarized, and reported within the time periods specified in the SEC's rules and forms; and (2) accumulated and communicated to our management, including our CEO and CFO, as appropriate to allow timely decisions regarding required disclosure.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting during the period covered by this report that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II - OTHER INFORMATION

<u>Item 1.</u> <u>Legal Proceedings</u>

Item 3 of Part I of our Annual Report on Form 10-K for the year ended December 31, 2019, filed with the SEC on February 14, 2020 and Item 1 of Part II of our Quarterly Report on Form 10-Q for the fiscal quarter ended April 4, 2020, filed with the SEC on May 12, 2020 describe certain of our legal proceedings. Except as described below, there have been no material developments to the legal proceedings previously disclosed.

Vishay GSI, Inc. ("VGSI"), a wholly owned subsidiary of the Company, is a direct defendant in two separate, but related, litigation matters: (1) *101 Frost Street Associates, L.P. v. United States Department of Energy et al.*; and (2) *Hicksville Water District v. United States Department of Energy, et al*. VGSI is also a third-party defendant in a third related matter, *United States v Island Transportation Corp. et al.* All three cases are pending in the United State District Court for the Eastern District of New York.

The three cases contain claims for recovery of response costs under the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), and allege that a predecessor's manufacturing operations in Hicksville, New York (the "Site"), between 1960 and 1993, impacted groundwater beneath and downgradient of the Site. The groundwater beneath and downgradient of the Site is part of the New Cassel/Hicksville Groundwater Contamination Site, which was added to the National Priorities List pursuant to CERCLA on September 15, 2011.

Procedurally, the Company has filed an answer in only one of the cases, *United States v. Island Transportation Corp., et al.* However, on August 21, 2020, the United States, which is the plaintiff in that case, advised the court that it had reached settlements in principle with the two direct defendants and requested a 120-day stay to ratify the settlement documents. The request for stay indicated that "the settlements will result in the dismissal of the ancillary claims" including the dismissal of the third-party complaint against VGSI. The Company continues to monitor the status of this matter, and is prepared to vigorously contest the claims should the stay be lifted without the aforementioned settlements in place. As to the remaining two litigation matters, the Company will be vigorously contesting these claims. However, given the still early stages of the litigations and their procedural posture, it is not possible at this time to evaluate the probability of a favorable or unfavorable outcome.

<u>Item 1A.</u> <u>Risk Factors</u>

Except as described below, there have been no material changes to the risk factors we previously disclosed under Item 1A of Part I of our Annual Report on Form 10-K for the year ended December 31, 2019, filed with the SEC on February 14, 2020.

<u>*Our business may be adversely affected by the widespread outbreak of diseases, including the recent COVID-19 outbreak and the mitigation efforts by governments worldwide to control its spread.*</u>

The widespread global outbreak of COVID-19 has adversely affected our business. Impacts have included disruptions in our ability to manufacture products and disruptions in the operations of our customers and modes of shipping. While we are unable to accurately predict the full extent to which the COVID-19 outbreak and the mitigation efforts by governments to attempt to control its spread will have on our business due to numerous uncertainties, thus far the impacts have resulted in increased costs and a reduction in sales to certain regions and end-markets. We cannot predict when the impact of the COVID-19 outbreak will end or when future coronavirus outbreaks will occur.

The potential risks and effects of the COVID-19 outbreak and economic crisis, including potential global or regional recessions or depressions, that could have an adverse effect on our business include, but are not limited to:

- Adverse impact on our customers and supply channels;
- Decrease in sales, product demand and pricing and unfavorable economic and market conditions;
- Increased costs, including higher shipping costs due to reduced shipping capacity;
- Restrictions on our manufacturing, support operations or workforce, or similar limitations for our customers, vendors, and suppliers, that could limit our ability to meet customer demand;
- Potential increased credit risk if customers, distributors, and resellers are unable to pay us, or must delay paying their obligations to us;
- Restrictions or disruptions of transportation, such as reduced availability of air transport, port closures, and increased border controls or closures could result in delays;
- Impact on our workforce/employees due to the ease with which the virus spreads and the current shelter-in-place orders; and
- Cybersecurity risks as a result of extended periods of remote work arrangements.

Such effects could result in us being required to record impairment charges related to our property and equipment, intangible assets, or goodwill.

Item 2. **Unregistered Sales of Equity Securities and Use of Proceeds**

Not applicable.

Item 3. **Defaults Upon Senior Securities**

Not applicable.

Item 4. **Mine Safety Disclosures**

Not applicable.

Item 5. **Other Information**

Not applicable.

Item 6. **Exhibits**

31.1	Certification pursuant to Rule 13a-14(a) or 15d-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 - Dr. Gerald Paul, Chief Executive Officer.
31.2	Certification pursuant to Rule 13a-14(a) or 15d-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 - Lori Lipcaman, Chief Financial Officer.
32.1	Certification Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 – Dr. Gerald Paul, Chief Executive Officer.
32.2	Certification Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 – Lori Lipcaman, Chief Financial Officer.
101	Interactive Data File (Quarterly Report on Form 10-Q, for the quarterly period ended October 3, 2020, furnished in iXBRL (Inline eXtensible Business Reporting Language)).
104	Cover Page Interactive Data File (formatted as Inline eXtensible Business Reporting Language and contained in Exhibit 101)

SIGNATURES

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

VISHAY INTERTECHNOLOGY, INC.

/s/ Lori Lipcaman
Lori Lipcaman
Executive Vice President and Chief Financial Officer
(as a duly authorized officer and principal financial and accounting officer)

Date: November 3, 2020

Exhibit 31.1

CERTIFICATIONS

I, Dr. Gerald Paul, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Vishay Intertechnology, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 3, 2020

/s/ Gerald Paul
Dr. Gerald Paul
Chief Executive Officer

Exhibit 31.2

CERTIFICATIONS

I, Lori Lipcaman, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Vishay Intertechnology, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 3, 2020

/s/ Lori Lipcaman
Lori Lipcaman
Chief Financial Officer

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Vishay Intertechnology, Inc. (the "Company") on Form 10-Q for the fiscal quarter ended October 3, 2020 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Dr. Gerald Paul, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. section 1350, as adopted pursuant to section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Gerald Paul
Dr. Gerald Paul
Chief Executive Officer
November 3, 2020

Exhibit 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Vishay Intertechnology, Inc. (the "Company") on Form 10-Q for the fiscal quarter ended October 3, 2020 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Lori Lipcaman, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. section 1350, as adopted pursuant to section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Lori Lipcaman
Lori Lipcaman
Chief Financial Officer
November 3, 2020