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 September 27, 2019

Or

☐ **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) 000-30419

ON SEMICONDUCTOR CORPORATION
(Exact name of registrant as specified in its charter)

Delaware	**36-3840979**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**

5005 E. McDowell Road
Phoenix, AZ 85008
(602) 244-6600

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

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.01 per share	ON	The Nasdaq Stock Market 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 x No o

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 (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes x No o

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 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. o

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

The number of shares outstanding of the issuer's class of common stock as of the close of business on October 23, 2019:

Title of Each Class	Number of Shares
Common Stock, par value $0.01 per share	410,722,135

ON SEMICONDUCTOR CORPORATION FORM 10-Q

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(See the glossary of selected terms immediately following this table of contents for definitions of certain abbreviated terms)

ON SEMICONDUCTOR CORPORATION
FORM 10-Q

GLOSSARY OF SELECTED ABBREVIATED TERMS*

Abbreviated Term	Defined Term
1.00% Notes	1.00% Convertible Senior Notes due 2020
1.625% Notes	1.625% Convertible Senior Notes due 2023
Amended Credit Agreement	Credit Agreement, dated as of April 15, 2016, as subsequently amended, by and among the Company, as borrower, the several lenders party thereto, Deutsche Bank AG, New York Branch, as administrative agent and collateral agent, and certain other parties, providing for the Revolving Credit Facility and the Term Loan “B” Facility
Amended and Restated SIP	ON Semiconductor Corporation Amended and Restated Stock Incentive Plan, as amended
AMIS	AMIS Holdings, Inc.
Aptina	Aptina, Inc.
ASU	Accounting Standards Update
ASC	Accounting Standards Codification
ASIC	Application specific integrated circuit
CMOS	Complementary metal oxide semiconductor
DSP	Digital signal processing
ESPP	ON Semiconductor Corporation 2000 Employee Stock Purchase Plan, as amended
Exchange Act	Securities Exchange Act of 1934, as amended
Fairchild	Fairchild Semiconductor International, Inc.
FASB	Financial Accounting Standards Board
Freescale	Freescale Semiconductor, Inc.
IC	Integrated circuit
IoT	Internet-of-Things
IP	Intellectual property
IPRD	In-process research and development
LED	Light-emitting diode
LIBOR	A base rate per annum equal to the London Interbank Offered Rate as administered by the International Exchange Benchmark Administration
LiDAR	Light detection and ranging
MCU	Microcontroller unit
MOSFET	Metal oxide semiconductor field effect transistor
Motorola	Motorola Inc.
ODM	Original device manufacturers
OEM	Original equipment manufacturers
Revolving Credit Facility	A $1.97 billion revolving credit facility created pursuant to the Amended Credit Agreement
RSU	Restricted stock unit
SCI LLC	Semiconductor Components Industries, LLC, a wholly-owned subsidiary of ON Semiconductor Corporation
SEC	Securities and Exchange Commission
SoC	System on chip
Securities Act	Securities Act of 1933, as amended
Term Loan “B” Facility	A $2.4 billion term loan “B” facility created pursuant to the Amended Credit Agreement
Wi-Fi	Wireless radio technologies compliant with Institute of Electrical and Electronics Engineers Standard 802.11b and commonly used in wireless local area networking devices
WSTS	World Semiconductor Trade Statistics

* Terms used, but not defined, within the body of the Form 10-Q are defined in this Glossary.

PART I: FINANCIAL INFORMATION

Item 1. Financial Statements (unaudited)

ON SEMICONDUCTOR CORPORATION
CONSOLIDATED BALANCE SHEET
(in millions, except share and per share data)
(unaudited)

	September 27, 2019	December 31, 2018
Assets		
Cash and cash equivalents	$ 928.7	$ 1,069.6
Receivables, net	716.6	686.0
Inventories	1,240.7	1,225.2
Other current assets	187.0	187.0
Total current assets	3,073.0	3,167.8
Property, plant and equipment, net	2,602.1	2,549.6
Goodwill	1,659.2	932.5
Intangible assets, net	622.6	566.4
Deferred tax assets	291.5	266.2
Other assets	273.9	105.1
Total assets	$ 8,522.3	$ 7,587.6
Liabilities, Non-Controlling Interest and Stockholders’ Equity		
Accounts payable	$ 534.1	$ 671.7
Accrued expenses and other current liabilities	730.9	659.1
Current portion of long-term debt	736.6	138.5
Total current liabilities	2,001.6	1,469.3
Long-term debt	2,878.8	2,627.6
Deferred tax liabilities	59.8	54.8
Other long-term liabilities	342.5	241.8
Total liabilities	5,282.7	4,393.5
Commitments and contingencies (Note 11)		
ON Semiconductor Corporation stockholders’ equity:		
Common stock ($0.01 par value, 1,250,000,000 shares authorized, 564,323,095 and 558,701,620 issued, 410,171,176 and 413,834,227 outstanding, respectively)	5.6	5.6
Additional paid-in capital	3,779.1	3,702.3
Accumulated other comprehensive loss	(55.6)	(37.9)
Accumulated earnings	1,134.8	979.6
Less: Treasury stock, at cost: 154,151,919 and 144,867,393 shares, respectively	(1,648.6)	(1,478.0)
Total ON Semiconductor Corporation stockholders’ equity	3,215.3	3,171.6
Non-controlling interest	24.3	22.5
Total stockholders' equity	3,239.6	3,194.1
Total liabilities and stockholders' equity	$ 8,522.3	$ 7,587.6

See accompanying notes to consolidated financial statements

ON SEMICONDUCTOR CORPORATION
CONSOLIDATED STATEMENT OF OPERATIONS AND COMPREHENSIVE INCOME
(in millions, except per share data)
(unaudited)

	Quarters Ended		Nine Months Ended	
	September 27, 2019	September 28, 2018	September 27, 2019	September 28, 2018
Revenue	$ 1,381.8	$ 1,541.7	$ 4,116.1	$ 4,375.2
Cost of revenue (exclusive of amortization shown below)	906.6	945.1	2,628.2	2,706.2
Gross profit	475.2	596.6	1,487.9	1,669.0
Operating expenses:				
Research and development	172.8	166.2	471.6	488.5
Selling and marketing	74.7	83.1	225.4	242.6
General and administrative	67.8	73.3	214.8	218.8
Litigation settlement (Note 11)	169.5	—	169.5	—
Amortization of acquisition-related intangible assets	29.9	28.0	83.1	83.3
Restructuring, asset impairments and other, net	4.4	4.4	28.1	8.0
Goodwill and intangible asset impairment	—	—	1.6	3.3
Total operating expenses	519.1	355.0	1,194.1	1,044.5
Operating income (loss)	(43.9)	241.6	293.8	624.5
Other income (expense), net:				
Interest expense	(40.7)	(31.2)	(106.1)	(95.3)
Interest income	2.3	1.3	7.8	3.3
Loss on debt refinancing and prepayment	(5.8)	(0.6)	(6.2)	(4.6)
Gain on divestiture of business	—	0.4	—	5.0
Licensing income	—	1.0	—	32.9
Other income (expense)	3.5	3.5	4.6	0.5
Other income (expense), net	(40.7)	(25.6)	(99.9)	(58.2)
Income (loss) before income taxes	(84.6)	216.0	193.9	566.3
Income tax (provision) benefit	24.6	(48.9)	(36.9)	(102.4)
Net income (loss)	(60.0)	167.1	157.0	463.9
Less: Net income attributable to non-controlling interest	(0.7)	(0.2)	(1.8)	(2.1)
Net income (loss) attributable to ON Semiconductor Corporation	$ (60.7)	$ 166.9	$ 155.2	$ 461.8
Comprehensive income (loss), net of tax:				
Net income (loss)	$ (60.0)	$ 167.1	$ 157.0	$ 463.9
Foreign currency translation adjustments	(0.1)	(0.7)	0.5	0.2
Effects of cash flow hedges	(2.1)	0.1	(18.2)	4.9
Other comprehensive income (loss), net of tax	(2.2)	(0.6)	(17.7)	5.1
Comprehensive income (loss)	(62.2)	166.5	139.3	469.0
Comprehensive income attributable to non-controlling interest	(0.7)	(0.2)	(1.8)	(2.1)
Comprehensive income (loss) attributable to ON Semiconductor Corporation	$ (62.9)	$ 166.3	$ 137.5	$ 466.9
Net income (loss) per common share attributable to ON Semiconductor Corporation:				
Basic	$ (0.15)	$ 0.39	$ 0.38	$ 1.08
Diluted	$ (0.15)	$ 0.38	$ 0.37	$ 1.05
Weighted-average common shares outstanding:				
Basic	410.4	425.5	411.0	426.1
Diluted	410.4	435.3	415.3	441.2

See accompanying notes to consolidated financial statements

ON SEMICONDUCTOR CORPORATION
CONSOLIDATED STATEMENT OF STOCKHOLDERS' EQUITY
(in millions, except share data)
(unaudited)

	Common Stock					Treasury Stock			
	Number of shares	At Par Value	Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Earnings	Number of shares	At Cost	Non-Controlling Interest	Total Equity
Balance at June 28, 2019	563,192,019	$ 5.6	$ 3,757.6	$ (53.4)	$ 1,195.5	(153,141,121)	$ (1,631.0)	$ 23.6	$ 3,297.9
Stock option exercises	50,900	—	0.4	—	—	—	—	—	0.4
Shares issued pursuant to the ESPP	370,910	—	6.4	—	—	—	—	—	6.4
RSUs and stock grant awards issued	709,266	—	—	—	—	—	—	—	—
Shares withheld for employee taxes on RSUs	—	—	—	—	—	(246,870)	(4.4)	—	(4.4)
Share-based compensation expense	—	—	14.7	—	—	—	—	—	14.7
Repurchase of common stock	—	—	—	—	—	(763,928)	(13.2)	—	(13.2)
Comprehensive (loss) income	—	—	—	(2.2)	(60.7)	—	—	0.7	(62.2)
Balance at September 27, 2019	564,323,095	$ 5.6	$ 3,779.1	$ (55.6)	$ 1,134.8	(154,151,919)	$ (1,648.6)	$ 24.3	$ 3,239.6
Balance at December 31, 2018	558,701,620	$ 5.6	$ 3,702.3	$ (37.9)	$ 979.6	(144,867,393)	$ (1,478.0)	$ 22.5	$ 3,194.1
Stock option exercises	208,097	—	1.3	—	—	—	—	—	1.3
Shares issued pursuant to the ESPP	898,399	—	13.8	—	—	—	—	—	13.8
RSUs and stock grant awards issued	4,514,979	—	—	—	—	—	—	—	—
Shares withheld for employee taxes on RSUs	—	—	—	—	—	(1,522,519)	(31.6)	—	(31.6)
Share-based compensation expense	—	—	61.7	—	—	—	—	—	61.7
Repurchase of common stock	—	—	—	—	—	(7,762,007)	(139.0)	—	(139.0)
Comprehensive (loss) income	—	—	—	(17.7)	155.2	—	—	1.8	139.3
Balance at September 27, 2019	564,323,095	$ 5.6	$ 3,779.1	$ (55.6)	$ 1,134.8	(154,151,919)	$ (1,648.6)	$ 24.3	$ 3,239.6
Balance at June 29, 2018	555,619,904	$ 5.6	$ 3,646.1	$ (34.9)	$ 646.9	(129,259,916)	$ (1,191.0)	$ 24.1	$ 3,096.8
Stock option exercises	15,605	—	0.1	—	—	—	—	—	0.1
Shares issued pursuant to the ESPP	326,090	—	6.2	—	—	—	—	—	6.2
RSUs and stock grant awards issued	1,182,642	—	—	—	—	—	—	—	—
Shares withheld for employee taxes on RSUs	—	—	—	—	—	(415,576)	(9.3)	—	(9.3)
Share-based compensation expense	—	—	17.9	—	—	—	—	—	17.9
Repurchase of common stock	—	—	—	—	—	(3,583,884)	(75.0)	—	(75.0)
Other	—	—	—	—	0.2	—	—	—	0.2
Comprehensive (loss) income	—	—	—	(0.6)	166.9	—	—	0.2	166.5
Balance at September 28, 2018	557,144,241	$ 5.6	$ 3,670.3	$ (35.5)	$ 814.0	(133,259,376)	$ (1,275.3)	$ 24.3	$ 3,203.4
Balance at December 31, 2017	551,873,115	$ 5.5	$ 3,593.5	$ (40.6)	$ 351.5	(126,754,921)	$ (1,131.1)	$ 22.2	$ 2,801.0
Impact of the adoption of ASU 2016-16	—	—	—	—	(1.4)	—	—	—	(1.4)
Impact of the adoption of ASC 606	—	—	—	—	2.1	—	—	—	2.1
Stock option exercises	630,281	—	4.4	—	—	—	—	—	4.4
Shares issued pursuant to the ESPP	710,137	—	13.0	—	—	—	—	—	13.0
RSUs and stock grant awards issued	3,930,708	0.1	—	—	—	—	—	—	0.1
Shares withheld for employee taxes on RSUs	—	—	—	—	—	(1,207,441)	(29.2)	—	(29.2)
Share-based compensation expense	—	—	59.4	—	—	—	—	—	59.4
Repurchase of common stock	—	—	—	—	—	(5,297,014)	(115.0)	—	(115.0)
Comprehensive income	—	—	—	5.1	461.8	—	—	2.1	469.0
Balance at September 28, 2018	557,144,241	$ 5.6	$ 3,670.3	$ (35.5)	$ 814.0	(133,259,376)	$ (1,275.3)	$ 24.3	$ 3,203.4

See accompanying notes to consolidated financial statements

ON SEMICONDUCTOR CORPORATION
CONSOLIDATED STATEMENT OF CASH FLOWS
(in millions)
(unaudited)

	Nine Months Ended	
	September 27, 2019	September 28, 2018
Cash flows from operating activities:		
Net income	$ 157.0	$ 463.9
Adjustments to reconcile net income to net cash provided by operating activities and other adjustments:		
Depreciation and amortization	431.1	372.5
Loss on sale or disposal of fixed assets	0.5	3.6
Gain on divestiture of business	—	(5.0)
Loss on debt refinancing and prepayment	6.2	4.6
Amortization of debt discount and issuance costs	9.9	9.8
Payments for term debt modification	—	(1.1)
Share-based compensation expense	61.7	59.4
Non-cash interest on convertible notes	27.9	26.6
Non-cash asset impairment charges	2.9	4.6
Goodwill and intangible asset impairment charges	1.6	3.3
Change in deferred tax balances	10.8	79.9
Other	(1.5)	(5.8)
Changes in assets and liabilities (exclusive of the impact of acquisition and divestiture):		
Receivables	(6.3)	(67.7)
Inventories	26.4	(105.1)
Other assets	(29.5)	(25.3)
Accounts payable	(78.0)	19.3
Accrued expenses and other current liabilities	(5.7)	28.2
Other long-term liabilities	(12.0)	(12.5)
Net cash provided by operating activities	603.0	853.2
Cash flows from investing activities:		
Purchase of property, plant and equipment	(422.2)	(382.8)
Proceeds from sales of property, plant and equipment	1.5	6.3
Deposits made for purchase of property, plant and equipment	(0.2)	(5.6)
Purchase of business, net of cash acquired	(888.0)	(70.9)
Purchase of license and deposit made for manufacturing facility	(100.0)	—
Proceeds from divestiture of business and release of escrow	5.0	7.3
Proceeds from repayment of note receivable	—	10.2
Equity method investment	—	(19.8)
Net cash used in investing activities	(1,403.9)	(455.3)
Cash flows from financing activities:		
Proceeds for the issuance of common stock under the ESPP	19.6	18.7
Proceeds from exercise of stock options	1.3	4.4
Payment of tax withholding for RSUs	(31.6)	(29.2)
Repurchase of common stock	(139.0)	(115.0)
Borrowings under debt agreements	1,404.8	8.2
Payment of debt issuance and other financing costs	(21.9)	—
Repayment of long-term debt	(580.1)	(279.9)
Release of escrow related to prior acquisition	(10.4)	—
Payment of finance lease obligations	(0.6)	(3.3)
Net cash provided by (used in) financing activities	642.1	(396.1)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	0.4	0.1
Net increase (decrease) in cash, cash equivalents and restricted cash	(158.4)	1.9
Cash, cash equivalents and restricted cash, beginning of period (Note 16)	1,087.1	966.6
Cash, cash equivalents and restricted cash, end of period (Note 16)	$ 928.7	$ 968.5

See accompanying notes to consolidated financial statements

ON SEMICONDUCTOR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(unaudited)

Note 1: Background and Basis of Presentation

ON Semiconductor Corporation, together with its wholly and majority-owned subsidiaries ("ON Semiconductor," "we," “us,” “our,” or the "Company"), uses a thirteen-week fiscal quarter accounting period for the first three fiscal quarters of each year, with the third quarter of 2019 having ended on September 27, 2019 and each fiscal year ending on December 31. The quarters ended September 27, 2019 and September 28, 2018 each contained 91 days. The nine months ended September 27, 2019 and September 28, 2018 contained 270 and 271 days, respectively. As of September 27, 2019, the Company was organized into the following three operating and reporting segments: the Power Solutions Group ("PSG"), the Analog Solutions Group ("ASG") and the Intelligent Sensing Group ("ISG"). Additional details on the Company’s operating and reporting segments are included in Note 2: "Revenue and Segment Information."

The accompanying unaudited financial statements as of and for the quarter and nine months ended September 27, 2019 have been prepared in accordance with generally accepted accounting principles in the United States of America ("GAAP") for unaudited interim financial information. Accordingly, the unaudited financial statements do not include all of the information and footnotes required by GAAP for audited financial statements. The balance sheet as of December 31, 2018 was derived from the Company's audited financial statements but does not include all disclosures required by GAAP for audited financial statements. In the opinion of the Company's management, the interim information includes all adjustments, which includes normal recurring adjustments, necessary for a fair statement of the results for the interim periods. The footnote disclosures related to the interim financial information included herein are also unaudited. Such financial information should be read in conjunction with the consolidated financial statements and related notes thereto for the year ended December 31, 2018 included in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2018, which was filed with the SEC on February 20, 2019 (the “2018 Form 10-K”). Financial results for interim periods are not necessarily indicative of the results of operations that may be expected for a full fiscal year.

Use of Estimates

The preparation of financial statements in accordance with GAAP requires management to make estimates and assumptions that affect the reported amount of assets and liabilities at the date of the financial statements and the reported amount of revenue and expenses during the reporting period. Management evaluates these estimates and judgments on an ongoing basis and bases its estimates on experience, current and expected future conditions, third-party evaluations and various other assumptions that management believes are reasonable under the circumstances. Significant estimates have been used by management in conjunction with the following: (i) future payouts for customer incentives and amounts subject to allowances, returns and warranties; (ii) measurement of valuation allowances relating to inventories; (iii) fair values of share-based compensation; (iv) assumptions used in business combinations; and (v) measurement of valuation allowances against deferred tax assets and evaluations of unrecognized tax benefits. Additionally, during periods where it becomes applicable, significant estimates will be used by management in determining the future cash flows used to assess and test for impairment of goodwill, indefinite-lived intangible assets and long-lived assets. Actual results may differ from the estimates and assumptions used in the consolidated financial statements and related notes.

Note 2: Revenue and Segment Information

The Company is organized into three operating and reporting segments consisting of PSG, ASG and ISG. Because many products are sold into different end-markets, the total revenue reported for a segment is not indicative of actual sales in the end-market associated with that segment, but rather is the sum of the revenue from the product lines assigned to that segment. These segments represent the Company's view of the business and as such are used to evaluate progress of major initiatives and allocation of resources.

Revenue and gross profit for the Company's operating and reporting segments were as follows (in millions):

	PSG	ASG	ISG	Total
For the quarter ended September 27, 2019:				
Revenue from external customers	$ 687.9	$ 508.9	$ 185.0	$ 1,381.8
Gross profit	$ 226.7	$ 207.7	$ 67.6	$ 502.0
For the quarter ended September 28, 2018:				
Revenue from external customers	$ 810.2	$ 531.7	$ 199.8	$ 1,541.7
Gross profit	$ 297.9	$ 224.3	$ 80.7	$ 602.9
For the nine months ended September 27, 2019:				
Revenue from external customers	$ 2,093.0	$ 1,465.0	$ 558.1	$ 4,116.1
Gross profit	$ 731.4	$ 592.5	$ 208.4	$ 1,532.3
For the nine months ended September 28, 2018:				
Revenue from external customers	$ 2,251.0	$ 1,541.1	$ 583.1	$ 4,375.2
Gross profit	$ 804.2	$ 650.4	$ 245.0	$ 1,699.6

Gross profit is exclusive of the amortization of acquisition-related intangible assets. Depreciation expense is included in segment gross profit. Reconciliations of segment gross profit to consolidated gross profit are as follows (in millions):

	Quarters Ended		Nine Months Ended	
	September 27, 2019	September 28, 2018	September 27, 2019	September 28, 2018
Gross profit for reporting segments	$ 502.0	$ 602.9	$ 1,532.3	$ 1,699.6
Less: Unallocated manufacturing costs	(26.8)	(6.3)	(44.4)	(30.6)
Consolidated gross profit	$ 475.2	$ 596.6	$ 1,487.9	$ 1,669.0

Revenue for the Company's operating and reporting segments disaggregated into geographic locations and sales channels were as follows (in millions):

ON SEMICONDUCTOR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued
(unaudited)

	Quarter Ended September 27, 2019			
	PSG	ASG	ISG	Total
Geographic Location				
Singapore	$ 207.7	$ 195.7	$ 43.4	$ 446.8
Hong Kong	216.2	105.8	34.9	356.9
United Kingdom	111.4	77.3	34.3	223.0
United States	92.2	73.4	27.7	193.3
Other	60.4	56.7	44.7	161.8
Total	$ 687.9	$ 508.9	$ 185.0	$ 1,381.8
Sales Channel				
Distributors	$ 430.6	$ 248.8	$ 113.7	$ 793.1
OEM/ODM	206.9	228.2	61.5	496.6
Electronic Manufacturing Service Providers	50.4	31.9	9.8	92.1
Total	$ 687.9	$ 508.9	$ 185.0	$ 1,381.8

	Nine Months Ended September 27, 2019			
	PSG	ASG	ISG	Total
Geographic Location				
Singapore	$ 646.0	$ 479.2	$ 126.7	$ 1,251.9
Hong Kong	623.0	326.1	94.2	1,043.3
United Kingdom	355.2	233.2	110.9	699.3
United States	280.7	259.0	90.7	630.4
Other	188.1	167.5	135.6	491.2
Total	$ 2,093.0	$ 1,465.0	$ 558.1	$ 4,116.1
Sales Channel				
Distributors	$ 1,287.8	$ 713.7	$ 336.8	$ 2,338.3
OEM/ODM	666.4	647.0	191.7	1,505.1
Electronic Manufacturing Service Providers	138.8	104.3	29.6	272.7
Total	$ 2,093.0	$ 1,465.0	$ 558.1	$ 4,116.1

	Quarter Ended September 28, 2018			
	PSG	ASG	ISG	Total
Geographic Location				
Singapore	$ 332.8	$ 191.7	$ 48.6	$ 573.1
Hong Kong	201.9	124.1	35.0	361.0
United Kingdom	124.9	81.9	34.8	241.6
United States	102.3	87.8	31.5	221.6
Other	48.3	46.2	49.9	144.4
Total	$ 810.2	$ 531.7	$ 199.8	$ 1,541.7
Sales Channel				
Distributors	$ 565.1	$ 280.4	$ 122.2	$ 967.7
OEM/ODM	198.6	213.1	65.1	476.8
Electronic Manufacturing Service Providers	46.5	38.2	12.5	97.2
Total	$ 810.2	$ 531.7	$ 199.8	$ 1,541.7

	Nine Months Ended September 28, 2018			
	PSG	ASG	ISG	Total
Geographic Location				
Singapore	$ 805.3	$ 510.7	$ 123.8	$ 1,439.8
Hong Kong	636.5	379.7	110.6	1,126.8
United Kingdom	368.0	243.4	106.2	717.6
United States	295.0	251.9	91.4	638.3
Other	146.2	155.4	151.1	452.7
Total	$ 2,251.0	$ 1,541.1	$ 583.1	$ 4,375.2
Sales Channel				
Distributors	$ 1,499.7	$ 792.0	$ 352.4	$ 2,644.1
OEM/ODM	616.5	640.7	198.6	1,455.8
Electronic Manufacturing Service Providers	134.8	108.4	32.1	275.3
Total	$ 2,251.0	$ 1,541.1	$ 583.1	$ 4,375.2

The Company operates in various geographic locations. Sales to unaffiliated customers have little correlation with the location of manufacturers. It is, therefore, not meaningful to present operating profit by geographical location. The Company's consolidated assets are not specifically ascribed to its individual reporting segments. Rather, assets used in operations are generally shared across the Company's operating and reporting segments.

Property, plant and equipment, net by geographic location, is summarized as follows (in millions):

	As of	
	September 27, 2019	December 31, 2018
United States	$ 608.3	$ 616.9
Korea	460.7	383.1
Philippines	443.6	474.5
China	244.1	248.4
Czech Republic	231.3	194.5
Japan	220.7	205.0
Malaysia	212.6	229.1
Other	180.8	198.1
Total	$ 2,602.1	$ 2,549.6

Note 3: Recent Accounting Pronouncements

ASU Adopted:

ASU No. 2016-02 - Leases (Topic 842) ("ASU 2016-02"), ASU No. 2018-10 - Codification improvements to Topic 842, Leases ("ASU 2018-10"), ASU No. 2018-11 - Leases (Topic 842) ("ASU 2018-11") (collectively, the "New Leasing Standard")

In February 2016, the FASB issued ASU 2016-02, which amended the accounting treatment for leases. ASU 2016 -02 requires that a lessee should recognize on its balance sheet a liability to make lease payments (the lease liability) and a right-of-use asset representing its right to use the underlying asset for the lease term. Lessees must apply a modified retrospective transition approach for leases existing at, or entered into after, the beginning of the earliest comparative period presented in the financial statements. The modified retrospective approach would not require any transition accounting for leases that expired before the earliest comparative period presented. In July 2018, the FASB issued ASU 2018-10 and ASU 2018-11. ASU 2018-10 provides certain areas for improvement in ASU 2016-02 and ASU 2018-11 provides an additional optional transition method by allowing entities to initially apply the New Leasing Standard at the adoption date and recognize a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption (the "effective date method"). The New Leasing Standard is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years.

The Company adopted the New Leasing Standard as of January 1, 2019 using the effective date method by recording right-of-use assets of $112.3 million, net of deferred rent liabilities of $5.1 million that were reclassified to right-of-use assets, and lease liabilities of $117.4 million. Under this method, periods prior to 2019 remain unchanged. The Company applied the practical expedients relating to the leases that commenced before January 1, 2019 whereby the Company elected to not reassess the following: (i) whether any expired or existing contracts contain leases; (ii) the lease classification for any expired or existing leases; and (iii) initial direct costs for any existing leases. See Note 7: "Balance Sheet Information" for further information and disclosures relating to the New Leasing Standard.

Note 4: Acquisitions

Acquisition of Quantenna

On June 19, 2019, the Company acquired 100% of the outstanding shares of Quantenna Communications, Inc. ("Quantenna"), a global leader and innovator of high performance Wi-Fi solutions, whereby Quantenna became a wholly-owned subsidiary of the Company. The acquisition of Quantenna creates a strong platform for addressing connectivity solutions for industrial IoT by combining the Company's expertise in power management and bluetooth technologies with Quantenna's Wi-Fi technologies and software capabilities. Following the acquisition, Quantenna changed its name to ON Semiconductor Connectivity Solutions, Inc.

The purchase price consideration for the acquisition totaled $1,039.3 million, of which $21.0 million and $1,000.4 million were paid in cash during the quarters ended September 27, 2019 and June 28, 2019, respectively. The remaining amount of $17.9 million will be paid in multiple installments through 2023. The acquisition was funded by a combination of a draw of $900.0 million against the Revolving Credit Facility and cash on hand. See Note 8: "Long-Term Debt" for further information on the Revolving Credit Facility.

From the closing date of the Quantenna acquisition through September 27, 2019, the Company recognized approximately $44.7 million in revenue and $51.3 million in net loss relating to Quantenna, which included the amortization of fair market value step-up of inventory and intangible assets and restructuring charges.

During the third quarter of 2019, the Company recorded certain measurement period adjustments to the initial estimated purchase price allocation. These adjustments were made based on information obtained during the measurement period and are properly reflected in the Company's consolidated balance sheet as of September 27, 2019. These adjustments would not have resulted in a material impact to the results of operations during the quarter ended June 28, 2019 as Quantenna was in the Company's combined results for only ten days.

The following table presents the updated provisional allocation of the purchase price of Quantenna for the assets acquired and liabilities assumed based on their relative fair values (in millions):

	Initial Estimate	Measurement Period Adjustments	Updated Allocation
Cash and cash equivalents	$ 133.4	$ —	$ 133.4
Receivables	21.2	1.0	22.2
Inventories	45.0	(3.2)	41.8
Other current assets	4.3	—	4.3
Property, plant and equipment	16.3	0.6	16.9
Goodwill	620.0	106.7	726.7
Intangible assets (excluding IPRD)	180.9	(93.8)	87.1
IPRD	55.5	(31.7)	23.8
Deferred tax assets	3.3	25.9	29.2
Other non-current assets	10.5	2.2	12.7
Total assets acquired	1,090.4	7.7	1,098.1
Accounts payable	22.6	—	22.6
Other current liabilities	16.8	0.7	17.5
Deferred tax liabilities	3.9	(0.6)	3.3
Other non-current liabilities	7.8	7.6	15.4
Total liabilities assumed	51.1	7.7	58.8
Net assets acquired/purchase price	$ 1,039.3	$ —	$ 1,039.3

Acquired intangible assets of $110.9 million include developed technology of $58.3 million (which are estimated to have an useful life of ten years). The total weighted average amortization period for the acquired intangibles is ten years.

IPRD assets are amortized over the estimated useful life of the assets upon successful completion of the related projects. The value assigned to IPRD was determined by estimating the net cash flows from the projects when completed and discounting the net cash flows to their present value using a discount rate of approximately 12%. The cash flows from IPRD's significant products are expected to commence from 2021 onwards.

The acquisition produced $726.7 million of goodwill, which has been assigned to a reporting unit within ASG. The goodwill is attributable to a combination of Quantenna's assembled workforce, expectations regarding a more meaningful engagement by the customers due to the scale of the combined company and other product and operating synergies. Goodwill arising from the Quantenna acquisition is not deductible for tax purposes.

The updated purchase price allocation is subject to change as the Company finalizes its determination relating to the valuation of assets and liabilities and finalizes key assumptions, approaches and judgments with respect to intangible assets acquired from Quantenna and the related tax effects. Accordingly, future adjustments may impact the updated amount of goodwill and other allocated amounts represented in the table above.

Pro-Forma Results of Operations

The following unaudited pro-forma consolidated results of operation for the quarters and nine months ended September 27, 2019 and September 28, 2018 have been prepared as if the acquisition of Quantenna had occurred on January 1, 2018 and includes adjustments for amortization of intangibles, interest expense from financing, restructuring, and the effect of purchase accounting adjustments including the step-up of inventory (in millions):

	Quarters Ended		Nine Months Ended	
	September 27, 2019	September 28, 2018	September 27, 2019	September 28, 2018
Revenue	$ 1,381.8	$ 1,601.0	$ 4,211.4	$ 4,533.1
Net income (loss)	(43.1)	160.1	160.9	407.8
Net income (loss) attributable to ON Semiconductor Corporation	(43.8)	159.9	159.1	405.7
Net income (loss) per common share attributable to ON Semiconductor Corporation:				
Basic	$ (0.11)	$ 0.38	$ 0.39	$ 0.95
Diluted	$ (0.11)	$ 0.37	$ 0.38	$ 0.92

Pending Acquisition of Manufacturing Facility and Related Assets

On April 22, 2019, through SCI LLC, the Company entered into an Asset Purchase Agreement (the "Asset Purchase Agreement") with GLOBALFOUNDRIES U.S. Inc. (“GFUS”) and GLOBALFOUNDRIES Inc. pursuant to which the Company will acquire GFUS’s East Fishkill, New York site and fabrication facilities, including a post-fabrication facility, support buildings and related assets (the “Transferred Assets”), and assume certain liabilities, including those relating to Company's ownership and operation of the Transferred Assets (collectively, the “Asset Purchase”). The closing of the Asset Purchase is expected to occur on or around December 31, 2022, subject to the satisfaction or waiver of the conditions to closing as specified in the Asset Purchase Agreement. The aggregate purchase price for the Asset Purchase is $400.0 million in cash, subject to adjustment as described in the Asset Purchase Agreement, of which a non-refundable deposit of $70.0 million, subject to downward adjustment, was paid by SCI LLC to GFUS in cash on April 22, 2019. The remaining $330.0 million will be paid on or around the closing date of the Asset Purchase.

In connection with the Asset Purchase Agreement, the parties entered into certain ancillary agreements (the "Ancillary Agreements") pursuant to which SCI LLC will be provided with technology transfer and development services as well as foundry services prior to the closing date, and GFUS will be provided foundry services for a limited period of time following the closing date. Pursuant to the Ancillary Agreements, on April 22, 2019, SCI LLC paid GFUS a license fee in the amount of $30.0 million in cash, subject to upward adjustment, for certain technology. This amount has been recorded as an intangible asset in our Consolidated Balance Sheet as of September 27, 2019 and will be amortized when the revenue from the sale of products under the Ancillary Agreement commences.

The Company incurred approximately $4.0 million of expenses in connection with these transactions and expects to incur an additional $5.0 million in legal fees, advisory fees and other third party costs on or around the closing date.

Note 5: Goodwill and Intangible Assets

Goodwill

The following table summarizes goodwill by operating and reporting segments (in millions):

	As of					
	September 27, 2019			December 31, 2018		
	Goodwill	Accumulated Impairment Losses	Carrying Value	Goodwill	Accumulated Impairment Losses	Carrying Value
Operating and Reporting Segments:						
PSG	$ 432.2	$ (31.9)	$ 400.3	$ 432.2	$ (31.9)	$ 400.3
ASG	1,563.4	(418.9)	1,144.5	836.7	(418.9)	417.8
ISG	114.4	—	114.4	114.4	—	114.4
	$ 2,110.0	$ (450.8)	$ 1,659.2	$ 1,383.3	$ (450.8)	$ 932.5

The following table summarizes the change in goodwill from December 31, 2018 through September 27, 2019 (in millions):

Net balance as of December 31, 2018	$ 932.5
Addition due to business combination	726.7
Net balance as of September 27, 2019	$ 1,659.2

Goodwill is tested for impairment annually on the first day of the fourth quarter or more frequently if events or changes in circumstances (each, a "triggering event") would more likely than not reduce the carrying value of goodwill below its fair value. Management did not identify any triggering events during the quarter ended September 27, 2019 that would require an interim impairment analysis.

Intangible Assets

Intangible assets, net, were as follows (in millions):

	As of September 27, 2019			
	Original Cost	Accumulated Amortization	Accumulated Impairment Losses	Carrying Value
Customer relationships	$ 585.2	$ (379.2)	$ (20.1)	$ 185.9
Developed technology	760.8	(416.6)	(2.6)	341.6
IPRD	83.4	—	(24.1)	59.3
Licenses	30.0	—	—	30.0
Other intangibles	82.6	(61.6)	(15.2)	5.8
Total intangible assets	$ 1,542.0	$ (857.4)	$ (62.0)	$ 622.6

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	As of December 31, 2018			
	Original Cost	Accumulated Amortization	Accumulated Impairment Losses	Carrying Value
Customer relationships	$ 556.7	$ (359.1)	$ (20.1)	$ 177.5
Developed technology	698.0	(356.4)	(2.6)	339.0
IPRD	64.1	—	(22.5)	41.6
Other intangibles	82.3	(58.8)	(15.2)	8.3
Total intangible assets	$ 1,401.1	$ (774.3)	$ (60.4)	$ 566.4

During the quarter ended September 27, 2019, there were no impairment losses on capitalized IPRD projects. During the nine months ended September 27, 2019, the Company abandoned two previously capitalized IPRD projects under ISG and recorded aggregate impairment losses for such projects in the amount of $1.6 million.

Amortization expense for acquisition-related intangible assets amounted to $29.9 million and $83.1 million for the quarter and nine months ended September 27, 2019, respectively, and $28.0 million and $83.3 million for the quarter and nine months ended September 28, 2018, respectively. Amortization expense for intangible assets, with the exception of the $59.3 million of IPRD assets that will be amortized once the corresponding projects have been completed, is expected to be as follows for the remainder of 2019, each of the next four years and thereafter (in millions):

Period	Amortization Expense
Remainder of 2019	$ 31.6
2020	111.9
2021	93.0
2022	77.9
2023	61.9
Thereafter	187.0
Total	$ 563.3

Note 6: Restructuring, Asset Impairments and Other, Net

Summarized activity included in the “Restructuring, asset impairments and other, net” caption on the Company's Consolidated Statement of Operations and Comprehensive Income is as follows (in millions):

	Restructuring	Asset Impairments	Other	Total
Quarter ended September 27, 2019				
General workforce reduction	$ 0.6	$ —	$ —	$ 0.6
Post-Quantenna acquisition restructuring	1.8	—	—	1.8
Other	0.8	—	1.2	2.0
Total	$ 3.2	$ —	$ 1.2	$ 4.4

	Restructuring	Asset Impairments (1)	Other	Total
Nine months ended September 27, 2019				
General workforce reduction	$ 8.4	$ —	$ —	$ 8.4
Post-Quantenna acquisition restructuring	15.6	—	—	15.6
Other	0.8	2.9	0.4	4.1
Total	$ 24.8	$ 2.9	$ 0.4	$ 28.1

(1) Includes, among others, charges for the impairment of right-of-use assets of $2.5 million.

Changes in accrued restructuring charges from December 31, 2018 to September 27, 2019 are summarized as follows (in millions):

	As of December 31, 2018	Charges	Usage	As of September 27, 2019
Estimated employee separation charges	$ 0.3	$ 24.8	$ (22.6)	$ 2.5
Other	0.2	—	(0.1)	0.1
Total	$ 0.5	$ 24.8	$ (22.7)	$ 2.6

General workforce reduction

During the first quarter of 2019, the Company approved and began to implement certain restructuring actions aimed at cost savings, primarily through workforce reductions. As of September 27, 2019, the Company had notified approximately 143 employees of their employment termination, 139 of whom had exited by September 27, 2019. During the quarter and nine months ended September 27, 2019, the expense for this program amounted to $0.6 million and $8.4 million, respectively, of which $0.3 million remained accrued as of September 27, 2019. As of September 27, 2019, no further expenses were expected to be incurred for this program.

Post-Quantenna acquisition restructuring

Following the acquisition of Quantenna and during the quarter ended June 28, 2019, the Company implemented a cost-reduction plan resulting in the elimination of approximately eight executive positions from Quantenna’s workforce, primarily as a result of redundancies. During the quarter ended September 27, 2019, the Company terminated an additional nine employees. The total restructuring expense of $15.6 million was attributable to the accelerated vesting of stock awards previously issued by Quantenna, executive retention and other severance benefits. As of September 27, 2019, $1.1 million of this restructuring expense remained accrued, and such amount will be paid during the fourth quarter of 2019. The Company will continue to evaluate positions for redundancies and may incur additional charges in the future.

Note 7: Balance Sheet Information

Certain significant amounts included in the Company's Consolidated Balance Sheet consist of the following (in millions):

	As of September 27, 2019	As of December 31, 2018
Inventories:		
Raw materials	$ 145.0	$ 137.3
Work in process	782.4	760.7
Finished goods	313.3	327.2
	$ 1,240.7	$ 1,225.2

Defined Benefit Plans

The Company maintains defined benefit plans for certain of its foreign subsidiaries. The Company recognizes the aggregate amount of all overfunded plans as assets and the aggregate amount of all underfunded plans as liabilities in its financial statements. As of September 27, 2019, the total accrued pension liability for underfunded plans was $116.0 million, of which the current portion of $0.3 million was classified as accrued expenses and other current liabilities. As of December 31, 2018, the total accrued pension liability for underfunded plans was $115.9 million, of which the current portion of $0.2 million was classified as accrued expenses and other current liabilities.

The components of the Company's net periodic pension expense are as follows (in millions):

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	Quarters Ended		Nine Months Ended	
	September 27, 2019	September 28, 2018	September 27, 2019	September 28, 2018
Service cost	$ 2.4	$ 2.4	$ 7.1	$ 7.3
Interest cost	1.3	1.2	3.8	3.6
Expected return on plan assets	(1.5)	(1.5)	(4.5)	(4.6)
Total net periodic pension cost	$ 2.2	$ 2.1	$ 6.4	$ 6.3

Leases

The Company determines if an arrangement is a lease at its inception. Operating lease arrangements are comprised primarily of real estate and equipment agreements for which the right-of-use assets are included in other assets and the corresponding lease liabilities, depending on their maturity, are included in accrued expenses and other current liabilities or other long-term liabilities in the Consolidated Balance Sheet. There are certain immaterial finance leases recorded in the Consolidated Balance Sheet. The Company has elected to account for the lease and non-lease components as a single lease component.

Right-of-use assets and liabilities are recognized at the lease commencement date based on the estimated present value of lease payments over the lease term. The Company uses its estimated incremental borrowing rate in determining the present value of lease payments considering the term of the lease, which is derived from information available at the lease commencement date, giving consideration to publicly available data for instruments with similar characteristics. The Company's existing leases do not contain significant restrictive provisions; however, certain leases contain renewal options and provisions for payment of real estate taxes, insurance and maintenance costs by the Company. The lease term includes options to extend the lease when it is reasonably certain that that the option will be exercised. Leases with a term of 12 months or less are not recorded on the Consolidated Balance Sheet. The lease agreements do not contain any residual value guarantees.

The components of lease expense are as follows (in millions):

	Quarter Ended	Nine Months Ended
	September 27, 2019	September 27, 2019
Operating lease	$ 9.2	$ 25.8
Variable lease	1.0	3.1
Short-term lease	0.6	1.9
Total lease expense	$ 10.8	$ 30.8

The lease liabilities recognized in the Consolidated Balance Sheet are as follows (in millions):

	As of
	September 27, 2019
Accrued expenses and other current liabilities	$ 27.6
Other long-term liabilities	91.0
	$ 118.6

Operating lease assets of $115.6 million are included in other assets in the Consolidated Balance Sheet as of September 27, 2019. As of September 27, 2019, the weighted-average remaining lease-term was 6.4 years and the weighted-average discount rate was 5.4%.

As of September 27, 2019, there are additional operating lease commitments of approximately $2.3 million that have not yet commenced. The reconciliation of the maturities of the operating leases to the lease liabilities recorded in the Consolidated Balance Sheet as of September 27, 2019 are as follows (in millions):

Remainder of 2019	$	7.9
2020		31.3
2021		24.7
2022		20.4
2023		14.7
Thereafter		50.2
Total lease payments (1)	$	149.2
Less: Interest		(30.6)
Amounts recorded in the Consolidated Balance Sheet	$	118.6

The following represents future minimum lease obligations under non-cancelable operating leases as of December 31, 2018 (in millions):

2019	$	36.8
2020		27.6
2021		21.9
2022		16.8
2023		12.3
Thereafter		45.4
Total (1)	$	160.8

(1) Excludes $12.3 million of expected sublease income.

Note 8: Long-Term Debt

The Company's long-term debt consists of the following (annualized interest rates, in millions):

	As of			
	September 27, 2019		December 31, 2018	
Amended Credit Agreement:				
Revolving Credit Facility due 2024, interest payable monthly at 3.54% and 3.77%, respectively	$	800.0	$	400.0
Term Loan “B” Facility due 2026, interest payable monthly at 4.04% and 4.27%, respectively		1,635.0		1,134.5
1.00% Notes due 2020 (1)		690.0		690.0
1.625% Notes due 2023 (2)		575.0		575.0
Other long-term debt (3)		64.6		139.5
Gross long-term debt, including current maturities	$	3,764.6	$	2,939.0
Less: Debt discount (4)		(113.1)		(139.4)
Less: Debt issuance costs (5)		(36.1)		(33.5)
Net long-term debt, including current maturities	$	3,615.4	$	2,766.1
Less: Current maturities		(736.6)		(138.5)
Net long-term debt	$	2,878.8	$	2,627.6

(1) Interest is payable on June 1 and December 1 of each year at 1.00% annually.
(2) Interest is payable on April 15 and October 15 of each year at 1.625% annually.

(3) Consists of U.S. real estate mortgages, term loans, revolving lines of credit and other facilities at certain international locations where interest is payable weekly, monthly or quarterly, with interest rates ranging between 1.00% and 4.00% and maturity dates between 2019 and 2020.
(4) Debt discount of $26.0 million and $41.6 million for the 1.00% Notes, $76.3 million and $88.5 million for the 1.625% Notes and $10.8 million and $9.3 million for the Term Loan "B" Facility, in each case as of September 27, 2019 and December 31, 2018, respectively.
(5) Debt issuance costs of $3.6 million and $5.8 million for the 1.00% Notes, $7.3 million and $8.5 million for the 1.625% Notes and $25.2 million and $19.2 million for the Term Loan "B" Facility, in each case as of September 27, 2019 and December 31, 2018, respectively.

Amendments to the Amended Credit Agreement

On September 19, 2019, the Company entered into the Seventh Amendment to the Amended Credit Agreement (the "Seventh Amendment"). The Seventh Amendment provided for, among other things, modifications to the Amended Credit Agreement to (i) increase the amount that may be borrowed pursuant to the Term Loan "B" Facility by approximately $500.5 million, up to an aggregate principal amount of $1.635 billion; (ii) extend the maturity date of borrowings under the Term Loan "B" Facility to September 19, 2026; (iii) for any interest period ending after the date of the Seventh Amendment, increase the interest rate for borrowings under the Term Loan "B" Facility to (a) with respect to eurocurrency loans, a base rate per annum equal to the Adjusted LIBO Rate (as defined in the Amended Credit Agreement) plus an applicable margin of 2.00% and (b) with respect to alternate base rate loans, a base rate per annum equal to the Alternate Base Rate (as defined in the Amended Credit Agreement) plus an applicable margin equal to 1.00%; and (iv) make certain amendments providing for the determination of an alternate interest rate to the Adjusted LIBO Rate and/or the LIBO Rate (as defined in the Amended Credit Agreement) in the event of certain circumstances that result in the inability to adequately and reasonably determine such rates or such rates no longer adequately and fairly reflecting the cost of the applicable loans. In addition, pursuant to the Fifth Amendment (defined below), as a result of the extension described in (ii) above, the maturity date of borrowings under the Revolving Credit Facility was extended to June 12, 2024.

The Company utilized the additional borrowings pursuant to the Seventh Amendment to repay $500.0 million of the outstanding balance under the Revolving Credit Facility. In connection with the Seventh Amendment, the Company incurred fees to lenders, third parties, legal and other costs amounting to $17.5 million, of which a significant portion was capitalized. Management performed an analysis and recorded a loss on debt refinancing amounting to $5.8 million related to the Seventh Amendment, which included a proportionate write-off of the unamortized debt discount and issuance costs represented by the exited lenders, and the third party fees incurred for the transaction. The remaining costs will be amortized over the term of the loan using the effective interest method.

On August 15, 2019, the Company entered into the Sixth Amendment to the Amended Credit Agreement (the "Sixth Amendment"), which increased amounts that may be borrowed under the Revolving Credit Facility by $70.0 million to $1.97 billion. The Company did not incur significant costs in connection with the Sixth Amendment.

On June 12, 2019, the Company entered into the Fifth Amendment to the Amended Credit Agreement (the "Fifth Amendment"), with the subsidiary guarantors party thereto, Deutsche Bank AG New York Branch, as administrative agent, collateral agent and issuing lender, the "2019 Incremental Revolving Lenders" party thereto, and the "New Required Lenders" party thereto. The Fifth Amendment provided for, among other things, modifications to the Amended Credit Agreement to: (i) increase the amount that may be borrowed pursuant to the Revolving Credit Facility to $1.9 billion; (ii) extend the maturity date of borrowings under the Revolving Credit Facility to the later of (x) December 30, 2022 or (y) June 12, 2024 so long as the borrowings under the Term Loan "B" Facility have been fully repaid or otherwise redeemed, discharged or defeased on or prior to December 30, 2022, or if the maturity date of borrowings under the Term Loan "B" Facility has been extended prior to December 30, 2022, to a date no earlier than June 12, 2024; and (iii) amend certain financial covenants, including deleting the minimum Interest Coverage Ratio and increasing the maximum Consolidated Total Net Leverage Ratio (as such terms are defined in the Amended Credit Agreement) from 4.00 to 1.00 to 4.50 to 1.00 during any period of four consecutive fiscal quarters commencing after a Permitted Acquisition (as defined in the Amended Credit Agreement) with consideration in excess of $250.0 million.

The Company incurred third party, legal and other fees of $6.6 million and recorded $0.4 million as loss on extinguishment of debt related to the Fifth Amendment. The remaining unamortized debt issuance costs along with the additional costs incurred for the Fifth Amendment will be amortized straight-line over the term of the Revolving Credit Facility.

1.00% Notes due 2020

On June 8, 2015, the Company completed a private placement of $690.0 million of its 1.00% Notes to qualified institutional buyers pursuant to Rule 144A under the Securities Act. The 1.00% Notes are governed by an indenture between the Company, as the issuer, the guarantors named therein and Wells Fargo Bank, National Association, as trustee (the "1.00% Indenture"). The 1.00% Notes are convertible by holders into cash and shares of the Company's common stock at a conversion rate of 54.0643 shares of common stock per $1,000 principal amount of notes (subject to adjustment in certain events), which is equivalent to an initial conversion price of $18.50 per share of common stock. Pursuant to the 1.00% Indenture, among other conditions for conversion, the holders may submit their 1.00% Notes for conversion on or after September 1, 2020. Accordingly, the Company has reclassified the outstanding balance of the 1.00% Notes, net of discount and issuance costs, of $660.4 million, as a current portion of long-term debt.

The Company will settle conversion of all 1.00% Notes validly tendered for conversion in cash, shares of the Company's common stock or a combination of cash and shares to be determined by the Company.

Expected maturities relating to the Company's gross long-term debt (including current maturities) as of September 27, 2019 are as follows (in millions):

Period	Expected Maturities
Remainder of 2019	$ 14.5
2020	760.4
2021	16.4
2022	16.4
2023	591.4
Thereafter	2,365.5
Total	$ 3,764.6

The Company was in compliance with its covenants under all debt agreements as of September 27, 2019.

Note 9: Earnings Per Share and Equity

Earnings Per Share

Calculations of net income (loss) per common share attributable to ON Semiconductor Corporation are as follows (in millions, except per share data):

	Quarters Ended		Nine Months Ended	
	September 27, 2019	September 28, 2018	September 27, 2019	September 28, 2018
Net income (loss) attributable to ON Semiconductor Corporation	$ (60.7)	$ 166.9	$ 155.2	$ 461.8
Basic weighted-average common shares outstanding	410.4	425.5	411.0	426.1
Dilutive effect of share-based awards	—	3.9	1.7	4.7
Dilutive effect of convertible notes	—	5.9	2.6	10.4
Diluted weighted-average common shares outstanding	410.4	435.3	415.3	441.2
Net income (loss) per common share attributable to ON Semiconductor Corporation:				
Basic	$ (0.15)	$ 0.39	$ 0.38	$ 1.08
Diluted	$ (0.15)	$ 0.38	$ 0.37	$ 1.05

Basic income (loss) per common share is computed by dividing net income (loss) attributable to the Company by the weighted average number of common shares outstanding during the period.

To calculate the diluted weighted-average common shares outstanding, the number of incremental shares from the assumed exercise of stock options and assumed issuance of shares relating to RSUs is calculated by applying the treasury stock method. Share-based awards whose impact is considered to be anti-dilutive under the treasury stock method were excluded from the diluted net income per share calculation. The excluded number of anti-dilutive share-based awards was 2.1 million and 0.1 million for the quarters ended September 27, 2019 and September 28, 2018, respectively, and 2.1 million and 0.2 million for the nine months ended September 27, 2019 and September 28, 2018, respectively. The increase in the anti-dilutive share-based awards for the quarter and nine months ended September 27, 2019 was due to the net loss for the quarter ended September 27, 2019, as the inclusion would have the effect of decreasing the net loss per common share attributable to the Company.

The dilutive impact related to the 1.00% Notes and 1.625% Notes is determined in accordance with the net share settlement requirements, under which the Company's convertible notes are assumed to be convertible into cash up to the par value, with the excess of par value being convertible into common stock. During the quarter ended September 27, 2019, although the average share price exceeded the conversion price for the 1.00% Notes, the impact of the excess over par value was excluded in calculating the dilutive effect of the convertible notes as the impact would be anti-dilutive due to the net loss for the quarter ended September 27, 2019.

Equity

Share Repurchase Program

Under the Company's share repurchase program announced on November 15, 2018 (the “Share Repurchase Program”), the Company may repurchase up to $1.5 billion (exclusive of fees, commissions and other expenses) of the Company’s common stock over a period of four years from December 1, 2018, subject to certain contingencies. The Share Repurchase Program expires on December 31, 2022.

There were $13.1 million and $138.9 million in repurchases of the Company's common stock under the Share Repurchase Program during the quarter and nine months ended September 27, 2019, respectively. As of September 27, 2019, the authorized amount remaining under the Share Repurchase Program was $1,361.1 million. Also, under a previous share repurchase program, there were $75.0 million and $115.0 million in repurchases during the quarter and nine months ended September 28, 2018, respectively.

Information relating to the Share Repurchase Program during the quarter and nine months ended September 27, 2019 is as follows (in millions, except per share data):

	Quarter Ended September 27, 2019	Nine Months Ended September 27, 2019
Number of repurchased shares (1)	0.8	7.8
Aggregate purchase price	$ 13.1	$ 138.9
Fees, commissions and other expenses	0.1	0.1
Total cash used for share repurchases	$ 13.2	$ 139.0
Weighted-average purchase price per share (2)	$ 17.18	$ 17.89

(1) None of these shares had been reissued or retired as of September 27, 2019, but may be reissued or retired by the Company at a later date.
(2) Exclusive of fees, commissions and other expenses.

Shares for Restricted Stock Units Tax Withholding

Shares with a fair market value equal to the applicable amount of the employee withholding taxes due are withheld by the Company upon the vesting of RSUs to pay the applicable amount of employee withholding taxes and are considered common stock repurchases. The Company then pays the applicable amount of withholding taxes in cash. The amount remitted in the quarter and nine months ended September 27, 2019 was $4.4 million and $31.6 million, respectively, for which the Company withheld approximately 0.2 million and 1.5 million shares of common stock, respectively, that were underlying the RSUs that vested. The amount remitted in the quarter and nine months ended September 28, 2018 was $9.3 million and $29.2 million, respectively, for which the Company withheld approximately 0.4 million and 1.2 million shares of common stock, respectively,

that were underlying the RSUs that vested. Treasury stock is recorded at cost and is presented as a reduction of stockholders' equity in the accompanying consolidated financial statements. None of these shares had been reissued or retired as of September 27, 2019, but may be reissued or retired by the Company at a later date. These repurchases in connection with tax withholding upon vesting were not made under the Share Repurchase Program, and the amounts spent in connection with such deemed repurchases did not reduce the authorized amount remaining under the Share Repurchase Program.

Non-Controlling Interest

The Company owns 80% of the outstanding equity interests in a joint venture, Leshan-Phoenix Semiconductor Company Limited ("Leshan"), which operates assembly and test operations in Leshan, China. The results of Leshan have been consolidated in the Company's financial statements. As of December 31, 2018, the non-controlling interest balance was $22.5 million. This balance increased to $24.3 million as of September 27, 2019, resulting from the non-controlling interest's $1.8 million share of the earnings for the nine months ended September 27, 2019.

Note 10: Share-Based Compensation

Total share-based compensation expense related to the Company's stock options, RSUs, stock grant awards and the ESPP were recorded within the Consolidated Statements of Operations and Comprehensive Income as follows (in millions):

	Quarters Ended		Nine Months Ended	
	September 27, 2019	**September 28, 2018**	**September 27, 2019**	**September 28, 2018**
Cost of revenue	$ 2.3	$ 1.7	$ 7.7	$ 5.1
Research and development	3.4	3.4	12.4	10.6
Selling and marketing	2.7	3.3	11.1	10.5
General and administrative	6.3	9.5	30.5	33.2
Share-based compensation expense	$ 14.7	$ 17.9	$ 61.7	$ 59.4
Related income tax benefits at federal rate of 21%	(3.1)	(3.8)	(13.0)	(12.5)
Share-based compensation expense, net of taxes	$ 11.6	$ 14.1	$ 48.7	$ 46.9

At September 27, 2019, total unrecognized share-based compensation expense, net of estimated forfeitures, related to non-vested RSUs with time-based service conditions, market-based and performance-based vesting criteria was $77.6 million, which is expected to be recognized over a weighted-average period of 1.4 years. The total intrinsic value of stock options exercised during the quarter and nine months ended September 27, 2019 was $0.7 million and $3.1 million, respectively. The Company received cash of $0.4 million and $1.3 million, respectively, during the quarter and nine months ended September 27, 2019 from the exercise of stock options. Upon option exercise, vesting of RSUs, stock grant awards or completion of a purchase under the ESPP, the Company issues new shares of common stock.

Share-based compensation expense is based on awards that are ultimately expected to vest. Forfeitures are estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates. The annualized pre-vesting forfeiture rate for RSUs was estimated to be 5% during the quarters and nine months ended September 27, 2019 and September 28, 2018.

Shares Available

As of September 27, 2019 and December 31, 2018, there was an aggregate of 26.4 million and 33.7 million shares of common stock, respectively, available for grant under the Amended and Restated SIP. As of September 27, 2019 and December 31, 2018, there was an aggregate of 5.6 million and 6.5 million shares of common stock, respectively, available for issuance under the ESPP.

Restricted Stock Units

RSUs generally vest ratably over three years for service-based equity awards and over two years for performance-based equity awards and market-based equity awards, or a combination thereof, and are settled in shares of the Company's common stock upon vesting. A summary of the RSU transactions for the nine months ended September 27, 2019 is as follows (in millions, except per share data):

	Number of Shares	Weighted-Average Grant Date Fair Value Per Share
Non-vested RSUs at December 31, 2018	8.6	$ 16.59
Granted	4.7	21.69
Achieved	0.2	24.46
Released	(4.4)	14.28
Forfeited	(0.4)	19.61
Non-vested RSUs at September 27, 2019	8.7	20.56

Note 11: Commitments and Contingencies

Environmental Contingencies

The Company’s headquarters in Phoenix, Arizona are located on property that is a “Superfund” site, which is a property listed on the National Priorities List and subject to clean-up activities under the Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA”). Motorola and Freescale (acquired by NXP Semiconductors N.V.) have been involved in the clean-up activities of on-site solvent contaminated soil and groundwater and off-site contaminated groundwater pursuant to consent decrees with the State of Arizona. As part of the Company’s separation from Motorola in 1999, Motorola retained responsibility for this contamination, and Motorola and Freescale have agreed to indemnify the Company with respect to remediation costs and other costs or liabilities related to this matter. Any costs to the Company in connection with this matter have not been, and, based on the information available, are not expected to be, material.

The Company’s former front-end manufacturing location in Aizu, Japan is located on property where soil and ground water contamination was detected. The Company believes that the contamination originally occurred during a time when the facility was operated by a prior owner. The Company worked with local authorities to implement a remediation plan and has completed remaining remediation. The majority of the cost of remediation was covered by insurance. Any costs to the Company in connection with this matter have not been, and, based on the information available, are not expected to be, material.

The Company’s manufacturing facility in the Czech Republic has undergone remediation to respond to releases of hazardous substances that occurred during the years that this facility was operated by government-owned entities. The remediation projects consisted primarily of monitoring groundwater wells located on-site and off-site with additional action plans developed to respond in the event certain levels of contamination are exceeded. The government of the Czech Republic has agreed to indemnify the Company and its respective subsidiaries, subject to specified limitations, for remediation costs associated with this historical contamination. The Company has completed remediation on this project and, accordingly, has ceased all related monitoring efforts. Any costs to the Company in connection with this matter have not been, and, based on the information available, are not expected to be, material.

The Company’s design center in East Greenwich, Rhode Island is located on property that has localized soil contamination. In connection with the purchase of the facility, the Company entered into a Settlement Agreement and Covenant Not to Sue with the State of Rhode Island. This agreement requires that remedial actions be undertaken and a quarterly groundwater monitoring program be initiated by the former owners of the property. Any costs to the Company in connection with this matter have not been, and, based on the information available, are not expected to be, material.

As a result of the acquisition of AMIS in 2008, the Company is a “primary responsible party” to an environmental remediation and clean-up plan at AMIS’s former corporate headquarters in Santa Clara, California. Costs incurred by AMIS include implementation of the clean-up plan, operations and maintenance of remediation systems, and other project management costs. However, AMIS’s former parent company, a subsidiary of Nippon Mining, contractually agreed to indemnify AMIS and the Company for any obligations relating to environmental remediation and clean-up activities at this location. Any costs to the

Company in connection with this matter have not been, and, based on the information available, are not expected to be, material.

Through its acquisition of Fairchild, the Company acquired a facility in South Portland, Maine. This facility has ongoing environmental remediation projects to respond to certain releases of hazardous substances that occurred prior to the leveraged recapitalization of Fairchild from its former parent company, National Semiconductor Corporation, which is now owned by Texas Instruments Incorporated. Although the Company may incur certain liabilities with respect to these remediation projects, pursuant to a 1997 asset purchase agreement entered into in connection with the Fairchild recapitalization, National Semiconductor Corporation agreed to indemnify Fairchild, without limitation and for an indefinite period of time, for all future costs related to these projects. Under a 1999 asset purchase agreement pursuant to which Fairchild purchased the power device business of Samsung, Samsung agreed to indemnify Fairchild in an amount up to $150.0 million for remediation costs and other liabilities related to historical contamination at Samsung's Bucheon, South Korea operations. Any costs to the Company in connection with this matter have not been, and, based on the information available, are not expected to be, material.

Under a 2001 asset purchase agreement pursuant to which Fairchild purchased a manufacturing facility in Mountain Top, Pennsylvania, Intersil Corp. (subsequently acquired by Renesas Electronics Corporation) agreed to indemnify Fairchild for remediation costs and other liabilities related to historical contamination at the facility. Any costs to the Company incurred to respond to the above conditions and projects have not been, and are not expected to be, material and any future payments the Company makes in connection with such liabilities are not expected to be material.

The Company was notified by the Environmental Protection Agency ("EPA") that it has been identified as a "potentially responsible party" ("PRP") under CERCLA in the Chemetco Superfund matter. Chemetco, a defunct reclamation services supplier that operated in Hartford, Illinois, which is now a Superfund site, has performed reclamation services for the Company in the past. The EPA is pursuing Chemetco customers for contribution to the site clean-up activities. The Company has joined a PRP group, which is cooperating with the EPA in the evaluation and funding of the clean-up activities. Any costs to the Company in connection with this matter have not been, and, based on the information available, are not expected to be, material.

Financing Contingencies

In the ordinary course of business, the Company provides standby letters of credit or other guarantee instruments to certain parties initiated by either the Company or its subsidiaries, as required for transactions, including, but not limited to, material purchase commitments, agreements to mitigate collection risk, leases, utilities or customs guarantees. As of September 27, 2019, the Revolving Credit Facility included $15.0 million of availability for the issuance of letters of credit. As of September 27, 2019, there were letters of credit in the amount of $1.0 million outstanding under the Revolving Credit Facility, which reduces the Company's borrowing capacity. As of September 27, 2019, the Company also had outstanding guarantees and letters of credit outside of its Revolving Credit Facility totaling $11.5 million.

As part of obtaining financing in the ordinary course of business, the Company issued guarantees related to certain of its subsidiaries' finance lease obligations, equipment financing, lines of credit and real estate mortgages, which totaled $12.2 million as of September 27, 2019.

Based on historical experience and information currently available, the Company believes that it will not be required to make payments under the standby letters of credit or guarantee arrangements for the foreseeable future.

Indemnification Contingencies

The Company is a party to a variety of agreements entered into in the ordinary course of business pursuant to which it may be obligated to indemnify the other parties for certain liabilities that arise out of or relate to the subject matter of the agreements. Some of the agreements entered into by the Company require it to indemnify the other party against losses due to IP infringement, property damage (including environmental contamination), personal injury, failure to comply with applicable laws, the Company's negligence or willful misconduct or breach of representations and warranties and covenants related to such matters as title to sold assets.

The Company faces risk of exposure to warranty and product liability claims in the event that its products fail to perform as expected or such failure of its products results, or is alleged to result, in economic damage, bodily injury or property damage. In addition, if any of the Company's designed products are alleged to be defective, the Company may be required to participate in

their recall. Depending on the significance of any particular customer and other relevant factors, the Company may agree to provide more favorable rights to such customer for valid defective product claims.

The Company and its subsidiaries provide for indemnification of directors, officers and other persons in accordance with limited liability company operating agreements, certificates of incorporation, by-laws, articles of association or similar organizational documents, as the case may be. Section 145 of the Delaware General Corporation Law ("DGCL") authorizes a court to award, or a corporation's board of directors to grant, indemnity to directors and officers under certain circumstances and subject to certain limitations. The terms of Section 145 of the DGCL are sufficiently broad to permit indemnification under certain circumstances for liabilities, including reimbursement of expenses incurred, arising under the Exchange Act. As permitted by the DGCL, the Company's Amended and Restated Certificate of Incorporation, as amended (the "Certificate of Incorporation"), contains provisions relating to the limitation of liability and indemnification of directors and officers. The Certificate of Incorporation eliminates the personal liability of each of the Company's directors to the fullest extent permitted by Section 102(b)(7) of the DGCL, as it may be amended or supplemented, and provides that the Company will indemnify its directors and officers to the fullest extent permitted by Section 145 of the DGCL, as amended from time to time.

The Company has entered into indemnification agreements with each of its directors and executive officers. The form of agreement (the "Indemnification Agreement") provides, subject to certain exceptions and conditions specified in the Indemnification Agreement, that the Company will indemnify each indemnitee to the fullest extent permitted by Delaware law against all expenses, judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with a proceeding or claim in which such person is involved because of his or her status as one of the Company's directors or executive officers. In addition, the Indemnification Agreement provides that the Company will, to the extent not prohibited by law and subject to certain exceptions and repayment conditions, advance specified indemnifiable expenses incurred by the indemnitee in connection with such proceeding or claim. The foregoing description of the Indemnification Agreement does not purport to be complete and is qualified in its entirety by reference to the full and complete terms of the Indemnification Agreement, which is filed as Exhibit 10.1 to the Current Report on Form 8-K filed by the Company on February 25, 2016 and is incorporated by reference herein.

The Company also maintains directors' and officers' insurance policies that indemnify its directors and officers against various liabilities, including certain liabilities under the Exchange Act that might be incurred by any director or officer in his or her capacity as such.

The agreement and plan of merger relating to the acquisition of Fairchild (the "Fairchild Agreement") provides for indemnification and insurance rights in favor of Fairchild's then current and former directors, officers and employees. Specifically, the Company has agreed that, for no fewer than six years following the Fairchild acquisition, the Company will: (a) indemnify and hold harmless each such indemnitee against losses and expenses (including advancement of attorneys' fees and expenses) in connection with any proceeding asserted against the indemnified party in connection with such person's servings as a director, officer, employee or other fiduciary of Fairchild or its subsidiaries prior to the effective time of the acquisition; (b) maintain in effect all provisions of the certificate of incorporation or bylaws of Fairchild or any of its subsidiaries or any other agreements of Fairchild or any of its subsidiaries with any indemnified party regarding elimination of liability, indemnification of officers, directors and employees and advancement of expenses in existence on the date of the Fairchild Agreement for acts or omissions occurring prior to the effective time of the acquisition; and (c) subject to certain qualifications, deliver to Fairchild's then current directors and officers an insurance and indemnification policy that provides coverage for events occurring prior to the effective time of the acquisition that is no less favorable than Fairchild's then-existing policy; or, if insurance coverage that is no less favorable is unavailable, the best available coverage.

Similarly, the agreement and plan of merger relating to the acquisition of Quantenna (the "Quantenna Agreement") provides for indemnification and insurance rights in favor of Quantenna's then current and former directors, officers, employees and agents. Specifically, the Company has agreed that, for no fewer than six years following the Quantenna acquisition, the Company will: (a) indemnify and hold harmless each such indemnified party to the fullest extent permitted by Delaware law in the event of any threatened or actual claim suit, action, proceeding or investigation against the indemnified party based in whole or in part on, or pertaining to, such person's serving as a director, officer, employee or agent of Quantenna or its subsidiaries or predecessors prior to the effective time of the acquisition or in connection with the Quantenna Agreement; (b) maintain in effect provisions of the certificate of incorporation and bylaws of Quantenna and each of its subsidiaries regarding the elimination of liability of directors and indemnification of officers, directors and employees that are no less advantageous to the intended beneficiaries than the corresponding provisions in the certificate of incorporation and bylaws of Quantenna and each of its subsidiaries in existence on the date of the Quantenna Agreement; and (c) obtain and fully pay the premium for a non-cancelable extension of

directors’ and officers’ liability coverage of Quantenna’s directors’ and officers’ policies and Quantenna’s fiduciary liability insurance policies in effect as of the date of the Quantenna Agreement.

While the Company’s future obligations under certain agreements may contain limitations on liability for indemnification, other agreements do not contain such limitations and under such agreements it is not possible to predict the maximum potential amount of future payments due to the conditional nature of the Company’s obligations and the unique facts and circumstances involved in each particular agreement. Historically, payments made by the Company under any of these indemnities have not had a material effect on the Company’s business, financial condition, results of operations or cash flows. Additionally, the Company does not believe that any amounts that it may be required to pay under these indemnities in the future will be material to the Company’s business, financial position, results of operations, or cash flows.

Legal Matters

From time to time, the Company is party to various legal proceedings arising in the ordinary course of business, including indemnification claims, claims of alleged infringement of patents, trademarks, copyrights and other intellectual property rights, claims of alleged non-compliance with contract provisions and claims related to alleged violations of laws and regulations. The Company regularly evaluates the status of the legal proceedings in which it is involved to assess whether a loss is probable or there is a reasonable possibility that a loss, or an additional loss, may have been incurred and determines if accruals are appropriate. If accruals are not appropriate, the Company further evaluates each legal proceeding to assess whether an estimate of possible loss or range of possible loss can be made for disclosure. Although litigation is inherently unpredictable, the Company believes that it has adequate provisions for any probable and estimable losses. Nevertheless, it is possible that the Company’s consolidated financial position, results of operations or liquidity could be materially and adversely affected in any particular period by the resolution of a legal proceeding. The Company’s estimates do not represent its maximum exposure. Legal expenses related to defense, negotiations, settlements, rulings and advice of outside legal counsel are expensed as incurred.

The Company is currently involved in a variety of legal matters that arise in the ordinary course of business. Based on information currently available, except as disclosed below, the Company is not involved in any pending or threatened legal proceedings that it believes could reasonably be expected to have a material adverse effect on its financial condition, results of operations or liquidity. The litigation process and the administrative process at the United States Patent and Trademark Office (the “USPTO”) are inherently uncertain, and the Company cannot guarantee that the outcome of these matters will be favorable to it.

Patent Litigation with Power Integrations, Inc.

As of September 27, 2019, there were eleven outstanding civil litigation proceedings with Power Integrations, Inc. (“PI”), five of which were pending between PI and various Fairchild entities (including Fairchild Semiconductor International, Inc., Fairchild Semiconductor Corporation, and Fairchild (Taiwan) Corporation, f/k/a System General Corporation (collectively referred to in this sub-section as “Fairchild”), prior to the acquisition of Fairchild. There were also numerous outstanding administrative proceedings between the parties at the USPTO in which each party challenged the validity of the other party’s patents.

On October 19, 2019, the Company and PI entered into a Settlement Agreement (the “Settlement Agreement”) pursuant to which the parties agreed to withdraw all outstanding legal and administrative disputes on the terms set forth in a binding term sheet previously entered into by and among the Company, SCI LLC and PI on October 4, 2019 (the “Term Sheet”). Pursuant to the Settlement Agreement, the Company paid PI $175.0 million in cash on October 22, 2019. In addition, each party agreed to release the other party from any claims to damages or monetary relief for alleged acts of patent infringement across the various patent infringement litigations and not to file any additional action for legal or equitable relief until June 30, 2023. Neither party granted any licenses to the other. The Company believes that the settlement will likely result in meaningful cost savings due to the elimination of litigation costs related to the pending civil litigation proceedings with PI. Further, the Company believes that the settlement will eliminate distractions to management resulting from uncertainty of the pending court actions and ensuing appeals, allowing management to focus more fully on pursuing business opportunities. See also Note 17: “Subsequent Events.”

Power Integrations, Inc. v. Fairchild Semiconductor International, Inc. et al. (October 20, 2004, Delaware, 1:04-cv-01371-LPS): PI filed this lawsuit in 2004 in the U.S. District Court for the District of Delaware against Fairchild, alleging that certain of Fairchild’s pulse width modulation (“PWM”) integrated circuit products infringed U.S. patents owned by PI. The lawsuit

sought a permanent injunction as well as money damages for Fairchild's alleged infringement. In October 2006, a jury returned a willful infringement verdict and assessed damages against Fairchild. Fairchild voluntarily stopped U.S. sales and importation of those products in 2007 and has been offering replacement products since 2006. In December 2008, the judge overseeing the case reduced the jury's 2006 damages award from $34.0 million to approximately $6.1 million and ordered a new trial on the issue of willfulness. Following the new trial held in June 2009, the court found Fairchild's infringement to have been willful, and in January 2011 the court awarded PI final damages in the amount of $12.2 million. Fairchild appealed the final damages award, willfulness finding, and other issues to the U.S. Court of Appeals for the Federal Circuit. In March 2013, the Court of Appeals vacated substantially all of the damages award, ruling that there was no basis upon which a reasonable jury could find Fairchild liable for induced infringement. The Court of Appeals also vacated the earlier judgment of willful patent infringement. The full Court of Appeals and the Supreme Court of the United States later denied PI's request to review the Court of Appeals ruling. The Court of Appeals instructed the lower court to conduct further proceedings to determine damages based on approximately $0.8 million worth of sales and imports of affected products, and to re-assess its finding that the infringement was willful. In December 2017, the lower court reinstated the willfulness finding but stayed resolution of the other outstanding issues, including damages. In June 2018, the Supreme Court of the United States decided *WesternGeco LLC v. ION Geophysical Corp.*, in which the Court determined that certain extraterritorial conduct may be relevant to some United States patent litigation. On October 4, 2018, the lower court issued an order finding that *WesternGeco* implicitly overruled the Court of Appeals' 2013 decision in this case and stated that PI would be allowed to seek recovery of worldwide damages in a future retrial on damages. The lower court also, however, certified its October 4, 2018 order for interlocutory review by the Court of Appeals. The Court of Appeals has accepted the interlocutory appeal. As of September 27, 2019, briefing in that appeal was completed, and the parties were awaiting oral argument.

Power Integrations, Inc. v. Fairchild Semiconductor International, Inc. et al. (May 23, 2008, Delaware, 1:08-cv-00309-LPS): This lawsuit was initiated by PI in 2008 in the U.S. District Court for the District of Delaware against Fairchild, alleging that certain other PWM products infringed several U.S. patents owned by PI. On October 14, 2008, Fairchild filed a patent infringement lawsuit against PI in the U.S. District Court for the District of Delaware, alleging that certain PI products infringed U.S. patents owned by Fairchild. Each lawsuit included claims for money damages and a request for a permanent injunction. These two lawsuits were consolidated and heard together in a jury trial in April 2012, during which the jury found that PI infringed one of the two U.S. patents owned by Fairchild and upheld the validity of both of the Fairchild patents. In the same verdict, the jury found that Fairchild infringed two of four U.S. patents asserted by PI and that Fairchild had induced its customers to infringe the asserted patents. (The court later ruled that Fairchild infringed one other asserted PI patent that the jury found was not infringed.) The jury also upheld the validity of the asserted PI patents, and the court entered a permanent injunction against Fairchild. Willfulness and damages were not considered in the April 2012 trial but were reserved for subsequent proceedings. Fairchild and PI appealed the liability phase of this litigation to the U.S. Court of Appeals for the Federal Circuit, which heard arguments in July 2016 and issued a decision in December 2016. In the decision, the appeals court vacated the jury's finding that Fairchild induced infringement of PI's patents, held that one of PI's patents was invalid, vacated the permanent injunction against Fairchild, reversed the jury's finding that PI infringed the Fairchild patent, and remanded the case back to the lower court for further proceedings consistent with these rulings. A second jury trial was held in this matter in November 2018, with the jury finding that Fairchild induced infringement of both remaining PI patents and that Fairchild's infringement was willful. The jury also awarded PI damages in the amount of $24.3 million. In the parties' post-trial motions, PI sought a trebling of the jury verdict in view of the jury's willfulness finding, pre- and post-judgment interest, and its attorneys' fees, whereas Fairchild sought judgment as a matter of law in its favor, or a new trial, on inducement, willfulness, and damages. On July 22, 2019, the court denied all post-trial motions other than PI's request for pre-judgment interest, which the court granted and awarded PI $7.1 million, resulting in a total judgment for PI in the amount of approximately $32.0 million. As of September 27, 2019, the Company disagreed with the court's denial of the Company's post-trial motions and was preparing an appeal.

Power Integrations, Inc. v. Fairchild Semiconductor International Inc. et al. (November 4, 2009, Northern District of California, 3:09-cv-05235-MMC): In 2009, PI sued Fairchild in the U.S. District Court for the Northern District of California, alleging that several of Fairchild's products infringe three of PI's patents. Fairchild filed counterclaims asserting that PI infringed two Fairchild patents. During the initial trial on this matter in 2014, a jury found that Fairchild willfully infringed two PI patents, awarded PI $105.0 million in damages and found that PI did not infringe any Fairchild patent. In September 2014, the court granted a motion filed by Fairchild that sought to set aside the jury's determination that it acted willfully, and held that, as a matter of law, Fairchild's actions were not willful. In November 2014, in response to another post-trial motion filed by Fairchild, the trial court ruled that the jury lacked sufficient evidence on which to base its damages award and, consequently, vacated the $105.0 million verdict and ordered a second trial on damages. The second damages trial was held in December 2015, in which a jury awarded PI $139.8 million in damages. Fairchild filed a number of post-trial motions challenging the

second damages verdict, but the court ruled against Fairchild on these motions and awarded PI approximately $7.0 million in pre-judgment interest. Following the court’s rulings on these issues, PI moved the court to reinstate the jury’s willfulness finding and sought enhanced damages and attorneys’ fees. On January 23, 2017, the court reinstated the jury’s willful infringement finding, but denied PI’s motion for enhanced damages and attorneys’ fees in its entirety. The Company appealed the infringement and damages judgments, and in July 2018, the U.S. Court of Appeals for the Federal Circuit affirmed the judgment with respect to infringement of both PI patents but vacated the damages judgment because PI had presented legally insufficient evidence to support its damages claim. The appellate court thus remanded the case back to the lower court for a new trial on damages. In August 2018, PI requested that the Federal Circuit rehear, *en banc*, the issues of the vacated damages award, but this request was denied in September 2018. In December 2018, PI filed a petition for certiorari in the Supreme Court of the United States for review of the Federal Circuit's decision, but that request was denied in February 2019. All claims of the two PI patents found to be infringed by Fairchild were previously determined to be unpatentable in several *inter partes* review administrative proceedings ("IPRs") described below. The unpatentability findings, however, were recently vacated by the Court of Appeals for the Federal Circuit, as also described below.

Fairchild Semiconductor International Inc. et al. v. Power Integrations, Inc. (May 1, 2012, Delaware, 1:12-cv-00540-LPS): In May 2012, Fairchild sued PI in the U.S. District Court for the District of Delaware, and alleged that various PI products infringe Fairchild’s U.S. patents. PI filed counterclaims of patent infringement against Fairchild, asserting five PI patents. Of those five patents, the court granted Fairchild summary judgment of no infringement on one, and PI voluntarily withdrew a second and was forced to remove a third during the trial, which began in May 2015. In that trial, the jury found that PI induced infringement of Fairchild’s patent rights and awarded Fairchild $2.4 million in damages. The same jury found that Fairchild infringed a PI patent and awarded PI damages of $0.1 million. Based on the December 2016 appellate court decision in the litigation filed in Delaware in 2008 (described above), on July 13, 2017, the District Court vacated the jury’s finding that PI infringed Fairchild’s patent. A jury trial was held in November 2018 to resolve several outstanding issues prior to appeal in this case. The jury in that trial found that Fairchild induced infringement of the sole PI patent Fairchild had previously been found to infringe and awarded PI damages in the amount of $0.7 million. In the parties’ post-trial motions, PI sought pre- and post-judgment interest and a permanent injunction, whereas Fairchild sought judgment as a matter of law in its favor, or a new trial, on inducement and damages. On July 22, 2019, the court denied all post-trial motions. As of September 27, 2019, the Company disagreed with the court’s denial of the Company’s post-trial motions and was preparing an appeal.

Power Integrations, Inc. v. Fairchild Semiconductor International Inc. et al. (October 21, 2015, Northern District of California, 3:15-cv-04854 MMC): In 2015, PI filed another complaint for patent infringement against Fairchild in the U.S. District Court for the Northern District of California, alleging Fairchild's products willfully infringe two PI patents. In the complaint, PI sought a permanent injunction, unspecified damages, a trebling of damages, and an accounting of costs and fees. Fairchild answered and counterclaimed, alleging infringement by PI of four Fairchild patents related to aspects of PI’s products, and also seeking damages and a permanent injunction. The lawsuit is in its earliest stages, and had previously been stayed pending the outcome of the Company’s administrative challenges, which are described below, to the two PI patents asserted against Fairchild. In March 2019, however, the stay was lifted and this case was set for trial in November 2020. As of September 27, 2019, fact discovery was ongoing in this lawsuit, and PI had also filed administrative challenges to Fairchild’s asserted patents.

Power Integrations, Inc. v. ON Semiconductor Corporation, and Semiconductor Components Industries, LLC (November 1, 2016, Northern District of California, 5:16-cv-06371-BLF and 5:17-cv-03189): On August 11, 2016, ON Semiconductor Corporation and SCI LLC (collectively referred to in this sub-section as “ON Semi”) filed a lawsuit against PI in the U.S. District Court for the District of Arizona, alleging that PI infringed six patents and seeking a permanent injunction and money damages for the alleged infringement. The lawsuit also sought a claim for a declaratory judgment that ON Semi does not infringe several of PI’s patents. Rather than responding to ON Semi’s lawsuit in Arizona, PI filed a separate lawsuit in the U.S. District Court for the Northern District of California in November 2016, alleging that ON Semi infringes six PI patents, including two of the three PI patents in ON Semi’s declaratory judgment claims from Arizona. PI also moved the Arizona court to dismiss ON Semi’s lawsuit, or in the alternative to transfer the lawsuit to California. Following various procedural motions, ON Semi’s Arizona action has been transferred to the U.S. District Court for the Northern District of California and consolidated with PI’s November 2016 lawsuit, in which PI has subsequently asserted a claim for infringement on the last of the three PI patents in ON Semi’s original declaratory judgment claims. In late 2018, the parties received a claim construction order, which included a finding that claims from several of PI’s asserted patents are invalid. Fact discovery is complete, and summary judgment motions have been filed and argued, and the Court issued a summary judgment order in August 2019. As of September 27, 2019, expert discovery concerning infringement, validity, and damages was ongoing, and the trial was scheduled for December 2019.

ON Semiconductor Corporation, Inc. and Semiconductor Components Industries, LLC v. Power Integrations, Inc. (March 9, 2017, District of Delaware, 1:17-cv-00247-LPS-CJB): On March 9, 2017, ON Semi filed a lawsuit against PI in the U.S. District Court for the District of Delaware, alleging that PI's InnoSwitch family of products infringe six of ON Semi's U.S. patents. Following some procedural motions, PI has since counterclaimed alleging infringement by ON Semi of seven of PI's U.S. patents. One of those seven patents was dropped by PI because it is asserted against ON Semi in a separate litigation. Both parties seek money damages and a permanent injunction. In late 2018, the parties received a claim construction order, following which ON Semi was forced to stipulate to non-infringement of two of ON Semi's original six patents. In January 2019, PI voluntarily dropped their claims of infringement on two of PI's patents, leaving each party with four asserted patents. Fact discovery is complete. As of September 27, 2019, summary judgment motions were pending and the trial was scheduled for February 2020.

Semiconductor Components Industries, LLC v. Power Integrations, Inc. (November 2017, Taiwan Intellectual Property Court, 106-Ming-min-bu-Tzu-238): In November 2017, SCI LLC filed a lawsuit against PI in Taiwan, alleging infringement by PI of three of ON Semi's Taiwanese patents. On April 16, 2019, a first-instance judgment was rendered finding that none of the asserted patents were infringed by PI. As of September 27, 2019, the Company disagreed with this first-instance finding had filed a second-instance review by the Taiwanese IP Court to appeal the adverse first-instance judgment.

Semiconductor Components Industries, LLC v. Power Integrations Netherlands B.V., Huizhou Jinhu Industrial Development Co., Ltd., and Shanghai Jiading Anting Chuanglian Communication Devices Shop ((2019) Hu 73 Zhi Min Chu 679): On August 8, 2019, SCI LLC filed a patent infringement lawsuit against Power Integrations Netherlands B.V., Huizhou Jinhu Industrial Development Co., Ltd., and Shanghai Jiading Anting Chuanglian Communication Devices Shop before Shanghai Intellectual Property Court. The complaint is in the process of being served.

Semiconductor Components Industries, LLC v. Power Integrations Netherlands B.V., Huizhou Jinhu Industrial Development Co., Ltd., and Shanghai Jiading Anting Chuanglian Communication Devices Shop ((2019) Hu 73 Zhi Min Chu 680): On August 8, 2019, SCI LLC filed a patent infringement lawsuit against Power Integrations Netherlands B.V., Huizhou Jinhu Industrial Development Co., Ltd., and Shanghai Jiading Anting Chuanglian Communication Devices Shop before Shanghai Intellectual Property Court. The complaint is in the process of being served.

Semiconductor Components Industries, LLC v. Huizhou Jinhu Industrial Development Co., Ltd. and Beijing Jiudazhou Communication Equipment Co., Ltd. (2019-1361, Beijing IP Bureau): On August 13, 2019, SCI LLC filed a patent infringement case against Huizhou Jinhu Industrial Development Co., Ltd. and Beijing Jiudazhou Communication Equipment Co., Ltd. before Beijing Intellectual Property Bureau. On August 28, 2019, Huizhou Jinhu Industrial Development Co., Ltd. filed two petitions, one for extension of deadline to submit its statement of defense and the other for bringing in Power Integrations and Power Cube Technology Limited as co-respondents. On September 17, 2019, an oral hearing was concluded. Currently, the parties are waiting for further instructions from the Beijing Intellectual Property Bureau.

Administrative Challenges to PI's Patents:

As of September 27, 2019, in addition to the eight court proceedings described above, there were numerous IPRs between PI and ON Semi/Fairchild. Each of these IPRs sought to invalidate certain claims asserted in the various court proceedings. For the two IPRs filed by ON Semi involving claims asserted in the case filed in 2009 in the Northern District of California, the USPTO previously issued a Final Written Decision finding that all of the claims challenged in those proceedings are unpatentable. The USPTO also previously issued Final Written Decisions in ON Semi's favor for seven additional IPRs initiated by ON Semi. PI appealed the adverse unpatentability decisions in all but one of these nine initial IPRs brought by ON Semi, and the Court of Appeals for the Federal Circuit recently held that ON Semi's initial IPRs were time-barred by 35 U.S.C. § 315(b). As of September 27, 2019, ON Semi disagreed with that finding and planned to further appeal. In the meantime, the Supreme Court of the United States recently granted certiorari in an unrelated case, *Dex Media, Inc. v. Click-to-Call*, in which the Supreme Court will determine whether time-bar determinations under 35 U.S.C. § 315(b) are appealable.

Following the initial round of ON Semi IPRs described immediately above, both PI and ON Semi filed several additional IPRs (none of which implicate the 35 U.S.C. § 315(b) time-bar issue described above). In six of the proceedings initiated by PI, the USPTO instituted a review of six ON Semi/Fairchild patents that were being asserted against PI. In two of those six proceedings, the USPTO found all of the claims challenged by PI to be unpatentable. In one of those two cases, ON Semi filed an appeal to challenge the unpatentability finding, but elected to forego an appeal in the other case. With regard to a third instituted proceeding initiated by PI, the USPTO found one challenged patent claim unpatentable over the prior art and two claims patentable. PI was pursuing an appeal for this third administrative proceeding, but ON Semi decided to forego an appeal

with respect to the claim that was found unpatentable. With regard to a fourth instituted proceeding initiated by PI, the USPTO recently found some patent claims unpatentable over the prior art and some claims patentable, and ON Semi appealed the unpatentability findings. With regard to a fifth instituted proceeding, the UPSTO recently found some patent claims unpatentable and one claim patentable, and ON Semi was evaluating whether to appeal. In two proceedings initiated by ON Semi, the USPTO found all of the claims challenged by ON Semi to be unpatentable. In another proceeding initiated by ON Semi, the USPTO found some patent claims unpatentable and some claims patentable. As of September 27, 2019, all of the other administrative proceedings between PI and the Company remained pending or were terminated without institution of an administrative trial by the USPTO.

Litigation with AcBel Polytech, Inc.

On November 27, 2013, Fairchild and Fairchild Semiconductor Corporation were named as defendants in a complaint filed by AcBel Polytech, Inc. (“AcBel”) in the U.S. District Court for the District of Massachusetts. The lawsuit alleged a number of causes of action, including breach of warranty, fraud, negligence and strict liability, and has been docketed as *AcBel Polytech, Inc. v. Fairchild Semiconductor International, Inc. et al*, Case # 1:13-CV-13046-DJC. On December 10, 2016, the Court issued an order on the Company’s motion for summary judgment dismissing all of AcBel’s claims except for claims alleging breach of implied warranties. A bench trial was held in June 2017. On December 27, 2017, the Court rendered a verdict in favor of the Fairchild defendants on the remaining implied warranty claims. AcBel appealed the Court’s ruling, and on September 11, 2018, the U.S. Court of Appeals for the First Circuit heard arguments in this matter from Fairchild and AcBel. On June 20, 2019, the First Circuit vacated the decision of the District Court in favor of Fairchild and remanded the matter for additional discovery and a new trial. The First Circuit also reversed the District Court’s dismissal of the fraud, fraudulent misrepresentation and negligent misrepresentation claims at the summary judgment phase and remanded those claims for trial. The Company will continue to vigorously defend itself in this matter.

In parallel to the litigation with AcBel, Fairchild filed an arbitration against its distributor, Synnex Technology International Corp (“Synnex”), in Hong Kong in response to Synnex’s failure to pass along Fairchild’s limited warranty to AcBel. The arbitration was held in December 2017. On August 17, 2018, the arbitrator ruled in favor of Fairchild and ordered Synnex to indemnify Fairchild for any damages Fairchild is required to pay AcBel in connection with the litigation between Fairchild and AcBel. On November 16, 2018, Synnex appealed the arbitrator’s ruling.

Intellectual Property Matters

The Company faces risk of exposure from claims of infringement of the IP rights of others. In the ordinary course of business, the Company receives letters asserting that the Company’s products or components breach another party’s rights. Such letters may request royalty payments from the Company, that the Company cease and desist using certain intellectual property or other remedies.

Note 12: Fair Value Measurements

Fair Value of Financial Instruments

The following table summarizes the Company's financial assets and liabilities, excluding pension assets, measured at fair value on a recurring basis (in millions):

	As of	Fair Value Hierarchy		
Description	**September 27, 2019**	**Level 1**	**Level 2**	**Level 3**
Assets:				
Cash and cash equivalents:				
Demand and time deposits	$ 26.0	$ 26.0	$ —	$ —
Money market funds	0.4	0.4	—	—

Description	As of December 31, 2018	Fair Value Hierarchy Level 1	Level 2	Level 3
Assets:				
Cash and cash equivalents:				
Demand and time deposits	$ 21.2	$ 21.2	$ —	$ —
Money market funds	0.2	0.2	—	—

Other

The carrying amounts of other current assets and liabilities, such as accounts receivable and accounts payable, approximate fair value based on the short-term nature of these instruments.

Fair Value of Long-Term Debt, Including Current Portion

The carrying amounts and fair values of the Company's long-term borrowings (excluding finance lease obligations, real estate mortgages and equipment financing) are as follows (in millions):

	As of September 27, 2019		December 31, 2018	
	Carrying Amount	Fair Value	Carrying Amount	Fair Value
Long-term debt, including current portion				
Convertible notes	$ 1,151.8	$ 1,491.1	$ 1,120.6	$ 1,368.5
Long-term debt	2,463.2	2,431.3	1,615.1	1,585.9

The fair values of the Company's 1.00% Notes and 1.625% Notes were estimated based on market prices in active markets (Level 1). The fair value of other long-term debt was estimated based on discounting the remaining principal and interest payments using current market rates for similar debt (Level 2) at September 27, 2019 and December 31, 2018.

Note 13: Financial Instruments

Foreign Currencies

As a multinational business, the Company's transactions are denominated in a variety of currencies. When appropriate, the Company uses forward foreign currency contracts to reduce its overall exposure to the effects of currency fluctuations on its results of operations and cash flows. The Company's policy prohibits trading in currencies for which there are no underlying exposures and entering into trades for any currency to intentionally increase the underlying exposure.

The Company primarily hedges existing assets and liabilities associated with transactions currently on its balance sheet, which are undesignated hedges for accounting purposes.

As of September 27, 2019 and December 31, 2018, the Company had net outstanding foreign exchange contracts with notional amounts of $188.9 million and $157.3 million, respectively. Such contracts were obtained through financial institutions and were scheduled to mature within one to three months from the time of purchase. Management believes that these financial instruments should not subject the Company to increased risks from foreign exchange movements because gains and losses on these contracts should offset losses and gains on the underlying assets, liabilities and transactions to which they are related.

The following summarizes the Company's net foreign exchange positions in U.S. Dollars (in millions):

	As of			
	September 27, 2019		December 31, 2018	
	Buy (Sell)	Notional Amount	Buy (Sell)	Notional Amount
Japanese Yen	46.9	46.9	29.9	29.9
Philippine Peso	35.6	35.6	30.1	30.1
Chinese Yuan	29.6	29.6	20.4	20.4
Korean Won	19.3	19.3	20.8	20.8
Czech Koruna	13.7	13.7	9.2	9.2
Other Currencies - Buy	39.5	39.5	39.4	39.4
Other Currencies - Sell	(4.3)	4.3	(7.5)	7.5
	$ 180.3	$ 188.9	$ 142.3	$ 157.3

Amounts receivable or payable under the contracts are included in other current assets or accrued expenses and other current liabilities in the accompanying Consolidated Balance Sheet. For the quarters ended September 27, 2019 and September 28, 2018, realized and unrealized foreign currency transactions totaled a gain of $0.3 million and $0.8 million, respectively. For the nine months ended September 27, 2019 and September 28, 2018, realized and unrealized foreign currency transactions totaled a loss of $3.8 million and $5.8 million, respectively. The realized and unrealized foreign currency transactions are included in other income and expenses in the Company's Consolidated Statement of Operations and Comprehensive Income.

Cash Flow Hedges

All derivatives are recognized on the Company’s Consolidated Balance Sheet at their fair value and classified based on the instrument's maturity date.

Interest rate risk

The Company uses interest rate swap contracts to mitigate its exposure to interest rate fluctuations. On February 25, 2019, the Company entered into additional interest rate swap agreements for notional amounts totaling $1.0 billion (effective as of December 31, 2019) and $750.0 million (effective as of December 31, 2020) with expiry dates of December 31, 2020 and December 31, 2021, respectively. The notional amounts of the interest rate swap agreements outstanding as of September 27, 2019 and September 28, 2018 amounted to $1.0 billion and $750.0 million, respectively. The Company performed effectiveness assessments and concluded that there was no ineffectiveness during the quarters ended September 27, 2019 and September 28, 2018.

A number of the Company’s current debt agreements, including the Amended Credit Agreement, have an interest rate tied to LIBOR, which is expected to be discontinued after 2021. While some of the Company’s debt agreements provide procedures for determining an alternative base rate in the event that LIBOR is discontinued, but not all do so. Regardless, there can be no assurances as to what alternative base rates may be and whether such base rate will be more or less favorable than LIBOR and any other unforeseen impacts of the potential discontinuation of LIBOR. The Company intends to monitor the developments with respect to the potential phasing out of LIBOR after 2021 and work with its lenders to ensure any transition away from LIBOR will have minimal impact on its financial condition, but can provide no assurances regarding the impact of the discontinuation of LIBOR.

Foreign currency risk

The purpose of the Company's foreign currency hedging activities is to protect the Company from the risk that the eventual cash flows resulting from transactions in foreign currencies will be adversely affected by changes in exchange rates. The Company enters into forward contracts that are designated as foreign currency cash flow hedges of selected forecasted payments denominated in currencies other than U.S. Dollars.

For the quarters and nine months ended September 27, 2019 and September 28, 2018, the Company did not have outstanding derivatives for its foreign currency exposure designated as cash flow hedges.

Convertible Note Hedges

The Company entered into convertible note hedges in connection with the issuance of the 1.00% Notes and 1.625% Notes.

Other

At September 27, 2019, the Company had no outstanding commodity derivatives, currency swaps or options relating to either its debt instruments or investments. The Company does not hedge the value of its equity investments in its subsidiaries or affiliated companies. The Company is exposed to credit-related losses if counterparties to hedge contracts fail to perform their obligations. As of September 27, 2019, the counterparties to the Company's hedge contracts were held at financial institutions that the Company believes to be highly-rated, and no credit-related losses are anticipated.

Note 14: Income Taxes

The Company determines its interim income tax provision by applying the estimated effective income tax rate expected to be applicable for the full fiscal year to the income before income taxes for the period. In determining the full year estimate, the Company does not include the estimated impact of unusual and/or infrequent items, which may cause significant variations in the customary relationship between income tax expense and income before income taxes. Significant judgment is exercised in determining the income tax provision due to transactions, credits and calculations where the ultimate tax determination is uncertain.

The Company's effective tax rate for the quarter ended September 27, 2019 was a benefit of 29.1%, which differs from the U.S. federal income tax rate of 21.0%, primarily due to the benefit from the release of reserves and interest for uncertain tax positions in foreign jurisdictions.

The Company's effective tax rate for the nine months ended September 27, 2019 was 19.0%, which differs from the U.S. federal income tax rate of 21.0%, primarily due to the benefit from the release of reserves and interest related to uncertain tax positions in foreign jurisdictions partially offset by foreign taxes for which the Company will not receive a U.S. tax credit.

The Company recognizes interest and penalties related to unrecognized tax benefits in tax expense on the Company's Consolidated Statement of Operations and Comprehensive Income. The Company had approximately $4.5 million and $5.1 million of net interest and penalties accrued at September 27, 2019 and September 28, 2018, respectively.

Although the Company cannot predict the timing of resolution with taxing authorities, if any, it believes it is reasonably possible that $1.5 million of its unrecognized tax benefits will be reduced in the next 12 months due to settlement with tax authorities or expiration of the applicable statute of limitations.

Tax years prior to 2016 are generally not subject to examination by the Internal Revenue Service (the "IRS") except for items involving tax attributes that have been carried forward to tax years whose statute of limitations remains open. The Company is not currently under IRS examination. For state tax returns, the Company is generally not subject to income tax examinations for tax years prior to 2015. The Company is also subject to routine examinations by various foreign jurisdictions in which it operates. With respect to jurisdictions outside the United States, the Company's subsidiaries are generally no longer subject to income tax audits for tax years prior to 2008. The Company is currently under audit in certain jurisdictions, including, but not limited to, China, the Czech Republic, the Philippines and the United Kingdom.

Note 15: Changes in Accumulated Other Comprehensive Loss

Amounts comprising the Company's accumulated other comprehensive loss and reclassifications are as follows (in millions):

	Currency Translation Adjustments	Effects of Cash Flow Hedges	Total
Balance as of December 31, 2018	$ (42.5)	$ 4.6	$ (37.9)
Other comprehensive income prior to reclassifications	0.5	(21.2)	(20.7)
Amounts reclassified from accumulated other comprehensive loss	—	3.0	3.0
Net current period other comprehensive income (1)	0.5	(18.2)	(17.7)
Balance as of September 27, 2019	$ (42.0)	$ (13.6)	$ (55.6)

(1) Effects of cash flow hedges are net of $4.8 million of tax benefit for the nine months ended September 27, 2019.

Amounts which were reclassified from accumulated other comprehensive loss to the Company's Consolidated Statement of Operations and Comprehensive Income are as follows (net of tax of $0.1 million and $0.6 million for the quarter and nine months ended September 27, 2019, respectively, and $0.2 million and $0.4 million for the quarter and nine months ended September 28, 2018, respectively, in millions):

	Amounts Reclassified from Accumulated Other Comprehensive Loss				
	Quarters Ended		Nine Months Ended		
	September 27, 2019	September 28, 2018	September 27, 2019	September 28, 2018	Statements of Operations and Comprehensive Income Line Item
Interest rate swaps	$ (0.3)	$ (1.0)	$ (3.0)	$ (1.8)	Interest expense
Total reclassifications	$ (0.3)	$ (1.0)	$ (3.0)	$ (1.8)	

Note 16: Supplemental Disclosures

Supplemental Disclosure of Cash Flow Information

Certain of the Company's cash and non-cash activities are as follows (in millions):

	Nine Months Ended	
	September 27, 2019	September 28, 2018
Non-cash financing activity:		
Liability incurred for purchase of business	$ 17.9	$ —
Non-cash activities:		
Capital expenditures in accounts payable and other liabilities	$ 146.7	$ 204.5
Right-of-use assets obtained in exchange of lease liabilities (1)	15.0	
Cash (received) paid for:		
Interest income	$ (7.8)	$ (3.3)
Interest expense	61.9	56.2
Income taxes	46.2	45.0
Operating lease payments in operating cash flows (1)	28.0	

(1) These disclosures are not applicable for the nine months ended September 28, 2018 due to the method of adoption of the New Leasing Standard, which is applicable for periods after December 31, 2018.

The following is a reconciliation of the captions in the Consolidated Balance Sheets to the Consolidated Statements of Cash Flows (in millions):

	As of			
	September 27, 2019	December 31, 2018	September 28, 2018	December 31, 2017
Consolidated Balance Sheets:				
Cash and cash equivalents	$ 928.7	$ 1,069.6	$ 951.0	$ 949.2
Restricted cash (included in other current assets)	—	17.5	17.5	17.4
Cash, cash equivalents and restricted cash in Consolidated Statements of Cash Flows	$ 928.7	$ 1,087.1	$ 968.5	$ 966.6

The restricted cash balance, which included the consideration held in escrow for the acquisition of Aptina in 2014, was released during the quarter ended September 27, 2019 upon satisfaction of certain outstanding items contained in the merger agreement for such acquisition.

Note 17: Subsequent Event

On October 19, 2019, the Company and PI entered into the Settlement Agreement pursuant to which the parties agreed to withdraw all outstanding legal and administrative disputes on the terms set forth in the Term Sheet. Pursuant to the Settlement Agreement, the Company paid PI $175.0 million in cash on October 22, 2019. For more information about the Settlement Agreement, see Note 11: “Commitments and Contingencies.”

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

You should read the following discussion in conjunction with our audited historical consolidated financial statements, which are included in the 2018 Form 10-K and our unaudited consolidated financial statements for the fiscal quarter ended September 27, 2019 included elsewhere in this Form 10-Q. Management's Discussion and Analysis of Financial Condition and Results of Operations contains statements that are forward-looking. These statements are based on current expectations and assumptions that are subject to risk, uncertainties and other factors. Actual results could differ materially because of the factors discussed below or elsewhere in this Form 10-Q. See Part II, Item 1A. "Risk Factors" of this Form 10-Q and Part I, Item 1A. "Risk Factors" of the 2018 Form 10-K.

Company Highlights for the Quarter Ended September 27, 2019

- Total revenue of $1,381.8 million
- Gross margin of 34.4%
- Settled litigation with PI and paid $175.0 million in cash on October 22, 2019
- Net loss of $0.15 per diluted share
- Cash and cash equivalents of $928.7 million

Executive Overview

Industry Overview

We participate in unit and revenue surveys and use data summarized by WSTS, an industry research firm, to evaluate overall semiconductor market trends and to track our progress against the market in the areas we provide semiconductor components. The most recently published estimates from WSTS project a compound annual growth rate in our serviceable addressable market of approximately 3.2% through 2021. These are not our projections and may not be indicative of actual results. We, like many of our competitors, view this information as helpful third party projections and estimates.

ON Semiconductor Overview

ON Semiconductor is driving innovation in energy-efficient electronics. Our extensive portfolio of sensors, power management, connectivity, custom and SoC, analog, logic, timing and discrete devices helps customers efficiently solve their design challenges in advanced electronic systems and products. Our power management and motor driver semiconductor components control, convert, protect and monitor the supply of power to the different elements within a wide variety of electronic devices. Our custom ASICs and SoC devices use analog, MCU, DSP, mixed-signal and advanced logic capabilities to enable the application and uses of many of our automotive, medical, aerospace/defense, consumer and industrial customers' products. Our signal management semiconductor components provide high-performance clock management and data flow management for precision computing, communications and industrial systems. Our growing portfolio of sensors, including image sensors, radar and LiDAR, provide advanced solutions for automotive, industrial and IoT applications. Our standard semiconductor components serve as "building blocks" within virtually all types of electronic devices. These various products fall into the logic, analog, discrete, image sensors, IoT, Wi-Fi and memory categories used by the WSTS group.

We serve a broad base of end-user markets, including automotive, communications, computing, consumer, medical, industrial, networking, telecom and aerospace/defense. Our devices are found in a wide variety of end products, including automobiles, smartphones, data center and enterprise servers, wearable medical devices, personal computers, industrial building and home automation systems, factory automation, consumer white goods, security and surveillance systems, machine vision and robotics, LED lighting, power supplies, networking and telecom equipment, medical diagnostics and imaging and hearing health.

Our portfolio of devices enables us to offer advanced ICs and the "building block" components that deliver system level functionality and design solutions. We shipped approximately 48.9 billion units during the nine months ended September 27, 2019, as compared to 57.1 billion units during the nine months ended September 28, 2018. We offer micro packages, which provide increased performance characteristics while reducing the critical board space inside today's ever-shrinking electronic devices and power modules, delivering improved energy efficiency and reliability for a wide variety of medium and high power applications. We believe that our ability to offer a broad range of products, combined with our applications and global manufacturing and logistics network, provides our customers with single source purchasing on a cost-effective and timely basis.

Acquisition of Quantenna

On June 19, 2019, we completed our acquisition of Quantenna Communications, Inc. (“Quantenna”) pursuant to the definitive Agreement and Plan of Merger with each of Quantenna and Raptor Operations Sub, Inc., our wholly-owned subsidiary (“Raptor”), which provided for the merger of Quantenna with Raptor, whereby Quantenna continued as the surviving corporation and our wholly-owned subsidiary. Following the acquisition, Quantenna changed its name to ON Semiconductor Connectivity Solutions, Inc. The purchase price totaled $1,039.3 million, of which $1,021.4 million was paid through September 27, 2019, with the proceeds from a $900.0 million draw against our Revolving Credit Facility and cash on hand. We believe the acquisition of Quantenna creates a strong platform for addressing connectivity solutions for industrial IoT by combining our expertise in power management and bluetooth technologies with Quantenna's Wi-Fi technologies and software capabilities.

Operating and Reporting Segments

As many products are sold into different end-markets, the total revenue reported for a segment is not indicative of actual sales in the end-market associated with that segment, but rather is the sum of the revenue from the product lines assigned to that segment. From time to time, we reassess the alignment of our product families and devices to our operating segments and may move product families or individual devices from one operating segment to another. As of September 27, 2019, we were organized into the following three operating and reporting segments: PSG, ASG and ISG.

Business and Macroeconomic Environment

The semiconductor industry has traditionally been highly cyclical, has often experienced significant downturns in connection with, or in anticipation of, declines in general economic conditions, and may experience significant uncertainty and volatility in the future. We believe our business today is driven more by secular growth drivers and not solely by macroeconomic and industry cyclicality, as was the case historically. However, in the future, we could again experience period-to-period fluctuations in operating results due to general industry or economic conditions.

During the quarter ended September 27, 2019, geopolitical and macroeconomic factors continued to adversely impact product demand in the semiconductor industry. In light of these factors, we expect that such demand for our products could be adversely affected in the short-term. We also believe, however, that secular megatrends in the automotive, industrial, and cloud-power end-markets will continue to drive long-term growth in the semiconductor industry.

In response to the above industry trends, we are investing and taking other measures to further strengthen our position in the automotive, industrial, and cloud-power end-markets. In an effort to mitigate adverse demand trends in the semiconductor industry, we have focused on maintaining our high standards for operational excellence. Additionally, we have historically pursued, and expect to continue to pursue, cost-saving initiatives to align our overall cost structure, capital investments and other expenditures with our expected revenue, spending and capacity levels based on our current sales and manufacturing projections. We have recognized efficiencies from previously implemented restructuring activities and programs and continue to implement profitability enhancement programs to improve our cost structure. We have historically taken significant actions to align our overall cost structure with our expectations of market conditions by focusing on synergies-related cost reductions arising from each of our acquisitions. However, there can be no assurances that we will adequately forecast economic conditions or that we will effectively align our cost structure, capital investments and other expenditures with our revenue, spending and capacity levels in the future.

Results of Operations

Quarter Ended September 27, 2019 compared to the Quarter Ended September 28, 2018

The following table summarizes certain information relating to our operating results that has been derived from our unaudited consolidated financial statements (in millions):

	Quarters Ended		
	September 27, 2019	September 28, 2018	Dollar Change
Revenue	$ 1,381.8	$ 1,541.7	$ (159.9)
Cost of revenue (exclusive of amortization shown below)	906.6	945.1	(38.5)
Gross profit	475.2	596.6	(121.4)
Operating expenses:			
Research and development	172.8	166.2	6.6
Selling and marketing	74.7	83.1	(8.4)
General and administrative	67.8	73.3	(5.5)
Litigation settlement	169.5	—	169.5
Amortization of acquisition-related intangible assets	29.9	28.0	1.9
Restructuring, asset impairments and other, net	4.4	4.4	—
Total operating expenses	519.1	355.0	164.1
Operating income (loss)	(43.9)	241.6	(285.5)
Other income (expense), net:			
Interest expense	(40.7)	(31.2)	(9.5)
Interest income	2.3	1.3	1.0
Loss on debt refinancing and prepayment	(5.8)	(0.6)	(5.2)
Gain on divestiture of business	—	0.4	(0.4)
Licensing income	—	1.0	(1.0)
Other income (expense)	3.5	3.5	—
Other income (expense), net	(40.7)	(25.6)	(15.1)
Income (loss) before income taxes	(84.6)	216.0	(300.6)
Income tax (provision) benefit	24.6	(48.9)	73.5
Net income (loss)	(60.0)	167.1	(227.1)
Less: Net income attributable to non-controlling interest	(0.7)	(0.2)	(0.5)
Net income (loss) attributable to ON Semiconductor Corporation	$ (60.7)	$ 166.9	$ (227.6)

Revenue

Revenue was $1,381.8 million and $1,541.7 million for the quarters ended September 27, 2019 and September 28, 2018, respectively, representing a decrease of $159.9 million, or approximately 10%.

Revenue by operating and reporting segments was as follows (dollars in millions):

	Quarter Ended September 27, 2019	As a % of Total Revenue (1)	Quarter Ended September 28, 2018	As a % of Total Revenue (1)
PSG	$ 687.9	49.8 %	$ 810.2	52.6 %
ASG	508.9	36.8 %	531.7	34.5 %
ISG	185.0	13.4 %	199.8	13.0 %
Total revenue	$ 1,381.8		$ 1,541.7	

(1) Certain amounts may not total due to rounding of individual amounts.

Revenue from PSG decreased by $122.3 million, or approximately 15%, for the quarter ended September 27, 2019 compared to the quarter ended September 28, 2018. The revenue in our Integrated Circuits Division, Protection and Signal Division and High Power Division, decreased by $40.2 million, $38.9 million and $32.2 million, respectively. This was due to the change in demand in the respective end-markets.

Revenue from ASG decreased by $22.8 million, or approximately 4%, for the quarter ended September 27, 2019 compared to the quarter ended September 28, 2018. The revenue from our Industrial and Offline Power Division, Signal Processing, Wireless and Medical Division, and Mobile and Computing Division decreased by $35.9 million, $17.0 million and $14.3 million, respectively, reflective of the end-user demand in the markets served. This decrease was offset by an increase of $42.5 million of sales in our newly acquired Quantenna Division.

Revenue from ISG decreased by $14.8 million, or approximately 7%, for the quarter ended September 27, 2019 compared to the quarter ended September 28, 2018. The revenue from our Industrial Solutions Division and Automotive Solutions Division decreased by $8.7 million and $6.2 million, respectively, both due to decreased demand.

Revenue by geographic location, including local sales made by operations within each area, based on sales billed from the respective region, was as follows (dollars in millions):

	Quarter Ended September 27, 2019	As a % of Total Revenue (1)	Quarter Ended September 28, 2018	As a % of Total Revenue (1)
Singapore	$ 446.8	32.3 %	$ 573.1	37.2 %
Hong Kong	356.9	25.8 %	361.0	23.4 %
United Kingdom	223.0	16.1 %	241.6	15.7 %
United States	193.3	14.0 %	221.6	14.4 %
Other	161.8	11.7 %	144.4	9.4 %
Total	$ 1,381.8		$ 1,541.7	

(1) Certain amounts may not total due to rounding of individual amounts.

Gross Profit and Gross Margin (exclusive of amortization of acquisition-related intangible assets described below)

Our gross profit by operating and reporting segments was as follows (dollars in millions):

	Quarter Ended September 27, 2019	As a % of Segment Revenue (1)	Quarter Ended September 28, 2018	As a % of Segment Revenue (1)
PSG	$ 226.7	33.0 %	$ 297.9	36.8 %
ASG	207.7	40.8 %	224.3	42.2 %
ISG	67.6	36.5 %	80.7	40.4 %
Gross profit	$ 502.0		$ 602.9	
Unallocated manufacturing costs	(26.8)	(1.9)%	(6.3)	(0.4)%
Consolidated gross profit	$ 475.2	34.4 %	$ 596.6	38.7 %

(1) Certain amounts may not total due to rounding of individual amounts.

Our gross profit was $475.2 million for the quarter ended September 27, 2019 compared to $596.6 million for the quarter ended September 28, 2018. Gross profit decreased by $121.4 million, or approximately 20%.

Gross profit as a percentage of revenue decreased to approximately 34.4% for the quarter ended September 27, 2019 from approximately 38.7% for the quarter ended September 28, 2018. The decrease was primarily due to a decrease in sales volume and a decline in average selling price as well as the expensing of $19.0 million excess over book value of inventory, commonly referred to as the fair market value step-up, from the Quantenna acquisition.

Operating Expenses

Research and development expenses were $172.8 million for the quarter ended September 27, 2019, as compared to $166.2 million for the quarter ended September 28, 2018, representing an increase of $6.6 million, or approximately 4%. This increase

was primarily due to the expenses in our newly acquired Quantenna Division partially offset by a decrease in variable compensation for the rest of the Company.

Selling and marketing expenses were $74.7 million for the quarter ended September 27, 2019, as compared to $83.1 million for the quarter ended September 28, 2018, representing a decrease of $8.4 million, or approximately 10%. This was primarily the result of a decrease in variable compensation for the period, partially offset by the expenses in our Quantenna Division.

General and administrative expenses were $67.8 million for the quarter ended September 27, 2019, as compared to $73.3 million in the quarter ended September 28, 2018, representing a decrease of $5.5 million, or approximately 8%. This was primarily the result of a decrease in variable compensation for the period, partially offset by the expenses in our Quantenna Division.

Other Operating Expenses

Litigation Settlement

Litigation settlement expense was $169.5 million for the quarter ended September 27, 2019, as compared to zero for the quarter ended September 28, 2018. On October 19, 2019, we entered into the Settlement Agreement with PI pursuant to which the parties agreed to withdraw all outstanding legal and administrative disputes. Pursuant to the Settlement Agreement, we paid PI $175.0 million in cash on October 22, 2019, of which $5.5 million was previously accrued.

Amortization of Acquisition-Related Intangible Assets

Amortization of acquisition-related intangible assets was $29.9 million and $28.0 million for the quarters ended September 27, 2019 and September 28, 2018, respectively, representing a period-over-period increase of $1.9 million, or approximately 7%.

Restructuring, Asset Impairments and Other, Net

Restructuring, asset impairments and other, net was $4.4 million during each of the quarters ended September 27, 2019 and September 28, 2018, attributable to the restructuring programs in effect during the period.

Interest Expense

Interest expense increased by $9.5 million to $40.7 million during the quarter ended September 27, 2019, as compared to $31.2 million during the quarter ended September 28, 2018, primarily due to an increase in the outstanding balances of long-term debt incurred for the acquisition of Quantenna. Our average gross long-term debt balance (including current maturities) for the quarter ended September 27, 2019 was $3,785.1 million at a weighted-average interest rate of approximately 4.3%, as compared to $2,932.1 million at a weighted-average interest rate of approximately 4.3% for the quarter ended September 28, 2018.

Loss on debt refinancing and prepayment

Loss on debt refinancing and prepayment was $5.8 million for the quarter ended September 27, 2019, as compared to $0.6 million for the quarter ended September 28, 2018. During the quarter ended September 27, 2019, we recorded a loss on debt refinancing and prepayment of $5.8 million related to the Seventh Amendment. The loss during the quarter ended September 28, 2018 related to the write-off of unamortized discount and issuance costs related to the partial pay-down of the Term Loan "B" Facility.

Gain on Divestiture of business

Gain on divestiture of business was zero for the quarter ended September 27, 2019, as compared to $0.4 million for the quarter ended September 28, 2018.

Licensing Income

Licensing income was zero for the quarter ended September 27, 2019, as compared to $1.0 million for the quarter ended September 28, 2018. The licensing income during the quarter ended September 28, 2018 was attributable to various licensing agreements.

Other Expense

Other expense was unchanged with an expense of $3.5 million for the quarter ended September 27, 2019 and September 28, 2018, respectively.

Income Tax Provision

We recorded an income tax benefit of $24.6 million and provision of $48.9 million during the quarters ended September 27, 2019 and September 28, 2018, respectively.

The income tax benefit for the quarter ended September 27, 2019 consisted of a net benefit of $17.2 million for income and withholding taxes of certain of our foreign and domestic operations, $5.8 million benefit relating to the release of reserves and interest for uncertain tax positions in foreign jurisdictions related to prior years, $2.2 million benefit relating to other prior year adjustments, partially offset by $0.4 million of additional interest and penalties for uncertain tax positions and $0.2 million relating to net equity award tax shortfalls.

The income tax provision for the quarter ended September 28, 2018 consisted of $57.1 million for income and withholding taxes of certain of our foreign and domestic operations and $0.1 million relating to equity award tax shortfalls, offset by discrete benefits of $4.7 million relating to the release of reserves and interest for uncertain tax positions, $1.8 million relating to the resolution of a foreign tax dispute, and $1.8 million of net tax benefits relating to SAB 118 and other prior year adjustments.

We expect our effective tax rate, before discrete items, to be between 22% and 26% until we fully utilize all of our U.S. federal net operating losses. The primary difference between our effective tax rate and the federal statutory rate of 21% is due to foreign taxes for which we will not receive a U.S. tax credit until our U.S. federal net operating losses are fully utilized. Once our U.S. federal net operating losses are fully utilized, we expect our future effective tax rate, before discrete items, to approximate, or be lower than, the federal statutory rate of 21%. We anticipate our U.S. federal net operating losses and credits will be fully utilized by 2021.

Our cash paid for income taxes, as a percentage of income before income taxes (“Cash Tax Rate”), is significantly lower than our effective tax rate due to the current utilization of our U.S. federal net operating losses and credits. We expect our future Cash Tax Rate to approximate our effective tax rate once our U.S. federal net operating losses and credits are fully utilized.

We continue to maintain a full valuation allowance on our U.S. state deferred tax assets and a valuation allowance on foreign net operating losses and tax credits in certain other foreign jurisdictions, a substantial portion of which relate to Japan net operating losses, which are projected to expire prior to utilization.

For additional information, see Note 14: "Income Taxes" in the notes to the unaudited consolidated financial statements included elsewhere in this Form 10-Q.

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Results of Operations

Nine Months Ended September 27, 2019 compared to the Nine Months Ended September 28, 2018

The following table summarizes certain information relating to our operating results that has been derived from our unaudited consolidated financial statements (in millions):

	Nine Months Ended		
	September 27, 2019	September 28, 2018	Dollar Change
Revenue	$ 4,116.1	$ 4,375.2	$ (259.1)
Cost of revenue (exclusive of amortization shown below)	2,628.2	2,706.2	(78.0)
Gross profit	1,487.9	1,669.0	(181.1)
Operating expenses:			
Research and development	471.6	488.5	(16.9)
Selling and marketing	225.4	242.6	(17.2)
General and administrative	214.8	218.8	(4.0)
Litigation settlement	169.5	—	169.5
Amortization of acquisition-related intangible assets	83.1	83.3	(0.2)
Restructuring, asset impairments and other, net	28.1	8.0	20.1
Goodwill and intangible asset impairment	1.6	3.3	(1.7)
Total operating expenses	1,194.1	1,044.5	149.6
Operating income	293.8	624.5	(330.7)
Other income (expense), net:			
Interest expense	(106.1)	(95.3)	(10.8)
Interest income	7.8	3.3	4.5
Loss on debt refinancing and prepayment	(6.2)	(4.6)	(1.6)
Gain on divestiture of business	—	5.0	(5.0)
Licensing income	—	32.9	(32.9)
Other income (expense)	4.6	0.5	4.1
Other income (expense), net	(99.9)	(58.2)	(41.7)
Income before income taxes	193.9	566.3	(372.4)
Income tax provision	(36.9)	(102.4)	65.5
Net income	157.0	463.9	(306.9)
Less: Net income attributable to non-controlling interest	(1.8)	(2.1)	0.3
Net income attributable to ON Semiconductor Corporation	$ 155.2	$ 461.8	$ (306.6)

Revenue

Revenue was $4,116.1 million and $4,375.2 million for the nine months ended September 27, 2019 and September 28, 2018, respectively, representing a decrease of $259.1 million, or approximately 5.9%.

Revenue by operating and reporting segments was as follows (dollars in millions):

	Nine Months Ended September 27, 2019	As a % of Total Revenue (1)	Nine Months Ended September 28, 2018	As a % of Total Revenue (1)
PSG	$ 2,093.0	50.8 %	$ 2,251.0	51.4 %
ASG	1,465.0	35.6 %	1,541.1	35.2 %
ISG	558.1	13.6 %	583.1	13.3 %
Total revenue	$ 4,116.1		$ 4,375.2	

(1) Certain amounts may not total due to rounding of individual amounts.

Revenue from PSG decreased by $158.0 million, or approximately 7.0%, for the nine months ended September 27, 2019 compared to the nine months ended September 28, 2018. The revenue in our Integrated Circuits Division, Protection and Signal Division and High Power Division, decreased by $76.0 million, $73.7 million and $72.9 million, respectively, which was partially offset by an increase of $47.5 million and $24.3 million in revenue in our Foundry services and Power MOSFET Division, respectively. These revenue changes were due to the change in demand in the respective end-markets.

Revenue from ASG decreased by $76.1 million, or approximately 4.9%, for the nine months ended September 27, 2019 compared to the nine months ended September 28, 2018. The revenue from our Industrial and Offline Power Division and our Signal Processing, Wireless and Medical Division decreased by $77.7 million and $35.2 million, respectively both reflective of the end-user demand in the markets served. This was partially offset by an increase of $44.7 million of sales in our newly acquired Quantenna Division.

Revenue from ISG decreased by $25.0 million, or approximately 4.3%, for the nine months ended September 27, 2019 compared to the nine months ended September 28, 2018. The revenue in our Industrial Solutions Division decreased by $24.4 million due to decreased demand.

Revenue by geographic location, including local sales made by operations within each area, based on sales billed from the respective region, was as follows (dollars in millions):

	Nine Months Ended September 27, 2019	As a % of Total Revenue (1)	Nine Months Ended September 28, 2018	As a % of Total Revenue (1)
Singapore	$ 1,251.9	30.4 %	$ 1,439.8	32.9 %
Hong Kong	1,043.3	25.3 %	1,126.8	25.8 %
United Kingdom	699.3	17.0 %	717.6	16.4 %
United States	630.4	15.3 %	638.3	14.6 %
Other	491.2	11.9 %	452.7	10.3 %
Total	$ 4,116.1		$ 4,375.2	

(1) Certain amounts may not total due to rounding of individual amounts.

Gross Profit and Gross Margin (exclusive of amortization of acquisition-related intangible assets described below)

Our gross profit by operating and reporting segments was as follows (dollars in millions):

	Nine Months Ended September 27, 2019	As a % of Segment Revenue (1)	Nine Months Ended September 28, 2018	As a % of Segment Revenue (1)
PSG	$ 731.4	34.9 %	$ 804.2	35.7 %
ASG	592.5	40.4 %	650.4	42.2 %
ISG	208.4	37.3 %	245.0	42.0 %
Gross profit	$ 1,532.3		$ 1,699.6	
Unallocated manufacturing costs	(44.4)	(1.1)%	(30.6)	(0.7)%
Consolidated gross profit	$ 1,487.9	36.1 %	$ 1,669.0	38.1 %

(1) Certain amounts may not total due to rounding of individual amounts.

Our gross profit was $1,487.9 million for the nine months ended September 27, 2019 compared to $1,669.0 million for the nine months ended September 28, 2018. Gross profit decreased by $181.1 million, or approximately 10.9%.

Gross profit as a percentage of revenue decreased to approximately 36.1% for the nine months ended September 27, 2019 from approximately 38.1% for the nine months ended September 28, 2018. The decrease was primarily due to a decrease in sales volume and product mix as well as the expensing of $19.6 million excess over book value of inventory, commonly referred to as the fair market value step-up, from the Quantenna acquisition.

Operating Expenses

Research and development expenses were $471.6 million for the nine months ended September 27, 2019, as compared to $488.5 million for the nine months ended September 28, 2018, representing a decrease of $16.9 million, or approximately 3.5%. This was primarily related to a decrease in variable compensation partially offset by expenses in our Quantenna Division.

Selling and marketing expenses were $225.4 million for the nine months ended September 27, 2019, as compared to $242.6 million for the nine months ended September 28, 2018, representing a decrease of $17.2 million, or approximately 7.1%. This was primarily related to a decrease in variable compensation, partially offset by expenses in our Quantenna Division.

General and administrative expenses were $214.8 million for the nine months ended September 27, 2019, as compared to $218.8 million in the nine months ended September 28, 2018, representing a decrease of $4.0 million, or approximately 1.8%. The decrease in variable compensation was partially offset by an increase in acquisition-related expenses. Quantenna general and administrative expenses are included in the overall change for the year.

Other Operating Expenses

Litigation Settlement

Litigation settlement expense was $169.5 million for the nine months ended September 27, 2019, as compared to zero for the nine months ended September 28, 2018. On October 19, 2019, we entered into the Settlement Agreement with PI pursuant to which the parties agreed to withdraw all outstanding legal and administrative disputes. Pursuant to the Settlement Agreement, we paid PI $175.0 million in cash on October 22, 2019, of which $5.5 million was previously accrued.

Amortization of Acquisition-Related Intangible Assets

Amortization of acquisition-related intangible assets was $83.1 million and $83.3 million for the nine months ended September 27, 2019 and September 28, 2018, respectively, representing a period-over-period decrease of $0.2 million, or approximately 0.2%.

Restructuring, Asset Impairments and Other, Net

Restructuring, asset impairments and other, net was $28.1 million for the nine months ended September 27, 2019, as compared to $8.0 million for the nine months ended September 28, 2018, representing an increase of $20.1 million. The increase was primarily attributable to post-Quantenna restructuring activities as well as certain restructuring actions undertaken by us aimed at cost savings, primarily through workforce reductions.

Goodwill and Intangible Asset Impairment

Intangible asset impairment was $1.6 million for the nine months ended September 27, 2019, as compared to $3.3 million for the nine months ended September 28, 2018. During the nine months ended September 27, 2019, we abandoned two of our previously capitalized IPRD projects and recorded an impairment charge of $1.6 million. We recorded a goodwill impairment charge of $3.3 million during the nine months ended September 28, 2018.

Interest Expense

Interest expense increased by $10.8 million to $106.1 million during the nine months ended September 27, 2019, as compared to $95.3 million during the nine months ended September 28, 2018, primarily due to an increase in the outstanding long-term debt balance related to the acquisition of Quantenna. Our average gross long-term debt balance (including current maturities) for the nine months ended September 27, 2019 was $3,351.7 million at a weighted-average interest rate of approximately 4.2%, as compared to $3,037.5 million at a weighted-average interest rate of approximately 4.2% for the nine months ended September 28, 2018.

Loss on Debt Refinancing and Prepayment

Loss on debt refinancing was $6.2 million for the nine months ended September 27, 2019, as compared to $4.6 million for the nine months ended September 28, 2018.

During the nine months ended September 27, 2019, we recorded a loss on debt refinancing and prepayment of $0.4 million related to the Fifth Amendment and $5.8 million related to the Seventh Amendment. We recorded a debt extinguishment charge of $2.6 million related to the refinancing of the Term Loan "B" Facility and expensed $1.4 million of unamortized debt discount

and issuance costs attributed to the partial pay-down of the Term Loan "B" Facility during the nine months ended September 28, 2018.

Gain on Divestiture of Business

Gain on divestiture of business was zero for the nine months ended September 27, 2019, as compared to $5.0 million for the nine months ended September 28, 2018. During the nine months ended September 28, 2018, we divested the transient voltage suppressing diodes business we acquired from Fairchild to TSC America, Inc. and recorded a gain of $4.6 million.

Licensing Income

Licensing income was zero for the nine months ended September 27, 2019, as compared to $32.9 million for the nine months ended September 28, 2018. The licensing income during the nine months ended September 28, 2018 was attributable to various licensing agreements.

Other Income (Expense)

Other income (expense) increased by $4.1 million to income of $4.6 million for the nine months ended September 27, 2019, compared to an expense of $0.5 million for the nine months ended September 28, 2018. The increase is primarily attributable to the $7.8 million of indemnification gains as a result of the resolution of a foreign tax dispute and other IP related claims recognized during the nine months ended September 27, 2019 partially offset by equity method income recognized during the nine months ended September 28, 2018.

Income Tax Provision

We recorded an income tax provision of $36.9 million and $102.4 million during the nine months ended September 27, 2019 and September 28, 2018, respectively.

The income tax provision for the nine months ended September 27, 2019 consisted of $44.5 million for income and withholding taxes of certain of our foreign and domestic operations, $6.0 million relating to the resolution of a foreign tax dispute and $2.6 million of new reserves and interest on existing reserves for uncertain tax positions in foreign jurisdictions. These amounts were offset by discrete benefits of $9.2 million relating to the release of reserves and interest for uncertain tax positions in foreign jurisdictions related to prior years and $5.2 million relating to equity award excess tax benefits and $1.8 million of prior year adjustments.

The income tax provision for the nine months ended September 28, 2018 consisted of $144.9 million for income and withholding taxes of certain of our foreign and domestic operations, partially offset by $19.4 million relating to a net increase in deferred tax assets and release of valuation allowance against deferred tax assets expected to be realized in the foreseeable future, discrete benefits of $12.2 million relating to the release of reserves and interest for uncertain tax positions, $7.0 million relating to equity award excess tax benefits, $2.1 million of net tax benefits relating to SAB 118 and other prior year adjustments and $1.8 million relating to the resolution of a foreign tax dispute.

We expect our effective tax rate, before discrete items, to be between 22% and 26% until we fully utilize all of our U.S. federal net operating losses. The primary difference between our effective tax rate and the federal statutory rate of 21% is due to foreign taxes for which we will not receive a U.S. tax credit until our U.S. federal net operating losses are fully utilized. Once our U.S. federal net operating losses are fully utilized, we expect our future effective tax rate, before discrete items, to approximate, or be lower than, the federal statutory rate of 21%. We anticipate our U.S. federal net operating losses and credits will be fully utilized by 2021.

Our Cash Tax Rate is significantly lower than our effective tax rate due to the current utilization of our U.S. federal net operating losses and credits. We expect our future Cash Tax Rate to approximate our effective tax rate once our U.S. federal net operating losses and credits are fully utilized.

We continue to maintain a full valuation allowance on our U.S. state deferred tax assets and a valuation allowance on foreign net operating losses and tax credits in certain other foreign jurisdictions, a substantial portion of which relate to Japan net operating losses, which are projected to expire prior to utilization.

For additional information, see Note 14: "Income Taxes" in the notes to the unaudited consolidated financial statements included elsewhere in this Form 10-Q.

Liquidity and Capital Resources

This section includes a discussion and analysis of our cash requirements, off-balance sheet arrangements, contingencies, sources and uses of cash, operations, working capital and long-term assets and liabilities.

Contractual Obligations

During the quarter ended June 28, 2019, we incurred additional commitments of $330.0 million relating to the pending acquisition of a manufacturing facility in addition to the commitments disclosed in the contractual obligations table, including the notes thereto, contained in the 2018 Form 10-K. See Note 4: "Acquisitions" for further information on the pending acquisition of a manufacturing facility and see Note 7: "Balance Sheet Information" for information with respect to operating leases and pension plan, in each case, in the notes to our unaudited consolidated financial statements included elsewhere in this Form 10-Q. As of September 27, 2019, there were no other material changes to our contractual obligations.

Our balance of cash and cash equivalents was $928.7 million as of September 27, 2019. We believe that our cash flows from operations, coupled with our existing cash and cash equivalents, and cash available from our Revolving Credit Facility, will be adequate to fund our operating and capital needs for at least the next 12 months, including payment of the litigation settlement with PI. Total cash and cash equivalents as of September 27, 2019 include approximately $395.0 million available within the United States. While we hold a significant amount of cash and cash equivalents outside the United States in various foreign subsidiaries, we have the ability to obtain cash in the United States in order to cover our domestic needs, through distributions from our foreign subsidiaries, by utilizing existing credit facilities or through new bank loans or debt obligations.

Off-Balance Sheet Arrangements

In the ordinary course of business, we provide standby letters of credit or other guarantee instruments to certain parties in connection with certain transactions, including, but not limited to, material purchase commitments, agreements to mitigate collection risk, leases, utilities or customs guarantees. As of September 27, 2019, our Revolving Credit Facility included $15.0 million of availability for the issuance of letters of credit. There were letters of credit in the amount of $1.0 million outstanding under our Revolving Credit Facility as of September 27, 2019, which reduces our borrowing capacity dollar-for-dollar. As of September 27, 2019, we also had outstanding guarantees and letters of credit outside of our Revolving Credit Facility in the amount of $11.5 million.

As part of securing financing in the ordinary course of business, we have issued guarantees related to certain of our subsidiaries' finance lease obligations, equipment financing, lines of credit and real estate mortgages, which totaled $12.2 million as of September 27, 2019. Based on historical experience and information currently available, we believe that we will not be required to make payments under the standby letters of credit or guarantee arrangements for the foreseeable future.

We have not recorded any liability in connection with these letters of credit and guarantee arrangements. See Note 3: "Recent Accounting Pronouncements," Note 8: "Long-Term Debt" and Note 11: "Commitments and Contingencies" in the notes to our unaudited consolidated financial statements included elsewhere in this Form 10-Q for additional information.

Contingencies

We are a party to a variety of agreements entered into in the ordinary course of business pursuant to which we may be obligated to indemnify other parties for certain liabilities that arise out of or relate to the subject matter of the agreements. Some of the agreements entered into by us require us to indemnify the other party against losses due to IP infringement, environmental contamination and other property damage, personal injury, our failure to comply with applicable laws, our negligence or willful misconduct or our breach of representations, warranties or covenants related to such matters as title to sold assets.

We face risk of exposure to warranty and product liability claims in the event that our products fail to perform as expected or such failure of our products results, or is alleged to result, in economic damage, bodily injury or property damage. In addition, if any of our designed products are alleged to be defective, we may be required to participate in their recall. Depending on the significance of any particular customer and other relevant factors, we may agree to provide more favorable rights to such customer for valid defective product claims.

We maintain directors’ and officers’ insurance policies that indemnify our directors and officers against various liabilities, including certain liabilities under the Exchange Act, that might be incurred by any director or officer in his or her capacity as such.

The Fairchild Agreement provides for indemnification and insurance rights in favor of Fairchild's then current and former directors, officers and employees. Specifically, we have agreed that, for no fewer than six years following the Fairchild acquisition, we will: (a) indemnify and hold harmless each such indemnitee against losses and expenses (including advancement of attorneys' fees and expenses) in connection with any proceeding asserted against the indemnified party in connection with such person's servings as a director, officer, employee or other fiduciary of Fairchild or its subsidiaries prior to the effective time of the acquisition; (b) maintain in effect all provisions of the certificate of incorporation or bylaws of Fairchild or any of its subsidiaries or any other agreements of Fairchild or any of its subsidiaries with any indemnified party regarding elimination of liability, indemnification of officers, directors and employees and advancement of expenses in existence on the date of the Fairchild Agreement for acts or omissions occurring prior to the effective time of the acquisition and; (c) subject to certain qualifications, provide to Fairchild's then current directors and officers an insurance and indemnification policy that provides coverage for events occurring prior to the effective time of the acquisition that is no less favorable than Fairchild's then-existing policy, or, if insurance coverage that is no less favorable is unavailable, the best available coverage.

Similarly, the Quantenna Agreement provides for indemnification and insurance rights in favor of Quantenna's then current and former directors, officers, employees and agents. Specifically, the Company has agreed that, for no fewer than six years following the Quantenna acquisition, the Company will: (a) indemnify and hold harmless each such indemnified party to the fullest extent permitted by Delaware law in the event of any threatened or actual claim suit, action, proceeding or investigation against the indemnified party based in whole or in part on, or pertaining to, such person's serving as a director, officer, employee or agent of Quantenna or its subsidiaries or predecessors prior to the effective time of the acquisition or in connection with the Quantenna Agreement; (b) maintain in effect provisions of the certificate of incorporation and bylaws of Quantenna and each of its subsidiaries regarding the elimination of liability of directors and indemnification of officers, directors and employees that are no less advantageous to the intended beneficiaries than the corresponding provisions in the certificate of incorporation and bylaws of Quantenna and each of its subsidiaries in existence on the date of the Quantenna Agreement; and (c) obtain and fully pay the premium for a non-cancelable extension of directors' and officers' liability coverage of Quantenna's directors' and officers' policies and Quantenna's fiduciary liability insurance policies in effect as of the date of the Quantenna Agreement.

While our future obligations under certain agreements may contain limitations on liability for indemnification, other agreements do not contain such limitations, and under such agreements, it is not possible to predict the maximum potential amount of future payments due to the conditional nature of our obligations and the unique facts and circumstances involved in each particular agreement. Historically, payments made by us under any of these indemnities have not had a material effect on our business, financial condition, results of operations or cash flows, and we do not believe that any amounts that we may be required to pay under these indemnities in the future will be material to our business, financial condition, results of operations or cash flows.

See Note 11: "Commitments and Contingencies" in the notes to our unaudited consolidated financial statements under the heading "Legal Matters" included elsewhere in this Form 10-Q for possible contingencies related to legal matters. See also Part I, Item 1 "Business - Government Regulation" of the 2018 Form 10-K for information on certain environmental matters.

Sources and Uses of Cash

We require cash to fund our operating expenses and working capital requirements, including outlays for strategic acquisitions and investments, for research and development, to make capital expenditures, to repurchase our common stock and other Company securities and to pay debt service, including principal and interest and finance lease payments. We expect interest expense to remain significant in future periods as we continue to service our debt. Our principal sources of liquidity are cash on hand, cash generated from operations and funds from external borrowings and equity issuances. In the near term, we expect to fund our primary cash requirements through cash generated from operations and with cash and cash equivalents on hand. We also have the ability to utilize our Revolving Credit Facility.

As part of our business strategy, we review acquisition and divestiture opportunities and proposals on a regular basis. During the quarter ended June 28, 2019, we completed the acquisition of Quantenna. See Note 4: "Acquisitions" in the notes to our unaudited consolidated financial statements included elsewhere in this Form 10-Q for additional information.
We believe that the key factors that could affect our internal and external sources of cash include:

- Factors that affect our results of operations and cash flows, including the impact on our business and operations as a result of changes in demand for our products, competitive pricing pressures, effective management of our manufacturing capacity, our ability to achieve further reductions in operating expenses, the impact of our restructuring programs on our production and cost efficiency and our ability to make the research and development expenditures required to remain competitive in our business; and
- Factors that affect our access to bank financing and the debt and equity capital markets that could impair our ability to obtain needed financing on acceptable terms or to respond to business opportunities and developments as they arise, including interest rate fluctuations, macroeconomic conditions, sudden reductions in the general availability of lending from banks or the related increase in cost to obtain bank financing and our ability to maintain compliance with covenants under our debt agreements in effect from time to time.

Our ability to service our long-term debt, including our 1.625% Notes, 1.00% Notes, Revolving Credit Facility and Term Loan "B" Facility, to remain in compliance with the various covenants contained in our debt agreements and to fund working capital, capital expenditures and business development efforts will depend on our ability to generate cash from operating activities, which is subject to, among other things, our future operating performance, as well as to general economic, financial, competitive, legislative, regulatory and other conditions, some of which may be beyond our control.

If we fail to generate sufficient cash from operations, we may need to raise additional equity or borrow additional funds to achieve our longer term objectives. There can be no assurance that such equity or borrowings will be available or, if available, will be at rates or prices acceptable to us. We believe that cash flow from operating activities coupled with existing cash and cash equivalents and existing credit facilities will be adequate to fund our operating and capital needs, as well as enable us to maintain compliance with our various debt agreements, through at least the next 12 months. To the extent that results or events differ from our financial projections or business plans, our liquidity may be adversely impacted.

During the ordinary course of business, we evaluate our cash requirements and, if necessary, adjust our expenditures for inventory, operating expenditures and capital expenditures to reflect the current market conditions and our projected sales and demand. Our capital expenditures are primarily directed toward production equipment and capacity expansion. Our capital expenditure levels can materially influence our available cash for other initiatives. For example, during the nine months ended September 27, 2019, we paid $422.2 million for capital expenditures, while during the nine months ended September 28, 2018, we paid $382.8 million for capital expenditures. Our current minimum contractual capital expenditure commitment for the remainder of 2019 is approximately $20.0 million. Our current minimum contractual capital expenditure commitment for 2020 and thereafter is approximately $34.7 million. We expect to incur capital expenditures of approximately 10% to 11% of annual revenue for the remainder of 2019 and 2020 to further improve our manufacturing cost structure. Future capital expenditures may be impacted by events and transactions that are not currently forecasted.

Primary Cash Flow Sources

Our long-term cash generation is dependent on the ability of our operations to generate cash. Our cash flows from operating activities were $603.0 million and $853.2 million for the nine months ended September 27, 2019 and September 28, 2018, respectively. The decrease of $250.2 million was primarily attributable to a reduction in net income due to decreased demand for our products as well as a change in working capital during the period. Our ability to maintain positive operating cash flows is dependent on, among other factors, our success in achieving our revenue goals and manufacturing and operating cost targets.

Our management of our assets and liabilities, including both working capital and long-term assets and liabilities, also influences our operating cash flows, and each of these components is discussed below.

Working Capital

Working capital, calculated as total current assets less total current liabilities, fluctuates depending on end-market demand and our effective management of certain items such as receivables, inventory and payables. In times of escalating demand, our working capital requirements may be affected as we purchase additional manufacturing materials and increase production. Our working capital may also be affected by restructuring programs, which may require us to use cash for severance payments, asset transfers and contract termination costs. In addition, our working capital may be affected by acquisitions and transactions involving our convertible notes and other debt instruments. Our working capital, excluding cash and cash equivalents and the current portion of long-term debt, was $879.3 million at September 27, 2019 and has fluctuated between $1,017.9 million and $767.4 million at the end of each of our last eight fiscal quarters. Our working capital, including cash and cash equivalents and the current portion of long-term debt, was $1,071.4 million at September 27, 2019 and has fluctuated between $1,797.4 million and $1,022.0 million at the end of each of our last eight fiscal quarters.

Although investments made to fund working capital will reduce our cash balances, these investments are necessary to support business and operating initiatives. During the nine months ended September 27, 2019, our working capital was most significantly impacted by payments for variable compensation and capital expenditures.

Long-Term Assets and Liabilities

Our long-term assets consist primarily of property, plant and equipment, intangible assets, deferred taxes and goodwill.

Our manufacturing rationalization plans have included efforts to utilize our existing manufacturing assets and supply arrangements more efficiently. We believe that near-term access to additional manufacturing capacity, should it be required, could be readily obtained on reasonable terms through manufacturing agreements with third parties. We will continue to look for opportunities to make strategic purchases in the future for additional capacity.

Our long-term liabilities, excluding long-term debt and deferred taxes, consist of liabilities under our foreign defined benefit pension plans and contingent tax reserves. In regard to our foreign defined benefit pension plans, our annual funding of these obligations is equal to the minimum amount legally required in each jurisdiction in which the plans operate. This annual amount is dependent upon numerous actuarial assumptions. For additional information, see Note 7: "Balance Sheet Information" and Note 14: "Income Taxes" in the notes to our unaudited consolidated financial statements included elsewhere in this Form 10-Q.

Key Financing and Capital Events

Overview

For the past several years, we have undertaken various measures to secure liquidity to pursue acquisitions, repurchase shares of our common stock, reduce interest costs, amend existing key financing arrangements and, in some cases, extend a portion of our debt maturities to continue to provide us additional operating flexibility.

Cash Management

Our ability to manage cash is limited, as our primary cash inflows and outflows are dictated by the terms of our sales and supply agreements, contractual obligations, debt instruments and legal and regulatory requirements. While we have some flexibility with respect to the timing of capital equipment purchases, we must invest in capital equipment on a timely basis to allow us to maintain our manufacturing efficiency and support our platforms for new products.

Debt Guarantees and Related Covenants

As of September 27, 2019, we were in compliance with the indentures relating to our 1.00% Notes and 1.625% Notes and with covenants in the Amended Credit Agreement, including those relating to our Term Loan “B” Facility and Revolving Credit Facility, and covenants in our other debt agreements. Our 1.00% Notes and our 1.625% Notes are senior to the existing and future subordinated indebtedness of ON Semiconductor and its guarantor subsidiaries and rank equally in right of payment to all of our existing and future senior debt and as unsecured obligations are subordinated to all of our existing and future secured debt to the extent of the assets securing such debt. See Note 8: "Long-Term Debt" in the notes to our unaudited consolidated financial statements included elsewhere in this Form 10-Q for additional information.

Recent Accounting Pronouncements

For a discussion of recent accounting pronouncements, see Note 3: "Recent Accounting Pronouncements" in the notes to our unaudited consolidated financial statements included elsewhere in this Form 10-Q.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

We are exposed to financial market risks, including changes in interest rates and foreign currency exchange rates. To mitigate these risks, we utilize derivative financial instruments. We do not use derivative financial instruments for speculative or trading purposes.

As of September 27, 2019, our long-term debt (including current maturities) totaled $3,764.6 million. We have no interest rate exposure to rate changes on our fixed rate debt, which totaled $2,265.3 million as of September 27, 2019. We do have interest rate exposure with respect to the $1,499.3 million balance of our variable interest rate debt outstanding as of September 27, 2019. A 50 basis point increase in interest rates, including the impact of interest rate swaps, would impact our expected annual

interest expense for the next 12 months by approximately $7.5 million. However, some of this impact would be offset by additional interest earned on our cash and cash equivalents should rates on deposits and investments also increase. We entered into interest rate swaps to hedge some of the risk of variability in cash flows resulting from future interest payments on our variable interest rate debt under the Term Loan "B" Facility.

Except as described above, our exposure to market risk from December 31, 2018 to September 27, 2019 has not changed materially from the information provided in the 2018 Form 10-K.

To ensure the adequacy and effectiveness of our foreign exchange hedge positions, we continually monitor our foreign exchange forward positions, both on a stand-alone basis and in conjunction with their underlying foreign currency exposures, from an accounting and economic perspective. However, given the inherent limitations of forecasting and the anticipatory nature of exposures intended to be hedged, we cannot provide any assurances that such programs will offset more than a portion of the adverse financial impact resulting from unfavorable movements in foreign exchange rates.

We are subject to risks associated with transactions that are denominated in currencies other than our functional currencies, as well as the effects of translating amounts denominated in a foreign currency to the U.S. Dollar as a normal part of the reporting process. Some of our Japanese operations utilize Japanese Yen as the functional currency, which results in a translation adjustment that is included as a component of accumulated other comprehensive income.

We enter into forward foreign currency contracts that economically hedge the gains and losses generated by the re-measurement of certain recorded assets and liabilities in a non-functional currency. Changes in the fair value of these undesignated hedges are recognized in other income and expense immediately as an offset to the changes in the fair value of the assets or liabilities being hedged. The notional amount of foreign exchange contracts at September 27, 2019 and December 31, 2018 was $188.9 million and $157.3 million, respectively. Our policies prohibit speculation on financial instruments, trading in currencies for which there are no underlying exposures or entering into trades for any currency to intentionally increase the underlying exposure.

Substantially all of our revenue is transacted in U.S. Dollars. However, a significant amount of our operating expenditures and capital purchases are transacted in local currencies, including Japanese Yen, Euros, Korean Won, Malaysian Ringgit, Philippine Peso, Singapore Dollars, Swiss Francs, Chinese Renminbi and Czech Koruna. Due to the materiality of our transactions in these local currencies, our results are impacted by changes in currency exchange rates measured against the U.S. Dollar. For example, we determined that based on a hypothetical weighted-average change of 10% in currency exchange rates, our results would have impacted our income before taxes by approximately $76.0 million as of September 27, 2019, assuming no offsetting hedge positions or correlated activities.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

We carried out an evaluation, under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act). Based upon that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of the end of the period covered in this report, our disclosure controls and procedures were effective to ensure that information required to be disclosed in reports filed under the Exchange Act is recorded, processed, summarized and reported within the required time periods and is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

Changes in Internal Control Over Financial Reporting

We also carried out an evaluation, under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, of changes to our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act) that occurred during the fiscal quarter ended September 27, 2019.

On June 19, 2019, we acquired Quantenna, which operates under its own set of systems and internal controls. We are separately maintaining Quantenna's systems and much of its control environment and are in the process of evaluating the controls and procedures at Quantenna and integrating the acquired business into our internal control over financial reporting.

Other than as described above, there have been no changes to our internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) that occurred during the fiscal quarter ended September 27, 2019, which have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II: OTHER INFORMATION

Item 1. Legal Proceedings

See Note 11: "Commitments and Contingencies" under the heading "Legal Matters" in the notes to the consolidated unaudited financial statements included elsewhere in this Form 10-Q for a discussion of our legal proceedings and related matters. See also Part I, Item 1 "Business - Government Regulation" of the 2018 Form 10-K for information on certain environmental matters.

Item 1A. Risk Factors

Our business, financial condition and results of operations are subject to a number of trends, risks and uncertainties. We review and, where applicable, update our risk factors each quarter. There have been no material changes from the risk factors disclosed in Part I, Item 1A of the 2018 Form 10-K.

Forward-Looking Statements

This Quarterly Report on Form 10-Q includes “forward-looking statements,” as that term is defined in Section 27A of the Securities Act and Section 21E of the Exchange Act. All statements, other than statements of historical facts, included or incorporated in this Form 10-Q could be deemed forward-looking statements, particularly statements about our plans, strategies and prospects under the heading “Management’s Discussion and Analysis of Financial Condition and Results of Operations.” Forward-looking statements are often characterized by the use of words such as “believes,” “estimates,” “expects,” “projects,” “may,” “will,” “intends,” “plans,” or “anticipates,” or by discussions of strategy, plans or intentions. All forward-looking statements in this Form 10-Q are made based on our current expectations, forecasts, estimates and assumptions and involve risks, uncertainties and other factors that could cause results or events to differ materially from those expressed in the forward-looking statements. Among these factors are our revenue and operating performance; economic conditions and markets (including current financial conditions); risks related to our ability to meet our assumptions regarding outlook for revenue and gross margin as a percentage of revenue; effects of exchange rate fluctuations; the cyclical nature of the semiconductor industry; changes in demand for our products; changes in inventories at our customers and distributors; risks associated with restructuring actions and workforce reductions; technological and product development risks; enforcement and protection of our IP rights and related risks; risks related to the security of our information systems and secured network; availability of raw materials, electricity, gas, water and other supply chain uncertainties; our ability to effectively shift production to other facilities when required in order to maintain supply continuity for our customers; variable demand and the aggressive pricing environment for semiconductor products; our ability to successfully manufacture in increasing volumes on a cost-effective basis and with acceptable quality for our current products; risks associated with our acquisitions and dispositions generally, including our ability to realize the anticipated benefits of our acquisitions and dispositions, including our acquisition of Quantenna; risks that acquisitions or dispositions may disrupt our current plans and operations, the risk of unexpected costs, charges or expenses resulting from acquisitions or dispositions and difficulties arising from integrating and consolidating acquired businesses, our timely filing of financial information with the SEC for acquired businesses and our ability to accurately predict the future financial performance of acquired businesses; competitor actions, including the adverse impact of competitor product announcements; pricing and gross profit pressures; risks associated with the addition of Huawei Technologies Co., Ltd. and its non-U.S. affiliates and subsidiaries, and other customers, to the U.S. Department of Commerce, Bureau of Industry Security Entity List; loss of key customers; risks associated with restructuring actions and workforce reductions; order cancellations or reduced bookings; changes in manufacturing yields; control of costs and expenses and realization of cost savings and synergies from restructurings; the costs to defend against or pursue litigation and the potential significant costs associated with adverse litigation outcomes; risks associated with decisions to expend cash reserves for various uses in accordance with our capital allocation policy such as debt prepayment, stock repurchases or acquisitions rather than to retain such cash for future needs; risks associated with our substantial leverage and restrictive covenants in our debt agreements that may be in place from time to time; risks associated with our worldwide operations, including changes in trade policies, foreign employment and labor matters associated with unions and collective bargaining arrangements, continuing political unrest in markets in which we do significant business, including Hong Kong, as well as man-made and/or natural disasters affecting our operations or financial results; the threat or occurrence of international armed conflict and terrorist activities both in the United States and internationally; risks of changes in U.S. or international tax rates or legislation; risks and costs associated with increased and new regulation of corporate governance and disclosure standards; risks related to new legal requirements; and risks and expenses involving environmental or other governmental regulation. Readers are cautioned not to place undue reliance on forward-looking statements. We assume no obligation to update such information, except as may be required by law. Additional factors that could affect our future results or events are described under Part II, Item 1A “Risk Factors” in this Form 10-Q, 2018 Form 10-K and from time to time in our other SEC reports. You should carefully consider the trends, risks and uncertainties described in this Form 10-Q, Part I, Item 1A “Risk Factors” in the 2018 Form 10-K and subsequent reports filed with or furnished to the

SEC before making any investment decision with respect to our securities. If any of these trends, risks or uncertainties actually occurs or continues, our business, financial condition or operating results could be materially adversely affected, the trading prices of our securities could decline and you could lose all or part of your investment. All forward-looking statements attributable to us or persons acting on our behalf are expressly qualified in their entirety by this cautionary statement.

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

The following table provides information regarding repurchases of our common stock during the quarter ended September 27, 2019:

Period (1)	Total Number of Shares Purchased (2)	Average Price Paid per Share ($) (3)	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar value of Shares that May Yet be Purchased Under the Plans or Programs (in millions) ($)
June 29, 2019 - July 26, 2019	11,610	19.94	—	1,374.3
July 27, 2019 - August 23, 2019	989,928	17.35	763,928	1,361.1
August 24, 2019 - September 27, 2019	9,260	18.31	—	1,361.1
Total	1,010,798	17.38	763,928	

(1) These time periods represent our fiscal month start and end dates for the third quarter of 2019.
(2) The number of shares purchased represents shares of common stock held by employees who tendered owned shares of common stock to the Company to satisfy the employee withholding taxes due upon the vesting of RSUs and shares purchased under the Share Repurchase Program.
(3) The price per share is based on the fair market value at the time of tender or repurchase, respectively.

Share Repurchase Program

During the quarter ended September 27, 2019, we repurchased 0.8 million shares of our common stock for $13.1 million under the Share Repurchase Program.

Under the Share Repurchase Program, we may repurchase up to $1.5 billion (exclusive of fees, commissions and other expenses) of our common stock over a period of four years from December 1, 2018, subject to certain contingencies. We may repurchase our common stock from time to time in privately negotiated transactions or open market transactions, including pursuant to a trading plan in accordance with Rule 10b5-1 and Rule 10b-18 of the Exchange Act, or by any combination of such methods or other methods. The timing of any repurchases and the actual number of shares repurchased will depend on a variety of factors, including our stock price, corporate and regulatory requirements, restrictions under our debt obligations, the availability of capital and other market and economic conditions. The Share Repurchase Program does not require us to purchase any particular amount of common stock and is subject to a variety of factors including the discretion of our board of directors. As of September 27, 2019, the authorized amount remaining under the Share Repurchase Program was $1,361.1 million.

See Note 9: "Earnings Per Share and Equity" of the notes to our unaudited consolidated financial statements included elsewhere in this Form 10-Q for further information on shares of common stock tendered to the Company by employees to satisfy applicable employee withholding taxes due upon vesting of RSUs and the Share Repurchase Program.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

None.

Item 6. Exhibits

EXHIBIT INDEX

Exhibit No.	Exhibit Description*
10.1	Sixth Amendment to Credit Agreement, dated as of August 15, 2019, by and among ON Semiconductor Corporation, as borrower, the subsidiary guarantors party thereto, Deutsche Bank AG New York Branch, as administrative agent and collateral agent, the 2019 New Replacement Term B-4 Loan Lenders, the 2019 Converting Replacement Term B-4 Loan Lenders, the 2019 Incremental Term B-4 Loan Lenders, each Revolving Lender party thereto in its capacity as such, certain Lenders party thereto constituting the Required Lenders, the joint lead arrangers and joint bookrunners party thereto and the co-managers party thereto.(1)
10.2	Seventh Amendment to Credit Agreement, dated as of September 19, 2019, by and among ON Semiconductor Corporation, as borrower, the subsidiary guarantors party thereto, Deutsche Bank AG New York Branch, as administrative agent and collateral agent, the 2019 New Replacement Term B-4 Loan Lenders, the 2019 Converting Replacement Term B-4 Loan Lenders, the 2019 Incremental Term B-4 Loan Lenders, each Revolving Lender party thereto in its capacity as such, certain Lenders party thereto constituting the Required Lenders, the joint lead arrangers and joint bookrunners party thereto and the co-managers party thereto (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the Commission on September 20, 2019).
31.1	Certification by CEO pursuant to Rule 13(a)-14(a) or 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of Sarbanes-Oxley Act of 2002(1)
31.2	Certification by CFO pursuant to Rule 13(a)-14(a) or 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of Sarbanes-Oxley Act of 2002(1)
32	Certification by CEO and CFO pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002(2)
101.INS	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.(1)
101.SCH	XBRL Taxonomy Extension Schema Document(1)
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document(1)
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document(1)
101.LAB	XBRL Taxonomy Extension Label Linkbase Document(1)
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document(1)
104	Cover Page Interactive Data File - the cover page XBRL tags are embedded within the Inline XBRL document.

* Reports filed under the Exchange Act (Form 10-K, Form 10-Q and Form 8-K) are filed under File No. 000-30419.

(1) Filed herewith.
(2) Furnished herewith.

SIGNATURES

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

ON SEMICONDUCTOR CORPORATION
(Registrant)

Date: October 28, 2019

By: /s/ BERNARD GUTMANN

Bernard Gutmann

Executive Vice President, Chief Financial Officer & Treasurer (Principal Financial Officer, Principal Accounting Officer and officer duly authorized to sign this report)

SIXTH AMENDMENT TO CREDIT AGREEMENT

SIXTH AMENDMENT TO CREDIT AGREEMENT, dated as of August 15, 2019 (the "Sixth Amendment"), among ON SEMICONDUCTOR CORPORATION, a Delaware corporation (the "Borrower"), the Subsidiary Guarantors party hereto, DEUTSCHE BANK AG NEW YORK BRANCH ("DBNY"), as administrative agent (in such capacity, and together with its successors and assigns in such capacity, the "Administrative Agent"), DBNY, as collateral agent (in such capacity, and together with its successors and assigns in such capacity, the "Collateral Agent") under the Credit Agreement referred to below and Barclays Bank PLC as the incremental revolving lender (the "Incremental Revolving Lender") (with capitalized terms used, but not defined, in this paragraph and the recitals below to be defined as provided in Section 1 below).

R E C I T A L S

WHEREAS, the Borrower, the Administrative Agent, the Collateral Agent, the lenders from time to time party thereto (the "Lenders") and various other parties have previously entered into that certain Credit Agreement, dated as of April 15, 2016, as amended by that certain First Amendment to Credit Agreement, dated as of September 30, 2016, that certain Second Amendment to Credit Agreement, dated as of March 31, 2017, that certain Third Amendment to Credit Agreement, dated as of November 30, 2017, that certain Fourth Amendment to Credit Agreement, dated as of May 31, 2018 and that certain Fifth Amendment to Credit Agreement, dated as of June 12, 2019 (as so amended, restated, amended and restated, supplemented or otherwise modified prior to the date hereof, the "Credit Agreement");

WHEREAS, pursuant to Section 3.16(a) of the Credit Agreement, the Borrower may, by written notice delivered to the Administrative Agent, request an increase to the existing Revolving Commitments by requesting and obtaining Incremental Revolving Commitments;

WHEREAS, the Borrower has requested that the Incremental Revolving Lender provide Incremental Revolving Commitments to the Revolving Facility pursuant to Section 2.4(a)(i) of the Credit Agreement in an aggregate principal amount of $70,000,000 on the terms and subject to the conditions set forth herein;

WHEREAS, the Incremental Revolving Lender has indicated a willingness to provide the Incremental Revolving Commitments on the terms and subject to the conditions set forth herein; and

NOW THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto hereby agree as follows:

SECTION 1. Defined Terms; Rules of Construction. Capitalized terms used herein and not otherwise defined herein have the meanings assigned to such terms in the Credit Agreement or, if not defined therein, the Credit Agreement as amended hereby. The rules of construction specified in Section 1.2 of the Credit Agreement shall apply to this Sixth Amendment, including the terms defined in the preamble and recitals hereto.

SECTION 2. Amendments to the Credit Agreement.

(a) On the Sixth Amendment Effective Date (as defined below), the Incremental Revolving Lender hereby agrees to provide the Incremental Revolving Commitment set forth opposite its name on Schedule 1 attached hereto. Each such Incremental Revolving Commitment provided pursuant to this Section 2(a) shall be added to and become part of the existing Revolving Facility and shall be subject to all of the terms and conditions set forth in the Credit Agreement with respect to Revolving Commitments and Incremental Revolving Commitments under the Revolving Facility, including, without limitation, Section 3 of the Credit Agreement. The Borrower, the Administrative Agent and the Incremental Revolving Lender hereby agree that this Sixth Amendment shall be deemed to constitute an "Increase Revolving Joinder" in satisfaction of Section 3.16 of the Credit Agreement, and the Administrative Agent and each Issuing Lender hereby consent to the joinder of the Incremental Revolving Lender as a Revolving Lender under the Credit Agreement.

(b) After giving effect to this Sixth Amendment on the Sixth Amendment Effective Date, there shall be an automatic adjustment to the Revolving Credit Exposure of each Revolving Lender in the aggregate principal amount the outstanding Revolving Loans and the L/C Exposure (and the participation of the Revolving Lenders therein) to reflect the new Revolving Credit Exposure of each Revolving Lender in the aggregate principal amount of outstanding Revolving Loans and L/C Exposure (and the participation of the Revolving Lenders therein) resulting from the Incremental Revolving Commitment.

SECTION 3. Representations and Warranties. To induce the other parties hereto to enter into this Sixth Amendment, the Borrower hereby represents and warrants to each other party hereto that, as of the Sixth Amendment Effective Date (as defined below): (i) the Sixth Amendment has been duly authorized, executed and delivered by it and each of this Sixth Amendment and the Credit Agreement (as amended hereby on the Sixth Amendment Effective Date) constitutes its legal, valid and binding obligation, enforceable against it in accordance with its terms, except as enforceability may be limited by applicable bankruptcy, insolvency, reorganization, moratorium or similar laws affecting the enforcement of creditors' rights generally and by general equitable principles (whether enforcement is sought by proceedings in equity or at law); (ii) after giving effect to this Sixth Amendment and the transactions contemplated by this Sixth Amendment, no Default or Event of Default has occurred and is continuing; and (iii) the execution, delivery and performance of this Sixth Amendment and the performance of the Credit Agreement (as amended hereby on the Sixth Amendment Effective Date) shall not (a) violate its Organizational Documents or the Loan Documents, (b) violate any Requirement of Law, Governmental Authorization or any Contractual Obligation of the Borrower or any Restricted Subsidiary (including, without limitation, the Convertible Notes Indentures and, in each case any Permitted Refinancings thereof) and (c) will not result in, or require, the creation or imposition of any Lien on any of their respective properties or revenues pursuant to its Organizational Documents, any Requirement of Law or any such Contractual Obligation (including, without limitation, the Convertible Notes Indentures and, in each case, any Permitted Refinancings thereof) (other than the Liens created by the Security Documents and the Liens permitted by Section 8.3 of the Credit Agreement), except for any violation set forth in clauses (b) or (c) which could not reasonably be expected to have a Material Adverse Effect.

SECTION 4. Conditions of Effectiveness of this Sixth Amendment.

(a) This Sixth Amendment shall become effective as of the first date (the "Sixth Amendment Effective Date") when each of the conditions set forth in this Section 4(a) shall have been satisfied (which, in the case of clause (ii) below, may be substantially concurrent with the satisfaction of the condition specified in clause (i) below):

(i) The Administrative Agent shall have received duly executed counterparts hereof that, when taken together, bear the signatures of the Borrower, each of the other Loan Parties, the Incremental Revolving Lender, each Issuing Lender and the Administrative Agent and the Collateral Agent.

(ii) The Borrower shall have paid all costs, fees and other amounts due and payable to the Agents and the Lenders, including, to the extent invoiced, reimbursement or payment of reasonable and documented out-of-pocket expenses in connection with this Sixth Amendment and any other reasonable and documented out-of-pocket expenses of the Agents, including the reasonable and documented out-of-pocket fees, charges and disbursements of counsel for the Administrative Agent, in each case as required to be paid or reimbursed pursuant to the Credit Agreement.

(iii) On the Sixth Amendment Effective Date and after giving effect to this Sixth Amendment, (A) no Default or Event of Default shall have occurred and be continuing or would result from the borrowings to be made on the Sixth Amendment Effective Date and (B) each of the representations and warranties made by any Loan Party in or pursuant to the Loan Documents shall be true and correct in all material respects on and as of the Sixth Amendment Effective Date (except to (I) the extent made as of a specific date, in which case such representation and warranty shall be true and correct in all material respects on and as of such specific date and (II) representations and warranties qualified by materiality shall be true and correct in all respects).

(iv) The Administrative Agent shall have received from the Borrower a certificate executed by a Responsible Officer of the Borrower, certifying compliance with (A) the requirements of the immediately preceding clause (iii) and (B) as to compliance with the requirements of Section 11.1 of the Credit Agreement and compliance with Section 3.16 of the Credit Agreement relating to Incremental Revolving Commitments.

(v) The Administrative Agent shall have received a legal opinion, dated the Sixth Amendment Effective Date, of Morrison & Foerster LLP, counsel to the Borrower and its Subsidiaries, reasonably acceptable to the Administrative Agent.

(vi) The Administrative Agent shall have received (x) a solvency certificate substantially in the form of Exhibit I-2 to the Credit Agreement, executed as of the Sixth Amendment Effective Date by the chief financial officer of the Borrower and (y) a certificate of each Loan Party, dated as of the Sixth Amendment Effective Date, substantially in the form of Exhibit F-2 to the Credit Agreement, with appropriate insertions and attachments including the certificate of incorporation of each Loan Party

certified by the relevant authority of the jurisdiction of organization of such Loan Party (or a certification from the applicable Loan Party that there has been no change to such organizational documents since June 12, 2019), good standings from the applicable secretary of state of organization of each Loan Party, a certificate of resolutions or other action, incumbency certificates of each Responsible Officer thereof authorized to act as a Responsible Officer in connection with this Sixth Amendment and the other Loan Documents to which such Loan Party is a party or is to be a party on the Sixth Amendment Effective Date.

SECTION 5. Effect of Sixth Amendment. (a) Except as expressly set forth in this Sixth Amendment or in the Credit Agreement, this Sixth Amendment shall not by implication or otherwise limit, impair, constitute a waiver of or otherwise affect the rights and remedies of the Lenders or the Agents under the Credit Agreement or any other Loan Document, and shall not alter, modify, amend or in any way affect any of the terms, conditions, obligations, covenants or agreements contained in the Credit Agreement or any other provision of the Credit Agreement or of any other Loan Document, all of which are ratified and affirmed in all respects and shall continue in full force and effect. Without limiting the generality of the foregoing, the Security Documents and all of the Collateral described therein do and shall continue to secure the payment of all Obligations of the Loan Parties under the Loan Documents (including all Incremental Revolving Commitments), in each case, as amended by this Sixth Amendment. Nothing herein shall be deemed to entitle the Borrower to a consent to, or a waiver, amendment, modification or other change of, any of the terms, conditions, obligations, covenants or agreements contained in the Credit Agreement or any other Loan Document in similar or different circumstances.

(b) On and after the Sixth Amendment Effective Date, each reference in (i) the Credit Agreement to "this Agreement", "hereunder", "hereof", "herein", or words of like import, and each reference to the Credit Agreement in any other Loan Document shall be deemed a reference to the Credit Agreement as modified by this Sixth Amendment. This Sixth Amendment shall constitute a "Loan Document" for all purposes of the Credit Agreement and the other Loan Documents.

(c) This Sixth Amendment, the Credit Agreement and the other Loan Documents constitute the entire agreement among the parties hereto with respect to the subject matter hereof and thereof and supersede all other prior agreements and understandings, both written and verbal, among the parties hereto with respect to the subject matter hereof.

(d) This Sixth Amendment may not be amended, modified or waived except in accordance with Section 11.1 of the Credit Agreement.

SECTION 6. Costs and Expenses. The Borrower hereby agrees to reimburse the Administrative Agent for its reasonable and documented out-of-pocket expenses in connection with this Sixth Amendment, including the reasonable and documented out-of-pocket fees, charges and disbursements of counsel for the Administrative Agent, in each case, as required to be reimbursed pursuant to the Credit Agreement.

SECTION 7. Post-Closing Obligations. Within ninety (90) days after the Sixth Amendment Effective Date, unless extended in writing by the Administrative Agent in its reasonable discretion, the Borrower shall deliver or shall cause the applicable Loan Party to deliver, to the Administrative Agent, the following:

(a) an executed amendment to each existing Mortgage (a "Mortgage Amendment" and the existing Mortgage, as amended by such Mortgage Amendment, a "Mortgage"), in form and substance reasonably acceptable to the Administrative Agent, together with evidence of completion (or satisfactory arrangements for the completion) of all recordings and filings of each Mortgage Amendment as may be necessary to protect and preserve the Lien of the Mortgage;

(b) with respect to each Mortgage, a date down and modification endorsement (or to the extent a date down and modification endorsement is not available, a new title insurance policy) to the existing lender's title insurance policy insuring such Mortgage, which shall be in form and substance reasonably satisfactory to the Administrative Agent and insures that the Mortgage is a valid and enforceable first priority lien on the Mortgaged Property, free and clear of all Liens other than Liens permitted under Section 8.3 of the Credit Agreement; and

(c) an opinion addressed to the Administrative Agent and the Secured Parties, in form and substance reasonably satisfactory to the Administrative Agent, from local counsel in the jurisdiction in which the Mortgaged Property is located which shall include, without limitation, the enforceability of the Mortgage.

SECTION 8. Reaffirmation. By executing and delivering a counterpart hereof, (i) the Borrower and the Subsidiary Guarantors party hereto hereby agree that all Loans incurred by the Borrower and the Incremental Revolving Commitments shall be guaranteed pursuant to the Guarantee and Collateral Agreement in accordance with the terms and provisions thereof and shall be secured pursuant to the Security Documents in accordance with the terms and provisions thereof and (ii) each of the Borrower and the Subsidiary Guarantors party hereto hereby (A) agrees that, notwithstanding the effectiveness of this Sixth Amendment, after giving effect to this Sixth Amendment, the Security Documents continue to be in full force and effect, (B) agrees that all of the Liens and security interests created and arising under each Security Document remain in full force and effect on a continuous basis, and the perfected status and priority of each such Lien and security interest continues in full force and effect on a continuous basis, unimpaired, uninterrupted and undischarged, as collateral security for its obligations, liabilities and indebtedness under the Credit Agreement and under its guarantees in the Loan Documents, in each case, to the extent provided in, and subject to the limitations and qualifications set forth in, such Loan Documents (as amended by this Sixth Amendment) and (C) affirms and confirms all of its obligations, liabilities and indebtedness under the Credit Agreement and each other Loan Document (including the Incremental Revolving Commitments), in each case after giving effect to this Sixth Amendment, including its guarantee of the Obligations and the pledge of and/or grant of a security interest in its assets as Collateral pursuant to the Security Documents to secure such Obligations, all as provided in the Security Documents, and acknowledges and agrees that such obligations, liabilities, guarantee, pledge and grant continue in full force and effect in respect of, and to secure, such Obligations under the Credit Agreement and the other Loan Documents, in each case, to the extent provided in, and subject to the limitations and qualifications set forth in, such Loan Documents (as amended by this Sixth Amendment).

SECTION 9. GOVERNING LAW. THIS SIXTH AMENDMENT AND THE RIGHTS AND OBLIGATIONS OF THE PARTIES UNDER THIS SIXTH AMENDMENT SHALL BE GOVERNED BY, AND CONSTRUED AND INTERPRETED IN ACCORDANCE WITH, THE LAW OF THE STATE OF NEW YORK.

SECTION 10. Counterparts. This Sixth Amendment may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Delivery by facsimile or other electronic transmission (including in ".pdf" or ".tif" format) of an executed counterpart of a signature page to this Sixth Amendment shall be effective as delivery of an original executed counterpart of this Sixth Amendment.

SECTION 11. Headings. Section headings herein are included for convenience of reference only and shall not affect the interpretation of this Sixth Amendment.

SECTION 12. Severability. Section 11.9 of the Credit Agreement is hereby incorporated by reference into this Sixth Amendment and shall apply to this Sixth Amendment, *mutatis mutandis*.

[*Remainder of page intentionally blank.*]

IN WITNESS WHEREOF, the parties hereto have caused this Sixth Amendment to be duly executed by their duly authorized officers, all as of the date and year first above written.

ON SEMICONDUCTOR CORPORATION,
as Borrower

By: /s/ Bernard Gutmann
Name: Bernard Gutmann
Title: Chief Financial Officer

SEMICONDUCTOR COMPONENTS INDUSTRIES, LLC,
a Delaware limited liability company

By: /s/ Keith D. Jackson
Name: Keith D. Jackson
Title: President and Chief Financial Officer

APTINA, LLC, a Delaware limited liability company

By: /s/ Keith D Jackson
Name: Keith D. Jackson
Title: President

FAIRCHILD SEMICONDUCTOR INTERNATIONAL, INC.,
a Delaware corporation

By: /s/ Bernard Gutmann
Name: Bernard Gutmann
Title: Chief Financial Officer

FAIRCHILD SEMICONDUCTOR CORPORATION,
a Delaware corporation

By: /s/ B. Gutmann
Name: Bernard Gutmann
Title: Chief Financial Officer

FAIRCHILD SEMICONDUCTOR CORPORATION OF CALIFORNIA,
a Delaware corporation

By: /s/ Bernard Gutmann
Name: Bernard Gutmann
Title: Chief Financial Officer

GIANT HOLDINGS, INC.,
a Delaware corporation

By: /s/ Bernard Gutmann
Name: Bernard Gutmann
Title: Chief Financial Officer

SILICON PATENT HOLDINGS,
a California corporation

By: /s/ Bernard Gutmann
Name: Bernard Gutmann
Title: Chief Financial Officer

GIANT SEMICONDUCTOR CORPORATION,
a North Carolina corporation

By: /s/ Bernard Gutmann
Name: Bernard Gutmann
Title: Chief Financial Officer

MICRO-OHM CORPORATION,
a North Carolina corporation

By: /s/ Bernard Gutmann
Name: Bernard Gutmann
Title: Chief Financial Officer

FAIRCHILD ENERGY, LLC,
a Maine corporation

By: /s/ Bernard Gutmann
Name: Bernard Gutmann
Title: Chief Financial Officer

Signature Page to ON Semi Sixth Amendment (2019)

DEUTSCHE BANK AG NEW YORK BRANCH, as
Administrative Agent, Collateral Agent and Issuing Lender

By: /s/ Yumi Okabe
Name: Yumi Okabe
Title: Vice President

By: /s/ Michael Strobel
Name: Michael Strobel
Title: Vice President

NAME OF INSTITUTION:

BARCLAYS BANK PLC,
as the Incremental Revolving Lender

By: /s/ Martin Corrigan
Name: Martin Corrigan
Title: Vice President

SCHEDULE 1

Incremental Revolving Lender	**Incremental Revolving Commitment**
Barclays Bank PLC	$ 70,000,000.00
TOTAL	**$ 70,000,000.00**

Exhibit 31.1

CERTIFICATIONS

I, Keith D. Jackson, certify that:

1. I have reviewed this quarterly report on Form 10-Q of ON Semiconductor Corporation;
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 (the registrant's fourth fiscal quarter in the case of an annual report) 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: October 28, 2019

/s/ KEITH D. JACKSON

Keith D. Jackson
Chief Executive Officer

Exhibit 31.2

CERTIFICATIONS

I, Bernard Gutmann, certify that:

1. I have reviewed this quarterly report on Form 10-Q of ON Semiconductor Corporation;
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 (the registrant's fourth fiscal quarter in the case of an annual report) 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: October 28, 2019

/s/ BERNARD GUTMANN
Bernard Gutmann
Chief Financial Officer

Exhibit 32

Certification

Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

For purposes of Section 1350 of Chapter 63 of Title 18 of the United States Code, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, each of the undersigned officers of ON Semiconductor Corporation, a Delaware corporation (the "Company"), does hereby certify, to such officer's knowledge, that:

The Quarterly Report on Form 10-Q for the fiscal quarter ended September 27, 2019 (the "Form 10-Q") of the Company fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)) and information contained in the Form 10-Q fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: October 28, 2019	/s/ KEITH D. JACKSON
	Keith D. Jackson
	President and Chief Executive Officer
Dated: October 28, 2019	/s/ BERNARD GUTMANN
	Bernard Gutmann
	Executive Vice President, Chief Financial Officer, and Treasurer