

**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 December 31, 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 001-34717

Alpha and Omega Semiconductor Limited

(Exact name of Registrant as Specified in its Charter)

Bermuda
(State or Other Jurisdiction of Incorporation or Organization)

77-0553536
(I.R.S. Employer Identification Number)

**Clarendon House, 2 Church Street
Hamilton HM 11, Bermuda**

(Address of Principal Registered
Offices including Zip Code)

(408) 830-9742
(Registrant's Telephone Number, Including Area Code)

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 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 ☒ No ☐

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

Large accelerated filer ☐

Accelerated filer ☒

Non-accelerated filer ☐

(Do not check if a smaller reporting company)

Smaller reporting company ☐

Emerging growth company ☐

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Shares	AOSL	The NASDAQ Global Select Market

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒
Number of common shares outstanding as of January 30, 2020: 24,782,495

Alpha and Omega Semiconductor Limited
Form 10-Q
Fiscal Second Quarter Ended December 31, 2019
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PART I. FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

ALPHA AND OMEGA SEMICONDUCTOR LIMITED **CONDENSED CONSOLIDATED BALANCE SHEETS** (Unaudited, in thousands except par value per share)

	December 31, 2019	June 30, 2019
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 107,249	\$ 121,893
Restricted cash	2,216	364
Accounts receivable, net	33,872	24,296
Inventories	117,591	111,643
Other current assets	34,395	37,102
Total current assets	295,323	295,298
Property, plant and equipment, net	416,055	409,737
Operating lease right-of-use assets, net	18,667	—
Intangible assets, net	16,826	16,882
Deferred income tax assets	4,766	4,822
Restricted cash - long-term	2,001	2,038
Other long-term assets	9,502	10,617
Total assets	\$ 763,140	\$ 739,394
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	\$ 89,741	\$ 94,384
Accrued liabilities	52,694	44,075
Income taxes payable	1,967	1,541
Short-term debt	21,029	26,609
Finance lease liabilities	15,438	11,355
Operating lease liabilities	3,282	—
Total current liabilities	184,151	177,964
Long-term debt	76,309	59,380
Income taxes payable - long-term	1,020	993
Deferred income tax liabilities	263	466
Finance lease liabilities - long-term	34,878	43,381
Operating lease liabilities - long-term	15,559	—
Other long-term liabilities	10,810	13,921
Total liabilities	322,990	296,105
Commitments and contingencies (Note 10)		
Equity:		
Preferred shares, par value \$0.002 per share:		
Authorized: 10,000 shares; issued and outstanding: none at December 31, 2019 and June 30, 2019	—	—
Common shares, par value \$0.002 per share:		
Authorized: 100,000 shares; issued and outstanding: 31,420 shares and 24,776 shares, respectively at December 31, 2019 and 31,163 shares and 24,517 shares, respectively at June 30, 2019	63	62
Treasury shares at cost, 6,644 shares at December 31, 2019 and 6,646 shares at June 30, 2019	(66,227)	(66,240)
Additional paid-in capital	240,797	234,410
Accumulated other comprehensive loss	(4,239)	(2,693)
Retained earnings	125,476	125,485

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
CONDENSED CONSOLIDATED BALANCE SHEETS
(Unaudited, in thousands except par value per share)

Total Alpha and Omega Semiconductor Limited shareholder's equity	295,870	291,024
Noncontrolling interest	144,280	152,265
Total equity	440,150	443,289
Total liabilities and equity	\$ 763,140	\$ 739,394

See accompanying notes to these condensed consolidated financial statements.

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited, in thousands except per share data)

	Three Months Ended December 31,		Six Months Ended December 31,	
	2019	2018	2019	2018
Revenue	\$ 117,860	\$ 114,925	\$ 235,662	\$ 229,997
Cost of goods sold	93,454	85,423	184,324	167,884
Gross profit	24,406	29,502	51,338	62,113
Operating expenses				
Research and development	12,147	12,600	24,515	23,984
Selling, general and administrative	15,629	20,104	30,814	40,456
Total operating expenses	27,776	32,704	55,329	64,440
Operating loss	(3,370)	(3,202)	(3,991)	(2,327)
Interest expense and other income (loss), net	(635)	(1,632)	(1,462)	(2,860)
Net loss before income taxes	(4,005)	(4,834)	(5,453)	(5,187)
Income tax expense	568	701	978	1,261
Net loss including noncontrolling interest	(4,573)	(5,535)	(6,431)	(6,448)
Net loss attributable to noncontrolling interest	(3,568)	(3,990)	(6,435)	(7,319)
Net income (loss) attributable to Alpha and Omega Semiconductor Limited	\$ (1,005)	\$ (1,545)	\$ 4	\$ 871
Net income (loss) per common share attributable to Alpha and Omega Semiconductor Limited				
Basic	\$ (0.04)	\$ (0.06)	\$ 0.00	\$ 0.04
Diluted	\$ (0.04)	\$ (0.06)	\$ 0.00	\$ 0.04
Weighted average number of common shares attributable to Alpha and Omega Semiconductor Limited used to compute net income (loss) per share				
Basic	24,701	23,887	24,620	23,865
Diluted	24,701	23,887	25,362	24,513

See accompanying notes to these condensed consolidated financial statements.

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(Unaudited, in thousands)

	Three Months Ended December 31,		Six Months Ended December 31,	
	2019	2018	2019	2018
Net loss including noncontrolling interest	\$ (4,573)	\$ (5,535)	\$ (6,431)	\$ (6,448)
Other comprehensive income, net of tax				
Foreign currency translation adjustment	3,055	(58)	(3,096)	(6,295)
Comprehensive loss	(1,518)	(5,593)	(9,527)	(12,743)
Noncontrolling interest	(2,150)	(4,014)	(7,985)	(10,332)
Comprehensive income (loss) attributable to Alpha and Omega Semiconductor Limited	\$ 632	\$ (1,579)	\$ (1,542)	\$ (2,411)

See accompanying notes to these condensed consolidated financial statements.

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
CONDENSED CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY
(Unaudited, in thousands)

	Common Shares	Treasury Stock	Additional Paid-In Capital	Accumulated Other Comprehensive Income	Retained Earnings	Total AOS Shareholders' Equity	Noncontrolling Interest	Total Equity
Balance, September 30, 2019	\$ 62	\$ (66,227)	\$ 236,683	\$ (5,876)	\$ 126,481	\$ 291,123	\$ 146,430	\$ 437,553
Exercise of common stock options and release of RSUs	—	—	26	—	—	26	—	26
Withholding tax on restricted stock units	—	—	(99)	—	—	(99)	—	(99)
Issuance of shares under ESPP	1	—	1,700	—	—	1,701	—	1,701
Share-based compensation	—	—	2,487	—	—	2,487	—	2,487
Net loss	—	—	—	—	(1,005)	(1,005)	(3,568)	(4,573)
Cumulative translation adjustment	—	—	—	1,637	—	1,637	1,418	3,055
Balance, December 31, 2019	<u>\$ 63</u>	<u>\$ (66,227)</u>	<u>\$ 240,797</u>	<u>\$ (4,239)</u>	<u>\$ 125,476</u>	<u>\$ 295,870</u>	<u>\$ 144,280</u>	<u>\$ 440,150</u>
	Common Shares	Treasury Stock	Additional Paid-In Capital	Accumulated Other Comprehensive Income	Retained Earnings	Total AOS Shareholders' Equity	Noncontrolling Interest	Total Equity
Balance, June 30, 2019	\$ 62	\$ (66,240)	\$ 234,410	\$ (2,693)	\$ 125,485	\$ 291,024	\$ 152,265	\$ 443,289
Exercise of common stock options and release of RSUs	—	—	26	—	—	26	—	26
Reissuance of treasury stock upon exercise of common stock options and release of restricted stock units	—	13	—	—	(13)	—	—	—
Withholding tax on restricted stock units	—	—	(195)	—	—	(195)	—	(195)
Issuance of shares under ESPP	1	—	1,700	—	—	1,701	—	1,701
Share-based compensation	—	—	4,856	—	—	4,856	—	4,856
Net income (loss)	—	—	—	—	4	4	(6,435)	(6,431)
Cumulative translation adjustment	—	—	—	(1,546)	—	(1,546)	(1,550)	(3,096)
Balance, December 31, 2019	<u>\$ 63</u>	<u>\$ (66,227)</u>	<u>\$ 240,797</u>	<u>\$ (4,239)</u>	<u>\$ 125,476</u>	<u>\$ 295,870</u>	<u>\$ 144,280</u>	<u>\$ 440,150</u>

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
CONDENSED CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY
(Unaudited, in thousands)

	Common Shares	Treasury Stock	Additional Paid-In Capital	Accumulated Other Comprehensive Income	Retained Earnings	Total AOS Shareholders' Equity	Noncontrolling Interest	Total Equity
Balance, September 30, 2018	\$ 61	\$ (66,283)	\$ 223,369	\$ (2,808)	\$ 126,083	\$ 280,422	\$ 141,250	\$ 421,672
Exercise of common stock options and release of RSUs	—	—	5	—	—	5	—	5
Withholding tax on restricted stock units	—	—	(94)	—	—	(94)	—	(94)
Issuance of shares under ESPP	—	—	1,168	—	—	1,168	—	1,168
Share-based compensation	—	—	3,370	—	—	3,370	—	3,370
Net income (loss)	—	—	—	—	(1,545)	(1,545)	(3,990)	(5,535)
Cumulative translation adjustment	—	—	—	(34)	—	(34)	(24)	(58)
Contributions from noncontrolling interest	—	—	—	—	—	—	24,000	24,000
Balance, December 31, 2018	\$ 61	\$ (66,283)	\$ 227,818	\$ (2,842)	\$ 124,538	\$ 283,292	\$ 161,236	\$ 444,528

	Common Shares	Treasury Stock	Additional Paid-In Capital	Accumulated Other Comprehensive Income	Retained Earnings	Total AOS Shareholders' Equity	Noncontrolling Interest	Total Equity
Balance, June 30, 2018	\$ 61	\$ (64,790)	\$ 220,244	\$ 440	\$ 122,639	\$ 278,594	\$ 147,568	\$ 426,162
Exercise of common stock options and release of restricted stock units	—	—	110	—	—	110	—	110
Reissuance of treasury stock upon exercise of common stock options and release of restricted stock units	—	8	—	—	(8)	—	—	—
Withholding tax on restricted stock units	—	—	(203)	—	—	(203)	—	(203)
Issuance of shares under ESPP	—	—	1,168	—	—	1,168	—	1,168
Repurchase of common shares under shares repurchase program	—	(1,501)	—	—	—	(1,501)	—	(1,501)
Share-based compensation	—	—	6,499	—	—	6,499	—	6,499
Net income (loss)	—	—	—	—	871	871	(7,319)	(6,448)
Impact on retained earnings related to ASC 606 adoption	—	—	—	—	1,036	1,036	—	1,036
Cumulative translation adjustment	—	—	—	(3,282)	—	(3,282)	(3,013)	(6,295)
Contributions from noncontrolling interest	—	—	—	—	—	—	24,000	24,000
Balance, December 31, 2018	\$ 61	\$ (66,283)	\$ 227,818	\$ (2,842)	\$ 124,538	\$ 283,292	\$ 161,236	\$ 444,528

See accompanying notes to these condensed consolidated financial statements.

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited, in thousands)

	Six Months Ended December 31,	
	2019	2018
Cash flows from operating activities		
Net loss including noncontrolling interest	\$ (6,431)	\$ (6,448)
Adjustments to reconcile net loss to net cash provided by operating activities:		
Depreciation and amortization	21,754	16,149
Share-based compensation expense	4,856	7,547
Deferred income taxes, net	(148)	94
Loss (gain) on disposal of property and equipment	89	(6)
Changes in assets and liabilities:		
Accounts receivable, net	(9,576)	(326)
Inventories	(4,856)	(12,780)
Other current and long-term assets	940	(696)
Accounts payable	(5,676)	9,927
Income taxes payable	453	(415)
Accrued and other liabilities	6,306	18,035
Net cash provided by operating activities	7,711	31,081
Cash flows from investing activities		
Purchases of property and equipment excluding JV Company	(20,354)	(23,218)
Purchases of property and equipment in JV Company	(12,067)	(42,723)
Purchase of intangible assets	—	(405)
Proceeds from sale of property and equipment	—	19
Government grant related to equipment in JV Company	1,254	—
Net cash used in investing activities	(31,167)	(66,327)
Cash flows from financing activities		
Proceeds from investment by noncontrolling interest	—	24,000
Withholding tax on restricted stock units	(195)	(203)
Proceeds from exercise of stock options and ESPP	1,727	1,278
Payment for repurchases of common shares	—	(1,501)
Proceeds from borrowings	33,708	36,191
Repayments of borrowings	(20,863)	(7,308)
Principal payments on finance lease	(3,403)	(417)
Net cash provided by financing activities	10,974	52,040
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(347)	(1,631)
Net increase (decrease) in cash, cash equivalents and restricted cash	(12,829)	15,163
Cash, cash equivalents and restricted cash at beginning of period	124,295	131,724
Cash, cash equivalents and restricted cash at end of period	<u>\$ 111,466</u>	<u>\$ 146,887</u>
Supplemental disclosures of non-cash investing and financing information:		
Property and equipment purchased but not yet paid (2018 amount is presented as revised, see Note 1)	\$ 18,165	\$ 30,335

See accompanying notes to these condensed consolidated financial statements.

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

1. The Company and Significant Accounting Policies

The Company

Alpha and Omega Semiconductor Limited and its subsidiaries (the “Company”, “AOS”, “we” or “us”) design, develop and supply a broad range of power semiconductors. The Company's portfolio of products targets high-volume applications, including personal computers, flat panel TVs, LED lighting, smart phones, battery packs, quick chargers, home appliances, consumer and industrial motor controls and power supplies for TVs, computers, servers and telecommunications equipment. The Company conducts its operations primarily in the United States of America (“USA”), Hong Kong, China, and South Korea.

Basis of Preparation

The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States (“U.S. GAAP”) for interim financial information and with the instructions to Article 10 of Securities and Exchange Commission Regulation S-X, as amended. They do not include all information and footnotes necessary for a fair presentation of financial position, results of operations and cash flows in conformity with U.S. GAAP for complete financial statements. These condensed consolidated financial statements should be read in conjunction with the consolidated financial statements and related notes contained in the Company's Annual Report on Form 10-K for the fiscal year ended June 30, 2019. All significant intercompany balances and transactions have been eliminated in consolidation. In the opinion of management, all adjustments (consisting of normal recurring adjustments and accruals) considered necessary for a fair presentation of the results of operations for the periods presented have been included in the interim periods. Operating results for the six months ended December 31, 2019 are not necessarily indicative of the results that may be expected for the fiscal year ending June 30, 2020 or any other interim period. The condensed consolidated balance sheet at June 30, 2019 is derived from the audited financial statements included in the Company's Annual Report on Form 10-K for the fiscal year ended June 30, 2019.

During the six months ended December 31, 2019, the Company corrected the prior year amount of property and equipment purchased but not yet paid in the supplemental disclosures of non-cash investing and financing information by decreasing it by \$31.3 million, from \$61.6 million to \$30.3 million. This disclosure change had no effect on the consolidated statements of operations and cash flows for the six months ended December 31, 2018.

Leases

On July 1, 2019, the Company adopted Topic 842, Leases, using the modified retrospective method. Results for reporting periods beginning after July 1, 2019 were presented under Topic 842, while prior period amounts were not adjusted and continue to be reported in accordance with the historical accounts under Topic 840.

The Company determines if an arrangement is a lease at inception. Operating leases are included in operating lease right-of-use (“ROU”) assets, current operating lease liabilities and long-term operating lease liabilities on the Company's condensed consolidated balance sheets. Finance leases are included in property, plant and equipment, finance lease liabilities and long-term finance leases liabilities on the condensed consolidated balance sheets.

The Company elected the practical expedient permitted under the transition guidance, which allowed the Company to carryforward its historical lease classification, the Company's assessment on whether a contract was or contains a lease, and its initial direct costs for any leases that existed prior to July 1, 2019. The Company elected to combine its lease and non-lease components as a single lease component for all asset classes.

Operating lease ROU assets and operating lease liabilities are recognized based on the present value of the future minimum lease payments over the lease term at commencement date. The Company uses an estimate of its incremental borrowing rate based on the information available at the lease commencement date. The operating lease ROU assets also include any lease payments made and excludes lease incentives. Lease terms may include options to extend or terminate the lease when it is reasonably certain that the Company will exercise such options. Operating lease expense is generally recognized on a straight-line basis over the lease term. Variable lease payments are expensed as incurred and are not included

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

(Unaudited)

within the operating lease ROU asset and lease liability calculation. The Company does not record leases on the condensed consolidated balance sheet with a term of one year or less.

See Note 6 for further details.

Joint Venture

In March 2016, the Company executed an agreement with two strategic investment funds owned by the Municipality of Chongqing, China (the "Chongqing Funds") to form a joint venture, (the "JV Company"), for a new state-of-the-art power semiconductor packaging, testing and wafer fabrication facility in Liangjiang New Area of Chongqing (the "Joint Venture"). As of December 31, 2019, the Company owns 51%, and the Chongqing Funds own 49% of the equity interest in the JV Company. The Joint Venture is accounted for under the provisions of the consolidation guidance since the Company has a controlling financial interest. The JV Company has continued ramping up its production of assembly and testing during the six months ended December 31, 2019. In July 2019, we commenced limited mass production at the 12-inch wafer fabrication facility, and continued ramping up during the six months ended December 31, 2019.

Use of Estimates

The preparation of the condensed consolidated financial statements in conformity with U.S. GAAP requires the Company to make estimates, judgments and assumptions that affect the reported amounts of assets, liabilities, revenue and expenses. To the extent there are material differences between these estimates and actual results, the Company's condensed consolidated financial statements will be affected. On an ongoing basis, the Company evaluates the estimates, judgments and assumptions including those related to stock rotation returns, price adjustments, allowance for doubtful accounts, inventory reserves, warranty accrual, income taxes, leases, share-based compensation, and useful lives for property, plant and equipment and intangible assets.

Share-based Compensation Expense

The Company recognizes expense related to share-based compensation awards that are ultimately expected to vest based on estimated fair values on the date of grant. The fair value of restricted share units is based on the market value of the Company's common share on the date of grant. For restricted stock awards subject to market conditions, the fair value of each restricted stock award is estimated at the date of grant using the Monte-Carlo pricing model. The fair value of stock options is estimated on the date of grant using the Black-Scholes option valuation model. Share-based compensation expense is recognized on the accelerated attribution basis, net of estimated forfeitures, over the requisite service period of the award, which generally equals the vesting period.

Restricted Cash

As a condition of the loan agreement, the Company is required to keep a compensating balance at the issuing bank (see Note 5). In addition, the Company also maintained restricted cash in connection with cash balances temporarily restricted for regular business operations including a dispute case with a vendor. These balances have been excluded from the Company's cash and cash equivalents balance and are classified as restricted cash in the Company's consolidated balance sheets. As of December 31, 2019 and June 30, 2019, the amount of restricted cash was \$4.2 million and \$2.4 million, respectively.

Fair Value of Financial Instruments

The fair value of cash equivalents is based on observable market prices and have been categorized in Level 1 in the fair value hierarchy. Cash equivalents consist primarily of short term bank deposits. The carrying values of financial instruments such as cash and cash equivalents, accounts receivable and accounts payable approximate their carrying values due to their short-term maturities. The carrying value of the company's debt is considered a reasonable estimate of fair value which is estimated by considering the current rates available to the Company for debt of the same remaining maturities, structure and terms of the debts.

Comprehensive Income (Loss)

ALPHA AND OMEGA SEMICONDUCTOR LIMITED
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

(Unaudited)

Comprehensive income (loss) is defined as the change in equity of a business enterprise during a period from transactions and other events and circumstances from non-owner sources. The Company's accumulated other comprehensive income (loss) consists of cumulative foreign currency translation adjustments. Total comprehensive income (loss) is presented in the condensed consolidated statements of comprehensive income (loss).

Recent Accounting Pronouncements

Recently Issued Accounting Standards not yet adopted

In December 2019, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) No. 2019-12 "Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes ("ASU 2019-12") by removing certain exceptions to the general principles. The amendments will be effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2020. Early adoption of the amendments is permitted. Depending on the amendment, adoption may be applied on a retrospective, modified retrospective or prospective basis. We are currently evaluating the impacts of adoption of the new guidance to our consolidated financial statements.

In August 2018, the FASB issued ASU 2018-15 "Intangibles - Goodwill and Other - Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract". These amendments align the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software (and hosting arrangements that include an internal-use software license). The accounting for the service element of a hosting arrangement that is a service contract is not affected by these amendments. ASU 2018-15 is effective for annual periods, including interim periods within those annual periods, beginning after December 15, 2019. Early adoption is permitted. The Company is currently assessing the impact that adoption of this guidance will have on its consolidated financial statements.

In August 2018, the FASB issued ASU 2018-13, "Fair Value Measurement (Topic 820): Disclosure Framework-Changes to the Disclosure Requirements for Fair Value Measurement ("ASU 2018-13"). ASU 2018-13 amends existing fair value measurement disclosure requirements by adding, changing, or removing certain disclosures. The amendments on changes in unrealized gains and losses, the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements, and the narrative description of measurement uncertainty should be applied prospectively for only the most recent interim or annual period presented in the initial fiscal year of adoption. All other amendments should be applied retrospectively to all periods presented upon their effective date. ASU No. 2018-13 is effective for fiscal years and interim periods within those fiscal years, beginning after December 15, 2019. The Company does not expect the adoption of this guidance will have a material impact on its consolidated financial position, results of operations or cash flows.

In June 2016, the FASB issued ASU 2016-13, "Financial Instruments - Credit Losses ("ASU 2016-13"). This accounting standard update changes the accounting for recognizing impairments of financial assets. Under the update, credit losses for certain types of financial instruments will be estimated based on expected losses. The update also modifies the impairment models for available-for-sale debt securities and for purchased financial assets with credit deterioration since their origination. This update is effective for fiscal years beginning after December 15, 2019, including interim periods within those fiscal years. The Company is currently evaluating the impact of this accounting standard update on its Consolidated Financial Statements.

Recently Adopted Accounting Standards

In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842). This guidance requires a dual approach for lessee accounting under which a lessee accounts for leases as finance leases or operating leases. Both finance and operating leases result in the lessee recognizing a right-of-use asset and a corresponding liability on its balance sheet, with differing methodology for income statement recognition. The Company adopted this standard as of July 1, 2019, using the modified retrospective transition method and recorded a cumulative-effect balance sheet adjustment. As a result of adopting ASU 2016-02 on July 1, 2019, the Company recognized operating lease right-of-use assets and corresponding operating lease liabilities of approximately \$21 million each from existing leases on the Company's condensed consolidated balance sheet. See Note 6 for further details.

In June 2018, the FASB issued ASU 2018-07, "Compensation -Stock Compensation: Improvement to Nonemployees Share-Based Payment Accounting ("ASU 2018-07"), which expands the scope of Topic 718 to include all share-based payment transactions for acquiring goods and services from nonemployees. ASU 2018-07 specifies that Topic 718 applies to all share-

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based payment transactions in which the grantor acquires goods and services to be used or consumed in its own operations by issuing share-based payment awards. ASU 2018-07 also clarifies that Topic 718 does not apply to share-based payments used to effectively provide (1) financing to the issuer or (2) awards granted in conjunction with selling goods or services to customers as part of a contract accounted for under ASC 606. ASU 2018-07 had no material impact on the Company's consolidated financial statements.

2. Net Income (Loss) Per Common Share Attributable to Alpha and Omega Semiconductor Limited

The following table presents the calculation of basic and diluted net income (loss) per share attributable to common shareholders:

	Three Months Ended December 31,		Six Months Ended December 31,	
	2019	2018	2019	2018
	(in thousands, except per share data)			
Numerator:				
Net income (loss) attributable to Alpha and Omega Semiconductor Limited	\$ (1,005)	\$ (1,545)	\$ 4	\$ 871
Denominator:				
Basic:				
Weighted average number of common shares used to compute basic net income per share	24,701	23,887	24,620	23,865
Diluted:				
Weighted average number of common shares used to compute basic net income per share	24,701	23,887	24,620	23,865
Effect of potentially dilutive securities:				
Stock options, RSUs and ESPP shares	—	—	742	648
Weighted average number of common shares used to compute diluted net income per share	24,701	23,887	25,362	24,513
Net income (loss) per share attributable to Alpha and Omega Semiconductor Limited:				
Basic	\$ (0.04)	\$ (0.06)	\$ 0.00	\$ 0.04
Diluted	\$ (0.04)	\$ (0.06)	\$ 0.00	\$ 0.04

The following potential dilutive securities were excluded from the computation of diluted net income per share as their effect would have been anti-dilutive:

	Three Months Ended December 31,		Six Months Ended December 31,	
	2019	2018	2019	2018
	(in thousands)		(in thousands)	
Employee stock options and RSUs	2,040	2,225	337	646
ESPP	868	1,240	597	508
Total potential dilutive securities	2,908	3,465	934	1,154

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3. Concentration of Credit Risk and Significant Customers

The Company manages its credit risk associated with exposure to distributors and direct customers on outstanding accounts receivable through the application and review of credit approvals, credit ratings and other monitoring procedures. In some instances, the Company also obtains letters of credit from certain customers.

Credit sales, which are mainly on credit terms of 30 to 60 days, are only made to customers who meet the Company's credit requirements, while sales to new customers or customers with low credit ratings are usually made on an advance payment basis. The Company considers its trade accounts receivable to be of good credit quality because its key distributors and direct customers have long-standing business relationships with the Company and the Company has not experienced any significant write-offs of accounts receivable in the past. The Company closely monitors the aging of accounts receivable from its distributors and direct customers, and regularly reviews their financial positions, when available.

The Company ships its product indirectly to Huawei and its affiliates (collectively, "Huawei") through distributors. Typically, the Company sells its products to distributors who then sell to original design manufacturers ("ODM's") that incorporate our products into end applications that are then shipped to Huawei. While distributor point of sale reports summarize distributor sales to ODM's, the Company must make certain assumptions and estimates in order to determine the amount of revenues attributed to indirect shipment to Huawei. During the fiscal year ended June 30, 2019, the estimated revenues attributed to indirect shipment to Huawei were approximately 2% of total revenues. During the period from May 2019 to December 2019, estimated revenues earned by the Company from shipments indirectly made to Huawei were in the range of \$11 million to \$13 million. See Note 10.

Summarized below are individual customers whose revenue or accounts receivable balances were more than 10% of the respective total consolidated amounts:

Percentage of revenue	Three Months Ended December 31,		Six Months Ended December 31,	
	2019	2018	2019	2018
Customer A	31.3%	30.6%	30.0%	29.1%
Customer B	37.0%	37.6%	36.0%	37.8%

Percentage of accounts receivable	December 31, 2019	June 30, 2019
Customer A	14.0%	12.1%
Customer B	39.9%	19.7%
Customer C	*	18.1%
Customer D	*	13.3%

* Less than 10%

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4. Balance Sheet Components

Accounts receivable, net:

	December 31, 2019	June 30, 2019
	(in thousands)	
Accounts receivable	\$ 58,859	\$ 48,401
Less: Allowance for price adjustments	(24,957)	(24,075)
Less: Allowance for doubtful accounts	(30)	(30)
Accounts receivable, net	<u>\$ 33,872</u>	<u>\$ 24,296</u>

Inventories:

	December 31, 2019	June 30, 2019
	(in thousands)	
Raw materials	\$ 58,454	\$ 59,076
Work in-process	47,818	38,214
Finished goods	11,319	14,353
	<u>\$ 117,591</u>	<u>\$ 111,643</u>

Other current assets:

	December 31, 2019	June 30, 2019
	(in thousands)	
VAT receivable	\$ 28,125	\$ 30,769
Other prepaid expenses	1,884	2,745
Prepaid insurance	1,238	939
Prepaid maintenance	858	481
Prepayment to supplier	1,048	583
Prepaid income tax	285	267
Customs deposit	195	114
Lease financing cost	—	825
Interest receivable	679	379
Other receivable	83	—
	<u>\$ 34,395</u>	<u>\$ 37,102</u>

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Property, plant and equipment, net:

	December 31, 2019	June 30, 2019
	(in thousands)	
Land	\$ 4,877	\$ 4,877
Building	59,329	36,205
Manufacturing machinery and facility equipment	434,089	303,750
Equipment and tooling	23,200	20,739
Computer equipment and software	38,413	34,048
Office furniture and equipment	3,378	3,243
Leasehold improvements	67,972	53,597
Land use rights	8,602	8,760
	639,860	465,219
Less: accumulated depreciation	(271,170)	(252,982)
	368,690	212,237
Equipment and construction in progress	47,365	197,500
Property, plant and equipment, net	\$ 416,055	\$ 409,737

Intangible assets, net:

	December 31, 2019	June 30, 2019
	(in thousands)	
Patents and technology rights	\$ 18,037	\$ 18,037
Trade name	268	268
Customer relationships	1,150	1,150
	19,455	19,455
Less: accumulated amortization	(2,898)	(2,842)
	16,557	16,613
Goodwill	269	269
Intangible assets, net	\$ 16,826	\$ 16,882

Intangible assets of patents and technology rights are primarily related to a license agreement that the Company entered into with STMicroelectronics International N.V. ("STMicro") on September 5, 2017, pursuant to which STMicro granted the Company a world-wide, royalty-free and fully-paid license to use its technologies to develop, market and distribute certain digital multi-phase controller products. This agreement allows the Company to develop and market digital power products, primarily in the computer server segment. As of December 31, 2019, the Company recorded \$16.2 million of intangible assets related to STMicro. The Company begins amortizing such license fees when the technology has met the Company's qualification and is ready for its intended use in production.

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Other long-term assets:

	December 31, 2019		June 30, 2019
	(in thousands)		
Prepayments for property and equipment	\$ 4,043	\$	4,846
Investment in a privately held company	700		700
Lease financing costs	—		1,758
Customs deposit	1,875		980
Other long-term deposits	1,595		889
Office leases deposits	1,044		1,031
Other	245		413
	<u>\$ 9,502</u>	<u>\$</u>	<u>10,617</u>

Accrued liabilities:

	December 31, 2019		June 30, 2019
	(in thousands)		
Accrued compensation and benefits	\$ 19,284	\$	16,385
Warranty accrual	651		623
Stock rotation accrual	3,836		1,921
Accrued professional fees	2,496		1,721
Accrued inventory	668		857
Accrued facilities related expenses	2,218		4,233
Accrued financing lease costs	715		728
Accrued property, plant and equipment	11,806		11,527
ESPP payable	623		585
Customer deposit	2,318		351
Other accrued expenses	8,079		5,144
	<u>\$ 52,694</u>	<u>\$</u>	<u>44,075</u>

The activities in the warranty accrual, included in accrued liabilities, are as follows:

	Six Months Ended December 31,	
	2019	2018
	(in thousands)	
Beginning balance	\$ 623	\$ 535
Additions	130	189
Utilization	(102)	(69)
Ending balance	<u>\$ 651</u>	<u>\$ 655</u>

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The activities in the stock rotation accrual, included in accrued liabilities, are as follows:

	Six Months Ended December 31,	
	2019	2018
	(in thousands)	
Beginning balance	\$ 1,921	\$ 1,750
Additions	5,990	2,229
Utilization	(4,075)	(2,132)
Ending balance	<u>\$ 3,836</u>	<u>\$ 1,847</u>

Other long-term liabilities:

	December 31, 2019		June 30, 2019	
	(in thousands)			
Customer deposits	\$ 8,000	*	\$ 10,000	*
Computer software liabilities	2,810		3,701	
Other	—		220	
Other long-term liabilities	<u>\$ 10,810</u>		<u>\$ 13,921</u>	

* Customer deposits are from Customer A and Customer B for securing future product shipments from the Company. The Company reclassified \$2.0 million of the customer deposit to short term accrued liabilities during the six months ended December 31, 2019 since the repayment of this amount is due within a year.

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5. Bank Borrowings

Short-term borrowings

In October 2019, the Company's subsidiary in China entered into a line of credit facility with Bank of Communications Limited in China. This line of credit matures on February 14, 2021 and is based on the China Base Rate multiplied by 1.05, or 4.99% on October 31, 2019. The purpose of the credit facility was to provide short-term borrowings. The Company could borrow up to approximately RMB 60.0 million or \$8.5 million based on the currency exchange rate between the RMB and the U.S. Dollar on October 31, 2019. As of December 31, 2019, there was no outstanding balance under the loan.

On September 23, 2019, the JV Company entered into a short term revolving loan agreement with China Everbright bank in China. The JV Company can borrow up to Chinese Renminbi (RMB) 50.0 million, or \$7.1 million based on the currency exchange rate between RMB and U.S. Dollar on September 23, 2019, at varying interest rates, with either RMB or USD. Interest payments with the entire principal are due no later than 90 days from each borrowing date. As of December 31, 2019, the outstanding balance under the loan was \$6.3 million.

On March 21, 2019, the JV Company entered into a one-year loan agreement with China Everbright Bank in China to provide a loan for RMB 20 million, or \$3.0 million based on the currency exchange rate between RMB and U.S. Dollar on March 31, 2019 at a fixed interest rate of 5.44% per annum. Interest payments are due monthly with the entire principal due on March 21, 2020. As of December 31, 2019, the outstanding balance under the loan was 20 million RMB (equivalent of \$2.9 million based on the currency exchange rate as of December 31, 2019).

On November 29 and December 4, 2018, the JV Company entered into two one-year loan agreements with China Merchant Bank and Chongqing LiangJiang New District China Merchants Group Limited Company in China to provide loans for RMB 80 million and 20 million, respectively, or \$14.5 million in total based on the currency exchange rate between RMB and U.S. Dollar on December 31, 2018, at varying interest rates. In December 2019, the JV Company repaid these borrowings on their maturity dates. On January 20, 2020, the JV Company renewed the loan agreements. Interest payments are due monthly and quarterly with the entire principal due not later than January 21, 2021. As of December 31, 2019, there were no outstanding balances under the loans.

On November 16, 2018, the Company's subsidiary in China entered into a line of credit facility with Industrial and Commercial Bank of China, which expired on September 30, 2019. The purpose of the credit facility was to provide short-term borrowings. The Company could borrow up to approximately RMB 72.0 million or \$10.3 million based on currency exchange rate between RMB and U.S. Dollar on November 16, 2018. In October 2019, this line of credit was renewed with a maturity date of September 30, 2020. As of December 31, 2019, there was no outstanding balance under the line of credit.

Accounts Receivable Factoring Agreement

On August 9, 2019, one of the Company's wholly-owned subsidiaries ("the "Borrower") entered into a factoring agreement with the Hongkong and Shanghai Banking Corporation Limited ("HSBC"), whereby the Borrower assigns certain of its accounts receivable with recourse. This factoring agreement allows the Borrower to borrow up to 70% of the net amount of its eligible accounts receivable of the Borrower with a maximum amount of \$30.0 million. The interest rate is based on one month LIBOR plus 1.75% per annum. This agreement, with certain financial covenants required, has no expiration date. The Company is the guarantor for this agreement. The Company is accounting for this transaction as a secured borrowing under the Transfers and Servicing of Financial Assets guidance. In addition, any cash held in the restricted bank account controlled by HSBC has a legal right of offset against the borrowing. The Borrower was in compliance with these covenants as of December 31, 2019. In December 2019, \$2.0 million of borrowing in August was repaid. As of December 31, 2019, there was no outstanding balance and the Company had unused credit of approximately \$30.0 million.

Credit Facilities

On May 9, 2018 (the "Effective Date"), the JV Company entered into a lease finance agreement and a security agreement (the "Agreements") with YinHai Leasing Company and China Import/Export Bank (the "Lenders"). Pursuant to the Agreements, the Lenders agree to provide an aggregate of RMB 400.0 million, or \$62.8 million based on the currency exchange rate between RMB and U.S. Dollar on the Effective Date, of financing to the JV Company (the "Lease Financing"). In exchange for the Lease Financing, the JV Company agrees to transfer title of its assembly and testing equipment to the Lenders,

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and the Lenders lease such equipment to the JV Company under a five-year lease arrangement, pursuant to which the JV Company makes quarterly lease payments to the Lenders consisting of principal and interest based on a repayment schedule mutually agreed by the parties. The interest under the Lease Financing is accrued based on the China Base Rate multiplied by 1.15, or 5.4625% on the Effective Date. Under the Agreements, at the end of the five-year lease term, the Lenders agree to sell such equipment back to the JV Company for a nominal amount (RMB 1). The JV Company's obligations under the Lease Financing are secured by the land and building owned by the JV Company (the "Collateral"). The proceeds from the Lease Financing will be used primarily for the acquisition and installation of the 12-inch fabrication equipment and other expenses of the JV Company relating to the completion of the fabrication facility located in Chongqing. The Agreements contain customary representation, warranties and covenants, including restrictions on the transfer of the Collateral. The Agreements also contain customary events of default, including but not limited to, failure to make payments and breach of material terms under the Agreements. The Agreements include certain customary closing conditions, including the payment of deposit by the JV Company. As of December 31, 2019, the outstanding balance under the Agreement was 352.0 million RMB (equivalent of \$50.3 million based on the currency exchange rate as of December 31, 2019), which was recorded under short-term and long-term finance lease liabilities.

See future minimum lease payments table for finance lease liabilities in Note 6.

Long-term debt

In December 2019, the JV Company entered into a loan agreement with China Development Bank in the amount of \$24.0 million. The obligation under the loan agreement is secured by certain assets of the JV Company. Beginning December 18, 2020, the JV Company will make consecutive semi-annual payments of principal until December 8, 2024. The interest is accrued based on the LIBOR rate plus 280BP. The interest is required to be paid on March 21 and September 21 each year. As of December 31, 2019, the outstanding balance of the loan was \$24.0 million.

On March 12, 2019, the JV Company entered into a loan agreement with The Export-Import Bank of China in the aggregate principal amount of 200 million RMB (approximately \$29.8 million based on currency exchange rate between RMB and U.S. Dollar on March 31, 2019). The loan will mature on February 20, 2025. The JV Company drew down 190 million RMB and 10 million RMB in March 2019 and December 2019, respectively. The loan withdraw window will expire on February 28, 2020. The interest is accrued based on the China Base Rate multiplied by 1.1, or 5.39%. The loan requires quarterly interest payments. The principal payments are required to be paid every 6 months over the term of loan commencing in October 2019. This loan is secured by the buildings and certain equipment owned by the JV Company. As a condition of the loan arrangements, 14 million RMB (approximately \$2.0 million) of cash is held as restricted cash by the JV Company as a compensating balance at the JV Company's bank until the principal is paid. In December 2019, 3.0 million RMB was repaid. As of December 31, 2019, the outstanding balance of the loan was 197 million RMB (equivalent of \$28.2 million based on the currency exchange rate as of December 31, 2019).

On May 1, 2018, Jireh Semiconductor Incorporated ("Jireh"), a wholly-owned subsidiary of the Company, entered into a loan agreement with a financial institution (the "Bank") that provided a term loan in the amount of \$17.8 million. The obligation under the loan agreement is secured by certain real estate assets of Jireh and guaranteed by the Company. The loan has a five-year term and matures on June 1, 2023. Beginning June 1, 2018, Jireh made consecutive monthly payments of principal and interest to the Bank. The outstanding principal shall accrue interest at a fixed rate of 5.04% per annum on the basis of a 360-day year. The loan agreement contains customary restrictive covenants and includes certain financial covenants that require the Company to maintain, on a consolidated basis, specified financial ratios. The Company was in compliance with these covenants as of December 31, 2019. As of December 31, 2019, the outstanding balance of the term loan was \$16.4 million.

On August 15, 2017, Jireh entered into a credit agreement with the Bank that provided a term loan in an amount up to \$30.0 million for the purpose of purchasing certain equipment for the Company's fabrication facility located in Oregon. The obligation under the credit agreement is secured by substantially all assets of Jireh and guaranteed by the Company. The credit agreement has a five-year term and matures on August 15, 2022. In January 2018 and July 2018, Jireh drew down the loan in the amount of \$13.2 million and \$16.7 million, respectively. Beginning in October 2018, Jireh was required to pay to the Bank on each payment date, the outstanding principal amount of the loan in monthly installments. The loan accrues interest based on an adjusted London Interbank Offered Rate ("LIBOR") as defined in the credit agreement, plus a specified applicable margin in the range of 1.75% to 2.25%, based on the outstanding balance of the loan. The credit agreement contains customary restrictive covenants and includes certain financial covenants that require the Company to maintain, on a consolidated basis, specified

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financial ratios and fixed charge coverage ratio. The Company was in compliance with these covenants as of December 31, 2019. As of December 31, 2019, the outstanding balances of the term loan were \$20.5 million.

Maturities of short-term debt and long-term debt were as follows (in thousands):

Year ending June 30,	
2020 (Remaining)	\$ 13,738
2021	14,569
2022	20,115
2023	28,604
2024	12,175
Thereafter	8,975
Total principal of debts	98,176
Less: debt issuance costs	(838)
Total principal of debt, less debt issuance costs	\$ 97,338

	Short-term Debt	Long-term Debt
Principal amount	\$ 21,212	\$ 76,964
Less: debt issuance costs	(183)	(655)
Total debt, less debt issuance costs	\$ 21,029	\$ 76,309

6. Leases

Under Topic 842, the Company evaluates contracts for lease accounting at contract inception and assesses lease classification at the lease commencement date. Operating leases are included in operating lease right-of-use ("ROU") assets, operating lease liabilities and operating lease liabilities - long-term on the Company's consolidated balance sheets. Finance leases are included in property, plant and equipment, finance lease liabilities and finance lease liabilities-long-term on the consolidated balance sheets. The Company recognizes an ROU asset and corresponding lease obligation liability at the lease commencement date where the lease obligation liability is measured at the present value of the minimum lease payments. As most of the leases do not provide an implicit rate, the Company uses its incremental borrowing rate at lease commencement. The Company uses an interest rate commensurate with the interest rate to borrow on a collateralized basis over a similar term with an amount equal to the lease payments. Operating leases are primarily related to offices, research and development facilities, sales and marketing facilities, and manufacturing facilities. In addition, long-term supply agreements to lease gas tank equipment and purchase industrial gases are accounted for as operating leases. Lease agreements frequently include renewal provisions and require the Company to pay real estate taxes, insurance and maintenance costs. For operating leases, the amortization of the ROU asset and the accretion of its lease obligation liability result in a single straight-line expense recognized over the lease term. The finance lease is related to the RMB 400.0 million of lease financing with YinHai Leasing Company and China Import/Export Bank in the JV Company. See Note 5 - Bank Borrowings for details. The Company does not record leases on the condensed consolidated balance sheet with a term of one year or less.

The components of the Company's operating and finance lease expenses are as follows for the period presented (in thousands):

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	Six Months Ended December 31, 2019
Operating Leases:	
Fixed rent expense	\$ 2,614
Variable rent expense	421
Finance Lease:	
Amortization of equipment	1,716
Interest	1,457
Short-term leases	
Short-term lease expenses	152
Total lease expenses	<u>\$ 6,360</u>

Supplemental balance sheet information related to the Company's operating and finance leases is as follows (in thousands, except lease term and discount rate):

	December 31, 2019
Operating Leases:	
ROU assets associated with operating leases	\$ 18,667
Finance Lease:	
Property, plant and equipment, gross	105,606
Accumulated depreciation	(86,806)
Property, plant and equipment, net	18,800
Weighted average remaining lease term (in years)	
Operating leases	9.73
Finance lease	3.22
Weighted average discount rate	
Operating leases	5.29%
Finance lease	5.46%

Supplemental cash flow information related to the Company's operating and finance lease is as follows (in thousands):

	Six Months Ended December 31, 2019
Cash paid from amounts included in the measurement of lease liabilities:	
Operating cash flows from operating leases	\$ 2,541
Operating cash flows from finance lease	\$ 1,457
Financing cash flows from finance lease	\$ 3,403

Future minimum lease payments are as follows as of December 31, 2019 (in thousands):

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	Operating Leases	Finance Leases
The remainder of 2020	\$ 2,417	\$ 9,062
2021	3,248	17,477
2022	2,716	16,622
2023	2,360	12,048
2024	1,973	—
2025	1,466	—
Thereafter	10,128	—
Total minimum lease payments	24,308	55,209
Less amount representing interest	(5,467)	(4,893)
Total lease liabilities	\$ 18,841	\$ 50,316

Prior to the adoption of the new lease standard, future minimum lease payments as of June 30, 2019 were as follows (in thousands):

Year ending June 30,	Operating Leases	Finance Leases
2020	\$ 4,357	\$ 14,219
2021	1,741	17,799
2022	1,164	16,928
2023	894	12,269
2024	1,002	—
Thereafter	149	—
Total minimum lease payments	9,307	61,215
Less amount representing interest	—	(6,479)
Total lease liabilities	\$ 9,307	\$ 54,736

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7. Shareholders' Equity and Share-based Compensation

Share Repurchase

In September 2017, the Board of Directors approved a new repurchase program (the "Repurchase Program") that allowed the Company to repurchase its common shares from the open market pursuant to a pre-established Rule 10b5-1 trading plan or through privately negotiated transactions up to an aggregate of \$30.0 million. The amount and timing of any repurchases under the Repurchase Program depend on a number of factors, including but not limited to, the trading price, volume, and availability of the Company's common shares. Shares repurchased under this program are accounted for as treasury shares and the total cost of shares repurchased is recorded as a reduction of shareholders' equity. From time to time, treasury shares may be reissued as part of the Company's stock-based compensation programs. Gains on re-issuance of treasury stock are credited to additional paid-in capital; losses are charged to additional paid-in capital to offset the net gains, if any, from previous sales or re-issuance of treasury stock. Any remaining balance of the losses is charged to retained earnings.

During the six months ended December 31, 2019, the Company did not repurchase any shares from the open market. Since the inception of the program, the Company repurchased an aggregate of 6,784,648 shares from the open market for a total cost of \$67.3 million, at an average price of \$9.92 per share, excluding fees and related expenses. No repurchased shares have been retired. Of the 6,784,648 repurchased shares, 140,328 shares with a weighted average repurchase price of \$10.39 per share, were reissued at an average price of \$5.50 per share pursuant to option exercises and vested restricted share units. As of December 31, 2019, approximately \$13.4 million remained available under the Repurchase Program.

Time-based Restricted Stock Units ("TRSUs")

The following table summarizes the Company's TRSU activities for the six months ended December 31, 2019:

	Number of Restricted Stock Units	Weighted Average Grant Date Fair Value Per Share	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value
Nonvested at June 30, 2019	906,341	\$ 14.09	1.62	\$ 8,465,225
Granted	64,442	\$ 12.24		
Vested	(73,312)	\$ 13.71		
Forfeited	(14,125)	\$ 14.12		
Nonvested at December 31, 2019	883,346	\$ 13.98	1.22	\$ 12,031,173

Market-based Restricted Stock Units ("MSUs")

During the quarter ended September 30, 2018, the Company granted 1.3 million market-based restricted stock units ("MSUs") to certain personnel. The number of shares to be earned at the end of performance period is determined based on the Company's achievement of specified stock prices and revenue thresholds during the performance period from January 1, 2019 to December 31, 2021 as well as the recipients remaining in continuous service with the Company through such period. The MSUs vest in four equal annual installments after the end of each performance period. The Company estimated the grant date fair values of its MSUs with derived service periods of 4.5 to 7.5 years using a Monte-Carlo simulation model with the following assumptions: Risk-free interest rate of 2.7%, expected term of 3.5 years, expected volatility of 38.8% and dividend yield of 0%. The Company recorded approximately \$0.1 million and \$0.3 million of expenses for these MSUs during the three and six months ended December 31, 2019, respectively, and approximately \$0.2 million and \$0.4 million during the three and six months ended December 31, 2018, respectively.

Performance-based Restricted Stock Units ("PRSUs")

In March 2017, 2018 and 2019, the Company granted 170,000, 298,050 and 291,750 performance-based RSUs ("PRSUs"), respectively to certain personnel. The number of shares to be earned under the PRSUs is determined based on the level of attainment of predetermined financial goals. The PRSUs vest in four equal annual installments from the first anniversary date after the grant date if certain predetermined financial goals were met. The Company recorded approximately \$0.5 million and \$0.7 million of expenses

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for these PRSUs during the three and six months ended December 31, 2019, respectively, and approximately \$0.8 million and \$1.4 million during the three and six months ended December 31, 2018, respectively.

The following table summarizes the Company's PRSUs activities for the six months ended December 31, 2019:

	Number of Performance-based Restricted Stock Units	Weighted Average Grant Date Fair Value Per Share	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value
Nonvested at June 30, 2019	596,724	\$ 13.95	1.88	\$ 5,573,402
Forfeited	(3,625)	\$ 15.11		
Nonvested at December 31, 2019	593,099	\$ 13.94	1.37	\$ 8,078,008

Stock Options

The Company did not grant any stock options during the three and six months ended December 31, 2019 and 2018. The number of options expected to vest is the result of applying the pre-vesting forfeiture rate assumption to total outstanding options.

The following table summarizes the Company's stock option activities for the six months ended December 31, 2019:

	Number of Shares	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Outstanding at June 30, 2019	876,478	\$ 10.98	3.06	\$ 758,871
Exercised	(2,500)	\$ 10.50		\$ 4,726
Canceled or forfeited	(5,000)	\$ 15.00		
Outstanding at December 31, 2019	868,978	\$ 10.96	2.58	\$ 3,108,361
Options vested and expected to vest	868,978	\$ 10.96	2.58	\$ 3,108,361
Exercisable at December 31, 2019	868,978	\$ 10.96	2.58	\$ 3,108,361

Employee Share Purchase Plan ("ESPP")

The assumptions used to estimate the fair values of common shares issued under the ESPP were as follows:

	Six Months Ended December 31, 2019
Volatility rate	46.4%
Risk-free interest rate	1.6%
Expected term	1.3 years
Dividend yield	0%

Share-based Compensation Expense

The total share-based compensation expense recognized in the condensed consolidated statements of operations for the periods presented was as follows:

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	Three Months Ended December 31,		Six Months Ended December 31,	
	2019	2018	2019	2018
	(in thousands)		(in thousands)	
Cost of goods sold	\$ 404	\$ 541	\$ 840	\$ 1,038
Research and development	472	742	996	1,374
Selling, general and administrative	1,611	3,135	3,020	5,135
	<u>\$ 2,487</u>	<u>\$ 4,418</u>	<u>\$ 4,856</u>	<u>\$ 7,547</u>

As of December 31, 2019, total unrecognized compensation cost under the Company's equity plans was \$9.3 million, which is expected to be recognized over a weighted-average period of 1.9 years.

8. Income Taxes

The Company recognized income tax expense of approximately \$0.6 million and \$0.7 million, for the three months ended December 31, 2019 and 2018, respectively. Excluding the discrete income tax items, the effective tax rate for the three months ended December 31, 2019 and 2018 was (13.8)%. The changes in the tax expense between the periods resulted primarily from changes in the mix of earnings in various geographic jurisdictions between the current year and the same period of last year.

For the six months ended December 31, 2019, the Company recognized income tax expense of approximately \$1.0 million, which included a discrete tax expense of \$0.03 million. For the six months ended December 31, 2018, the Company recognized income tax expense of approximately \$1.3 million, which included a discrete tax expense of \$0.03 million. Excluding the discrete income tax items, the estimated effective tax rate for the six months ended December 31, 2019 was (17.4)% compared to (23.7)% for the six months ended December 31, 2018. The changes in the effective tax rate and tax expense between the periods resulted primarily from changes in the mix of earnings in various geographic jurisdictions between the current year and the same period of last year.

The Company files its income tax returns in the United States and in various foreign jurisdictions. The tax years 2001 to 2019 remain open to examination by U.S. federal and state tax authorities. The tax years 2012 to 2019 remain open to examination by foreign tax authorities.

The Company's income tax returns are subject to examinations by the Internal Revenue Service and other tax authorities in various jurisdictions. In accordance with the guidance on the accounting for uncertainty in income taxes, the Company regularly assesses the likelihood of adverse outcomes resulting from these examinations to determine the adequacy of its provision for income taxes. These assessments can require considerable estimates and judgments. As of December 31, 2019, the gross amount of unrecognized tax benefits was approximately \$7.3 million, of which \$4.3 million, if recognized, would reduce the effective income tax rate in future periods. If the Company's estimate of income tax liabilities proves to be less than the ultimate assessment, then a further charge to expense would be required. If events occur and the payment of these amounts ultimately proves to be unnecessary, the reversal of the liabilities would result in tax benefits being recognized in the period when the Company determines the liabilities are no longer necessary. The Company does not anticipate any material changes to its uncertain tax positions during the next twelve months.

On July 27, 2015, in *Altera Corp. v. Commissioner*, the U.S. Tax Court issued an opinion related to the treatment of stock-based compensation expense in an intercompany cost-sharing arrangement. In the July 2015 ruling, the Tax Court concluded that the sharing of the cost of employee stock compensation in a company's cost-sharing arrangement was invalid under the U.S. Administrative Procedures Act. In June 2019, a panel of the Ninth Circuit of the U.S. Court of Appeals reversed this decision. In July 2019, Altera petitioned U.S. Court of Appeals for the Ninth Circuit to hold an en banc rehearing of the case. Due to the uncertainty surrounding the status of the current regulations and questions related to the scope of potential benefits, the Company has not recorded any benefit as of December 31, 2019. The Company will continue to monitor ongoing developments and potential impacts to its financial statements.

9. Segment and Geographic Information

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The Company is organized as, and operates in, one operating segment: the design, development and supply of power semiconductor products for computing, consumer electronics, communication and industrial applications. The chief operating decision-maker is the Chief Executive Officer. The financial information presented to the Company's Chief Executive Officer is on a consolidated basis, accompanied by information about revenue by customer and geographic region, for purposes of evaluating financial performance and allocating resources. The Company has one business segment, and there are no segment managers who are held accountable for operations, operating results and plans for products or components below the consolidated unit level. Accordingly, the Company reports as a single operating segment.

The Company sells its products primarily to distributors in the Asia Pacific region, who in turn sell these products to end customers. Because the Company's distributors sell their products to end customers which may have a global presence, revenue by geographical location is not necessarily representative of the geographical distribution of sales to end user markets.

The revenue by geographical location in the following tables is based on the country or region in which the products were shipped to:

	Three Months Ended December 31,		Six Months Ended December 31,	
	2019	2018	2019	2018
	(in thousands)		(in thousands)	
Hong Kong	\$ 97,244	\$ 87,180	\$ 190,346	\$ 178,771
China	16,571	24,760	33,083	45,157
South Korea	2,279	139	8,269	308
United States	898	1,967	1,999	3,940
Other countries	868	879	1,965	1,821
	<u>\$ 117,860</u>	<u>\$ 114,925</u>	<u>\$ 235,662</u>	<u>\$ 229,997</u>

The following is a summary of revenue by product type:

	Three Months Ended December 31,		Six Months Ended December 31,	
	2019	2018	2019	2018
	(in thousands)		(in thousands)	
Power discrete	\$ 101,491	\$ 93,294	\$ 202,032	\$ 185,549
Power IC	14,655	19,384	30,379	38,799
Packaging and testing services	1,714	2,247	3,251	5,649
	<u>\$ 117,860</u>	<u>\$ 114,925</u>	<u>\$ 235,662</u>	<u>\$ 229,997</u>

Long-lived assets, net consisting of property, plant and equipment and land use rights, by geographical area are as follows:

	December 31, 2019	June 30, 2019
	(in thousands)	
China	\$ 321,256	\$ 321,145
United States	93,976	87,817
Other Countries	823	775
	<u>\$ 416,055</u>	<u>\$ 409,737</u>

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10. Commitments and Contingencies

Purchase Commitments

As of December 31, 2019 and June 30, 2019, the Company had approximately \$52.0 million and \$59.5 million, respectively, of outstanding purchase commitments primarily for purchases of semiconductor raw materials, wafers, spare parts and packaging and testing services, and approximately \$24.3 million and \$33.8 million, respectively, of capital commitments for the purchase of property and equipment and EPC construction.

Other Commitments

See Note 5 and Note 6 of the Notes to the Condensed Consolidated Financial Statements contained in this Quarterly Report on Form 10-Q for descriptions of commitments including bank borrowings and leases.

Contingencies and Indemnities

The Company has in the past, and may from time to time in the future, become involved in legal proceedings arising from the normal course of business activities. The semiconductor industry is characterized by frequent claims and litigation, including claims regarding patent and other intellectual property rights as well as improper hiring practices. Irrespective of the validity of such claims, the Company could incur significant costs in the defense of such claims and suffer adverse effects on its operations.

The U.S. Department of Justice recently commenced an investigation into the Company's compliance with export control regulations relating to its business transactions with Huawei and its affiliates ("Huawei"), which were added to the "Entity List" maintained by Department of Commerce ("DOC") on May 16, 2019. The Company is cooperating fully with federal authorities in the investigation. The Company has maintained an export control compliance program and has been committed to comply fully with all applicable laws and regulations. In connection with this investigation, DOC requested the Company to suspend shipments of its products to Huawei, and the Company complied with such request. The Company is currently working with DOC to resolve this issue in order to resume shipments to Huawei. Given the case is in its early stages and still ongoing, the Company cannot estimate the reasonably possible loss or range of loss that may occur. Also, the Company is unable to predict the duration, scope, result or related costs of the investigation, although the Company expects to incur additional professional fees as a result of this matter. In addition, the Company is unable to predict, if any, further action that may be taken by the government in connection with the investigation, or what, if any, penalties, sanctions or remedial actions may be sought.

The Company is a party to a variety of agreements that it has contracted with various third parties. Pursuant to these agreements, the Company may be obligated to indemnify another party to such an agreement with respect to certain matters. Typically, these obligations arise in the context of contracts entered into by the Company, under which the Company customarily agrees to hold the other party harmless against losses arising from a breach of representations and covenants related to such matters as title to assets sold, certain intellectual property rights, specified environmental matters and certain income taxes. In these circumstances, payment by the Company is customarily conditioned on the other party making a claim pursuant to the procedures specified in the particular contract, which procedures typically allow the Company to challenge the other party's claim. Further, the Company's obligations under these agreements may be limited in time and/or amount, and in some instances, the Company may have recourse against third parties for certain payments made by it under these agreements. The Company has not historically paid or recorded any material indemnifications, and no accrual has been made at December 31, 2019 and June 30, 2019.

The Company has agreed to indemnify its directors and certain employees as permitted by law and pursuant to its Bye-laws, and has entered into indemnification agreements with its directors and executive officers. The Company has not recorded a liability associated with these indemnification arrangements, as it historically has not incurred any material costs associated with such indemnification obligations. Costs associated with such indemnification obligations may be mitigated by insurance coverage that the Company maintains. However, such insurance may not cover any, or may cover only a portion of, the amounts the Company may be required to pay. In addition, the Company may not be able to maintain such insurance coverage in the future.

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11. Subsequent Events

On January 20, 2020, the JV Company's expired two one-year loan agreements with China Merchant Bank and Chongqing LiangJiang New District China Merchants Group Limited Company in China were renewed. The JV Company borrowed RMB 80 million and 20 million (equivalent of \$14.6 million in total based on the currency exchange rate as of January 20, 2020). Interest payments are due monthly and quarterly with the entire principal due not later than January 21, 2021.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Except for the historical information contained herein, the matters addressed in this Item 2 constitute “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These forward looking statements include, but are not limited to, statements regarding future financial performance of the Company; the expected ramp up timeline of the 12-inch fab at the JV Company; the impact of government investigation and coronavirus on our financial performance; and other statements and information set forth under the heading “Factors Affecting Our Performance”. Such forward-looking statements are subject to a variety of risks and uncertainties, including those discussed below under the heading “Risk Factors” and elsewhere in this Quarterly Report on Form 10-Q, that could cause actual results to differ materially from those anticipated by the Company’s management. The Private Securities Litigation Reform Act of 1995 (the “Act”) provides certain “safe harbor” provisions for forward-looking statements. All forward-looking statements made in this Quarterly Report on Form 10-Q are made pursuant to the Act. The Company undertakes no obligation to publicly release the results of any revisions to its forward-looking statements that may be made to reflect events or circumstances after the date hereof or to reflect the occurrence of unexpected events. Unless the context otherwise requires, the words “AOS,” the “Company,” “we,” “us” and “our” refer to Alpha and Omega Semiconductor Limited and its subsidiaries.

This management’s discussion should be read in conjunction with the management’s discussion included in the Company’s Annual Report on Form 10-K for the fiscal year ended June 30, 2019, filed with the Securities and Exchange Commission on August 23, 2019.

Overview

We are a designer, developer and global supplier of a broad portfolio of power semiconductors. Our portfolio of power semiconductors includes approximately 2,100 products, and has grown significantly with the introduction of 200 new products in each of the fiscal years ended June 30, 2019 and 2018, respectively, and over 80 new products in fiscal year 2017. During the six months ended December 31, 2019, we introduced an additional 45 new products. Our teams of scientists and engineers have developed extensive intellectual properties and technical knowledge that encompass major aspects of power semiconductors, which we believe enables us to introduce and develop innovative products to address the increasingly complex power requirements of advanced electronics. We have an extensive patent portfolio that consists of 804 patents and 87 patent applications in the United States as of December 31, 2019. We also have a total of 833 foreign patents, which primarily were based on our research and development efforts through December 31, 2019. We differentiate ourselves by integrating our expertise in technology, design and advanced manufacturing and packaging to optimize product performance and cost. Our portfolio of products targets high-volume applications, including personal computers, flat panel TVs, LED lighting, smart phones, battery packs, quick chargers, home appliances, consumer and industrial motor controls and power supplies for TVs, computers, servers and telecommunications equipment.

Our business model leverages global resources, including research and development and manufacturing in the United States and Asia. Our sales and technical support teams are localized in several growing markets. We operate an 8-inch wafer fabrication facility located in Hillsboro, Oregon, or the Oregon fab, which is critical for us to accelerate proprietary technology development, new product introduction and improve our financial performance in the long run. To meet the market demand for the more mature high volume products, we also utilize the wafer manufacturing capacity of selected third party foundries. For assembly and test, we primarily rely upon our in-house facilities in China. In addition, we utilize subcontracting partners for industry standard packages. We believe our in-house packaging and testing capability provides us with a competitive advantage in proprietary packaging technology, product quality, cost and sales cycle time.

On March 29, 2016, we entered into a joint venture contract (the “JV Agreement”) with two investment funds owned by the Municipality of Chongqing (the “Chongqing Funds”), pursuant to which we and the Chongqing Funds formed a joint venture, (the “JV Company”), for the purpose of constructing a power semiconductor packaging, testing and wafer fabrication facility in the Liangjiang New Area of Chongqing, China (the “JV Transaction”). We currently own 51%, and the Chongqing Funds own 49%, of the equity interest in the JV Company. The JV Company has continued ramping up its production of assembly and testing during the six months ended December 31, 2019. In July 2019, we commenced limited mass production at the 12-inch wafer fabrication facility, and continued ramping up during the six months ended December 31, 2019. We expect a decrease in production during the quarter ending March 31, 2020 due to the coronavirus outbreak in China and extended Chinese New Year holiday. During the three and six months ended December 31, 2019, we recorded \$3.6 million and \$6.4 million in net loss attributable to noncontrolling interest in the JV Company. In the long-term, we expect the joint venture to provide much needed supply to us, enhance our market positions in China, and drive improvements in capital expenditures.

On September 5, 2017, we entered into a license agreement with STMicroelectronics International N.V. (“STMicro”), pursuant to which STMicro granted us a world-wide, royalty-free and fully-paid license to use its technologies to develop, market and distribute certain digital multi-phase controller products, which have been previously offered by STMicro. As of December 31, 2019, we recorded \$16.2 million of intangible assets on our condensed consolidated balance sheets. We will begin to amortize this intangible asset when the technology has met our qualification and is ready for its intended use in production.

During the second quarter of fiscal year of 2020, we introduced the AOZ8621UNI, a series of Transient Voltage Suppressor (TVS) for VBUS protection using the latest high-surge TVS platform. This new series is ideal for USB Type-C Power Delivery, including but not limited to laptops and smartphones. In addition, we introduced AOZ6682CI and AOZ6683CI which offer high efficiency over the full load range, allowing greener power conversion for a variety of consumer electronics applications such as LCD TVs, set-top boxes, high definition Blu-ray™ Disc Players and Networking terminals. During the first quarter of fiscal year of 2020, we introduced the “Source Down” in a DFN 5x6 package in combination with a 40V Shield-Gate Technology (AlphaSGT™). Our innovative flip-chip know-how achieves the Source Down capability and this packaging technology offers a very low package resistance and inductance. The AOZ66410 is ideally suited in telecommunications applications for secondary rectification, in half bridge configuration for BLDC motor applications, and battery management where paralleling is important. In addition, we introduced the TO-Leadless (TOLL) package in combination with a 60V and 100V Shield-Gate Technology providing the highest current capability in its voltage class. The TOLL package has the highest current capacity due to our innovative technology, which utilizes a clip to achieve the in-rush current. The TOLL packaging technology offers a very low package resistance and inductance due to the clip technology when compared to other TO-Leadless packages. This packaging technology uses a standard wire-bonding technology which enables improved EMI performance.

Factors affecting our performance

Our performance is affected by several key factors, including the following:

Costs of JV Company and digital power business: We are incurring an increase in operating expenses due to the additional costs associated with ramping up pre-production and production ramp-up activities of the JV Company, as well as the initial startup work to develop and establish our new digital power business, both of which have had a significant impact on our financial performance. The JV Company has continued ramping up its production of assembly and testing during the six months ended December 31, 2019. In July 2019, we commenced limited mass production at the 12-inch wafer fabrication facility, and continued ramping up during the six months ended December 31, 2019. We expect a decrease in production during the quarter ending March 31, 2020 due to the coronavirus outbreak in China and extended Chinese New Year holiday. The pre-production costs include costs relating to the installation of equipment; performance of the qualification process; increased demand for electrical power and other utilities; increased headcount as a result of hiring of additional personnel, staff and operators; and establishment of administrative and management functions and systems. Certain of such pre-production costs could be capitalized under U.S. GAAP accounting. However, the majority of such pre-production costs and all of the production ramp-up costs cannot be capitalized, therefore such costs have and may continue to have a negative impact on our profitability, although we do not expect to incur pre-production costs after July 2019 as the JV Company has commenced limited mass production.

In addition, we are developing our digital power business based on the STMicro license agreement, which will allow us to design and distribute a full suite of advanced low-voltage power IC products. We have incurred and expect to continue to incur additional costs, including costs relating to compensation of qualified engineers and technical staff and other research and development and management activities, as we continue to build this new business. In the short term, we will not be able to generate sufficient amount of revenue from either of these two business initiatives to offset the increased costs, which will likely negatively impact our results of operations.

Manufacturing costs: Our gross margin is affected by a number of factors including our manufacturing costs, utilization of our manufacturing facilities, the production mixtures of our sales, pricing of wafers from third party foundries and pricing of semiconductor raw materials. Capacity utilization affects our gross margin because we have certain fixed costs associated with our packaging and testing facilities at our Oregon fab and our Chongqing fabrication facility operated by the JV Company. We expect that in the long term our JV Company will reduce our cost of manufacturing. If we are unable to utilize our manufacturing facilities at a desired level, our gross margin may be adversely affected. In addition, from time to time, we may experience wafer capacity constraints, particularly at third party foundries, that may prevent us from meeting fully the demand of our customers. While we can mitigate such constraints by increasing and re-allocating capacity at our own fab, we may not be able to do so quickly or at sufficient level, which could adversely affect our financial conditions and results of operations.

Erosion and fluctuation of average selling price: Erosion of average selling prices of established products is typical in our industry. Consistent with this historical trend, we expect our average selling prices of existing products to decline in the future.

However, in the normal course of business, we seek to offset the effect of declining average selling price by introducing new and higher value products, expanding existing products for new applications and new customers and reducing the manufacturing cost of existing products. These strategies may cause the average selling price of our products to fluctuate significantly from time to time, thereby affecting our financial performance and profitability.

The global, regional economic and PC market conditions: Because our products primarily serve consumer electronic applications, a deterioration of the global and regional economic conditions could materially affect our revenue and results of operations. For example, because a significant amount of our revenue is derived from sales of products in the personal computing ("PC") markets, such as notebooks, motherboards and notebook battery packs, a significant decline or downturn in the PC market can have a material adverse effect on our revenue and results of operations. Our revenue from the PC market accounted for approximately 41.3% and 48.5% of our total revenue for the three months ended December 31, 2019 and 2018, respectively and 40.2% and 46.1% of our total revenue for the six months ended December 31, 2019 and 2018, respectively. The PC markets have experienced a modest global decline in the recent year due to continued growth of demand in tablets and smart phones, worldwide economic conditions and the industry inventory correction which had and may continue to have a material impact on the demand for our products, which may have negative impact on our revenue, factory utilization, gross margin, our ability to resell excess inventory, and other performance measures. We have executed and continue to execute strategies to diversify our product portfolio, penetrate other market segments, including the consumer, communications and industrial markets, and improve gross margins and profit by implementing cost control measures. While making efforts to reduce our reliance on the computing market, we continue to support our computing business and capitalize on the opportunities in this market with a more focused and competitive PC product strategy to gain market share.

Product introductions and customers' product requirements: Our success depends on our ability to introduce products on a timely basis that meet or are compatible with our customers' specifications and performance requirements. Both factors, timeliness of product introductions and conformance to customers' requirements, are equally important in securing design wins with our customers. As we accelerate the development of new technology platforms, we expect to increase the pace at which we introduce new products and seek and acquire design wins. Our failure to introduce new products on a timely basis that meet customers' specifications and performance requirements, particularly those products with major OEM customers, and our inability to continue to expand our serviceable markets, could adversely affect our financial performance, including loss of market share. We believe that the JV Transaction will increase and diversify our customer base, particularly in China, in the long term. The JV Company has continued ramping up its production of assembly and testing during the six months ended December 31, 2019. In July 2019, we commenced limited mass production at the 12-inch wafer fabrication facility, and continued ramping up during the six months ended December 31, 2019. We expect a decrease in production during the quarter ending March 31, 2020 due to the coronavirus outbreak in China and extended Chinese New Year holiday. Even if we are able to ramp up the operation of the JV Company timely, we may not be successful in acquiring a sufficient number of new customers to offset additional costs due to various factors, including but are not limited to, competition from other semiconductor companies in the region, our lack of history and prior relationships with customers as a new entrant, difficulties in executing our joint venture strategies, lack of control over our operations and the general economic conditions in Chongqing and China.

Distributor ordering patterns, customer demand and seasonality: Our distributors place purchase orders with us based on their forecasts of end customer demand, and this demand may vary significantly depending on the sales outlook and market and economic conditions of end customers. Because these forecasts may not be accurate, channel inventory held at our distributors may fluctuate significantly, which in turn may prompt distributors to make significant adjustments to their purchase orders placed with us. As a result, our revenue and operating results may fluctuate significantly from quarter to quarter. In addition, because our products are used in consumer electronics products, our revenue is subject to seasonality. Our sales seasonality is affected by numerous factors, including global and regional economic conditions as well as the PC market conditions, revenue generated from new products, changes in distributor ordering patterns in response to channel inventory adjustments and end customer demand for our products and fluctuations in consumer purchase patterns prior to major holiday seasons. In recent periods, broad fluctuations in the semiconductor markets and the global and regional economic conditions, in particular the decline of the PC market conditions, have had a more significant impact on our results of operations than seasonality. Furthermore, our revenue may be impacted by the level of demand from our major customers due to factors outside of our control. If these major customers experience significant decline in the demand of their products, encounter difficulties or defects in their products, or otherwise fail to execute their sales and marketing strategies successfully, it may adversely affect our revenue and results of operations.

Regulatory Development: The U.S. Department of Justice recently commenced an investigation into the Company's compliance with export control regulations relating to certain business transactions with Huawei and its affiliates ("Huawei"), which were added to the "Entity List" by the Department of Commerce ("DOC") in May 2019. In connection with this investigation, DOC has requested the Company to suspend shipments of its products to Huawei, and the Company complied with such request. The Company is currently working with DOC to resolve this issue in order to resume shipment to Huawei. Accordingly, we expect the financial performance will be negatively impacted by the Huawei shipment interruption until such

time when DOC permits us to continue shipment to Huawei. There is no guarantee that DOC will agree to permit us to resume shipment to Huawei on a timely basis, or at all, and we may not be able to acquire new or additional customers or demand to offset such loss of shipment. Our failure to do so will negatively impact our revenue and profitability. Furthermore, the Company is expected to incur significant costs and expenses, including legal fees, in connection with the government investigation, which may reduce our profitability and margin. See “Risk Factor-*The current government investigation and evolving export control regulations may adversely affect our financial performance and business operations*”.

Principal line items of statements of operations

The following describes the principal line items set forth in our condensed consolidated statements of operations:

Revenue

We generate revenue primarily from the sale of power semiconductors, consisting of power discretes and power ICs. Historically, a majority of our revenue has been derived from power discrete products. Because our products typically have three-year to five-year life cycles, the rate of new product introduction is an important driver of revenue growth over time. We believe that expanding the breadth of our product portfolio is important to our business prospects, because it provides us with an opportunity to increase our total bill-of-materials within an electronic system and to address the power requirements of additional electronic systems. In addition, a small percentage of our total revenue is generated by providing packaging and testing services to third parties through one of our subsidiaries.

Our product revenue is reported net of the effect of the estimated stock rotation returns and price adjustments that we expect to provide to our distributors. Stock rotation returns are governed by contract and are limited to a specified percentage of the monetary value of products purchased by the distributor during a specified period. At our discretion or upon our direct negotiations with the original design manufacturers ("ODMs") or original equipment manufacturers ("OEMs"), we may elect to grant special pricing that is below the prices at which we sold our products to the distributors. In these situations, we will grant price adjustments to the distributors reflecting such special pricing. We estimate the price adjustments for inventory at the distributors based on factors such as distributor inventory levels, pre-approved future distributor selling prices, distributor margins and demand for our products.

Cost of goods sold

Our cost of goods sold primarily consists of costs associated with semiconductor wafers, packaging and testing, personnel, including share-based compensation expense, overhead attributable to manufacturing, operations and procurement, and costs associated with yield improvements, capacity utilization, warranty and inventory reserves. As the volume of sales increases, we expect cost of goods sold to increase. We implemented a process to improve our factory capacity utilization rates by transferring more wafer production to our Oregon fab and reducing our reliance on outside foundries. While our utilization rates cannot be immune to the market conditions, our goal is to make them less vulnerable to market fluctuations. We believe our market diversification strategy and product growth will drive higher volume of manufacturing which will improve our factory utilization rates and gross margin in the long run.

Operating expenses

Our operating expenses consist of research and development, selling, general and administrative expenses. We expect our operating expenses as a percentage of revenue to fluctuate from period to period as we continue to exercise cost control measures in response to the declining PC market as well as align our operating expenses to the revenue level.

Research and development expenses. Our research and development expenses consist primarily of salaries, bonuses, benefits, share-based compensation expense, expenses associated with new product prototypes, travel expenses, fees for engineering services provided by outside contractors and consultants, amortization of software and design tools, depreciation of equipment and overhead costs. We continue to invest in developing new technologies and products utilizing our own fabrication and packaging facilities as it is critical to our long-term success. We also evaluate appropriate investment levels and stay focused on new product introductions to improve our competitiveness. We expect that our research and development expenses will fluctuate from time to time.

Selling, general and administrative expenses. Our selling, general and administrative expenses consist primarily of salaries, bonuses, benefits, share-based compensation expense, product promotion costs, occupancy costs, travel expenses, expenses

related to sales and marketing activities, amortization of software, depreciation of equipment, maintenance costs and other expenses for general and administrative functions as well as costs for outside professional services, including legal, audit and accounting services. We expect our selling, general and administrative expenses to fluctuate in the near future as we continue to exercise cost control measures as well as less pre-production costs due to the commencement of mass production in our JV Company.

Income tax expense

We are subject to income taxes in various jurisdictions. Significant judgment and estimates are required in determining our worldwide income tax expense. The calculation of tax liabilities involves dealing with uncertainties in the application of complex tax regulations of different jurisdictions globally. We establish accruals for potential liabilities and contingencies based on a more likely than not threshold to the recognition and de-recognition of uncertain tax positions. If the recognition threshold is met, the applicable accounting guidance permits us to recognize a tax benefit measured at the largest amount of tax benefit that is more likely than not to be realized upon settlement with a taxing authority. If the actual tax outcome of such exposures is different from the amounts that were initially recorded, the differences will impact the income tax and deferred tax provisions in the period in which such determination is made. Changes in the location of taxable income (loss) could result in significant changes in our income tax expense.

We record a valuation allowance against deferred tax assets if it is more likely than not that a portion of the deferred tax assets will not be realized, based on historical profitability and our estimate of future taxable income in a particular jurisdiction. Our judgments regarding future taxable income may change due to changes in market conditions, changes in tax laws, tax planning strategies or other factors. If our assumptions and consequently our estimates change in the future, the deferred tax assets may increase or decrease, resulting in corresponding changes in income tax expense. Our effective tax rate is highly dependent upon the geographic distribution of our worldwide profits or losses, the tax laws and regulations in each geographical region where we have operations, the availability of tax credits and carry-forwards and the effectiveness of our tax planning strategies.

Results of Operations

The following tables set forth statements of operations, also expressed as a percentage of revenue, for the three and six months ended December 31, 2019 and 2018. Our historical results of operations are not necessarily indicative of the results for any future period.

	Three Months Ended December 31,				Six Months Ended December 31,			
	2019	2018	2019	2018	2019	2018	2019	2018
	(in thousands)		(% of revenue)		(in thousands)		(% of revenue)	
Revenue	\$ 117,860	\$ 114,925	100.0 %	100.0 %	\$ 235,662	\$ 229,997	100.0 %	100.0 %
Cost of goods sold	93,454	85,423	79.3 %	74.3 %	184,324	167,884	78.2 %	73.0 %
Gross profit	24,406	29,502	20.7 %	25.7 %	51,338	62,113	21.8 %	27.0 %
Operating expenses								
Research and development	12,147	12,600	10.3 %	11.0 %	24,515	23,984	10.4 %	10.4 %
Selling, general and administrative	15,629	20,104	13.3 %	17.5 %	30,814	40,456	13.1 %	17.6 %
Total operating expenses	27,776	32,704	23.6 %	28.5 %	55,329	64,440	23.5 %	28.0 %
Operating loss	(3,370)	(3,202)	(2.9)%	(2.8)%	(3,991)	(2,327)	(1.7)%	(1.0)%
Interest expense and other income (loss), net	(635)	(1,632)	(0.5)%	(1.4)%	(1,462)	(2,860)	(0.6)%	(1.3)%
Net loss before income taxes	(4,005)	(4,834)	(3.4)%	(4.2)%	(5,453)	(5,187)	(2.3)%	(2.3)%
Income tax expense	568	701	0.5 %	0.6 %	978	1,261	0.4 %	0.5 %
Net loss including noncontrolling interest	(4,573)	(5,535)	(3.9)%	(4.8)%	(6,431)	(6,448)	(2.7)%	(2.8)%
Net loss attributable to noncontrolling interest	(3,568)	(3,990)	(3.0)%	(3.5)%	(6,435)	(7,319)	(2.7)%	(3.2)%
Net income (loss) attributable to Alpha and Omega Semiconductor Limited	\$ (1,005)	\$ (1,545)	(0.9)%	(1.3)%	\$ 4	\$ 871	— %	0.4 %

Share-based compensation expense was allocated as follows:

	Three Months Ended December 31,				Six Months Ended December 31,			
	2019	2018	2019	2018	2019	2018	2019	2018
	(in thousands)		(% of revenue)		(in thousands)		(% of revenue)	
Cost of goods sold	\$ 404	\$ 541	0.3%	0.5%	\$ 840	\$ 1,038	0.4%	0.5%
Research and development	472	742	0.4%	0.6%	996	1,374	0.4%	0.6%
Selling, general and administrative	1,611	3,135	1.4%	2.7%	3,020	5,135	1.3%	2.2%
Total	\$ 2,487	\$ 4,418	2.1%	3.8%	\$ 4,856	\$ 7,547	2.1%	3.3%

Six Months Ended December 31, 2019 and 2018

Revenue

The following is a summary of revenue by product type:

	Three Months Ended December 31,				Six Months Ended December 31,			
	2019	2018	Change		2019	2018	Change	
	(in thousands)		(in thousands)	(in percentage)	(in thousands)		(in thousands)	(in percentage)
Power discrete	\$ 101,491	\$ 93,294	\$ 8,197	8.8 %	\$ 202,032	\$ 185,549	\$ 16,483	8.9 %
Power IC	14,655	19,384	(4,729)	(24.4)%	30,379	38,799	(8,420)	(21.7)%
Packaging and testing services	1,714	2,247	(533)	(23.7)%	3,251	5,649	(2,398)	(42.4)%
	\$ 117,860	\$ 114,925	\$ 2,935	2.6 %	\$ 235,662	\$ 229,997	\$ 5,665	2.5 %

Total revenue was \$117.9 million for the three months ended December 31, 2019, an increase of \$2.9 million, or 2.6%, as compared to \$114.9 million for the same quarter last year. The increase was primarily due to an increase of \$8.2 million in sales of power discrete, partially offset by a decrease of \$4.7 million in sales of power IC products. The net increase in power discrete and power IC product sales was primarily due to a 7.6% increase in average selling price as compared to the same quarter last year due to a shift in product mix, partially offset by a 4.1% decrease in unit shipments. The decrease in revenue of packaging and testing services for the three months ended December 31, 2019 as compared to the same quarter last year was primarily due to decreased capacity to provide these services externally.

Total revenue was \$235.7 million for the six months ended December 31, 2019, an increase of \$5.7 million, or 2.5%, as compared to \$230.0 million for the same period last year. The increase was primarily due to an increase of \$16.5 million in sales of power discrete, partially offset by a decrease of \$8.4 million in sales of power IC sales products. The net increase in power discrete and power IC product sales was primarily due to a 14.1% increase in average selling price as compared to the same period of last year mainly due to a shift in product mix, partially offset by a 9.1% decrease in unit shipments. The decrease in revenue of packaging and testing services for the six months ended December 31, 2019 as compared to the same period last year was primarily due to decreased capacity to provide these services externally.

Cost of goods sold and gross profit

	Three Months Ended December 31,				Six Months Ended December 31,			
	2019	2018	Change		2019	2018	Change	
	(in thousands)		(in thousands)	(in percentage)	(in thousands)		(in thousands)	(in percentage)
Cost of goods sold	\$ 93,454	\$ 85,423	\$ 8,031	9.4 %	\$ 184,324	\$ 167,884	\$ 16,440	9.8 %
Percentage of revenue	79.3%	74.3%			78.2%	73.0%		
Gross profit	\$ 24,406	\$ 29,502	\$ (5,096)	(17.3)%	\$ 51,338	\$ 62,113	\$ (10,775)	(17.3)%
Percentage of revenue	20.7%	25.7%			21.8%	27.0%		

Cost of goods sold was \$93.5 million for the three months ended December 31, 2019, an increase of \$8.0 million, or 9.4%, as compared to \$85.4 million for the same quarter last year. The increase was primarily due to the limited mass production in our Chongqing joint venture and the 2.6% increase in revenue. Gross margin decreased by 5.0 percentage points to 20.7% for the three months ended December 31, 2019 as compared to 25.7% for the same quarter last year. The decrease in gross margin was primarily as a result of low capacity utilization due to the commencement of limited mass production in our Chongqing joint venture during the three months ended December 31, 2019.

Cost of goods sold was \$184.3 million for the six months ended December 31, 2019, an increase of \$16.4 million, or 9.8%, as compared to \$167.9 million for the same period last year. The increase was primarily due to limited mass production in our Chongqing joint venture and the 2.5% increase of revenue. Gross margin decreased by 5.2 percentage points to 21.8% for the six months ended December 31, 2019 as compared to 27.0% for the same period last year. The decrease in gross margin was primarily as of result of low capacity utilization due to the commencement of limited mass production in our Chongqing joint venture during the six months ended December 31, 2019.

Research and development expenses

	Three Months Ended December 31,				Six Months Ended December 31,			
	2019	2018	Change		2019	2018	Change	
	(in thousands)		(in thousands)	(in percentage)	(in thousands)		(in thousands)	(in percentage)
Research and development	\$ 12,147	\$ 12,600	\$ (453)	(3.6)%	\$ 24,515	\$ 23,984	\$ 531	2.2%

Research and development expenses were \$12.1 million for the three months ended December 31, 2019, a decrease of \$0.5 million, or 3.6%, as compared to \$12.6 million for the same quarter last year. The decrease was primarily attributable to a \$0.3 million decrease in employee compensation and benefit expense mainly due to lower bonus accrual, a \$0.3 million decrease in product prototyping engineering expense as a result of decreased engineering activities, and a \$0.3 million decrease in share-based compensation expense due to an increase in stock awards canceled during the September 2019 quarter, partially offset by a \$0.2 million increase in professional services expense as a result of higher consulting fees, and a \$0.2 million increase in depreciation expenses in the current quarter.

Research and development expenses were \$24.5 million for the six months ended December 31, 2019, an increase of \$0.5 million, or 2.2%, as compared to \$24.0 million for the same period last year. The increase was primarily attributable to a \$0.5 million increase in professional services expense as a result of higher consulting fees, a \$0.5 million increase in depreciation expenses, and a \$0.2 million increase in product prototyping engineering expense as a result of increased engineering activities, partially offset by a \$0.4 million decrease in employee compensation and benefit expense mainly due to lower bonus accrual, and a \$0.4 million decrease in share-based compensation expense due to an increase in stock awards canceled during the current period.

Selling, general and administrative expenses

	Three Months Ended December 31,				Six Months Ended December 31,			
	2019	2018	Change		2019	2018	Change	
	(in thousands)	(in thousands)	(in thousands)	(in percentage)	(in thousands)	(in thousands)	(in thousands)	(in percentage)
Selling, general and administrative	\$ 15,629	\$ 20,104	\$ (4,475)	(22.3)%	\$ 30,814	\$ 40,456	\$ (9,642)	(23.8)%

Selling, general and administrative expenses were \$15.6 million for the three months ended December 31, 2019, a decrease of \$4.5 million, or 22.3%, as compared to \$20.1 million for the same quarter last year. The decrease was primarily due to the commencement of limited mass production at the 12-inch fab facility and continued ramping up the production of assembly and testing during the current quarter in the JV Company, resulting in significantly lower pre-production costs including a \$3.2 million decrease in employee compensation and benefits expense and other costs. In addition, there was a \$1.5 million decrease in share-based compensation expense due to an increase in stock awards canceled. The net decrease was partially offset by a \$0.2 million increase in depreciation expenses.

Selling, general and administrative expenses were \$30.8 million for the six months ended December 31, 2019, a decrease of \$9.6 million, or 23.8%, as compared to \$40.5 million for the same period last year. The decrease was primarily due to the commencement of limited mass production at the 12-inch fab facility and continued ramping up the production of assembly and testing during the current period in the JV Company, resulting in significantly lower pre-production costs including a \$7.8 million decrease in employee compensation and benefits expense and other costs. In addition, there was a \$2.1 million decrease in share-based compensation expense due to an increase in stock awards canceled. The net decrease was partially offset by a \$0.6 million increase in depreciation expenses.

Interest expense and other income (loss), net

	Three Months Ended December 31,				Nine Months Ended December 31,			
	2019	2018	Change		2019	2018	Change	
	(in thousands)	(in thousands)	(in thousands)	(in percentage)	(in thousands)	(in thousands)	(in thousands)	(in percentage)
Interest expense and other income (loss), net	\$ (635)	\$ (1,632)	\$ 997	(61.1)%	\$ (1,462)	\$ (2,860)	\$ 1,398	(48.9)%

Interest expense was primarily related to bank borrowings. The decrease in interest expenses during the three and six months ended December 31, 2019 as compared to the same period last year was primarily due to an interest refund from the Chinese government in the JV Company, partially offset by higher interest expense as a result of an increase in bank borrowings.

Interest income and others were primarily related to interest earned from cash and cash equivalents, as well as foreign exchange gains (losses). The increase in interest income and others, net during the three months ended December 31, 2019 as compared to the same quarter last year was primarily due to lower foreign currency exchange losses as a result of the appreciation of USD against RMB. The decrease in interest income and others, net during the six months ended December 31, 2019 as compared to the same period last year was primarily due to higher foreign currency exchange losses as a result of the depreciation of USD against RMB.

Income tax expense

	Three Months Ended December 31,				Six Months Ended December 31,			
	2019	2018	Change		2019	2018	Change	
	(in thousands)	(in thousands)	(in thousands)	(in percentage)	(in thousands)	(in thousands)	(in thousands)	(in percentage)
Income tax expense	\$ 568	\$ 701	\$ (133)	(19.0)%	\$ 978	\$ 1,261	\$ (283)	(22.4)%

For the three months ended December 31, 2019, the Company recognized income tax expense of approximately \$0.6 million, compared to \$0.7 million for the three months ended December 31, 2018. Excluding the discrete income tax items, the estimated effective tax rate for the three months ended December 31, 2019 and 2018 was (13.8)%. The changes in the tax expense between the periods resulted primarily from changes in the mix of earnings in various geographic jurisdictions between the current year and the same period of last year.

For the six months ended December 31, 2019, the Company recognized an income tax expense of approximately \$1.0 million, which included a discrete tax expense of \$0.03 million. For the six months ended December 31, 2018, the Company recognized an income tax expense of approximately \$1.3 million, which included a discrete tax expense of \$0.03 million. Excluding the discrete income tax items, the estimated effective tax rate for the six months ended December 31, 2019 was (17.4)% compared to (23.7)% for the six months ended December 31, 2018. The changes in the effective tax rate and tax expense between the periods resulted primarily from changes in the mix of earnings in various geographic jurisdictions between the current year and the same period of last year.

Liquidity and Capital Resources

Our principal need for liquidity and capital resources is to maintain sufficient working capital to support our operations and to invest adequate capital expenditures to grow our business. To date, we finance our operations and capital expenditures primarily through funds generated from operations and borrowings under our term loan, financing lease and other debt agreements.

In October 2019, the Company's subsidiary in China entered into a line of credit facility with Bank of Communications Limited in China. This line of credit matures on February 14, 2021 and is based on the China Base Rate multiplied by 1.05, or 4.99% on October 31, 2019. The purpose of the credit facility was to provide short-term borrowings. The Company could borrow up to approximately RMB 60.0 million or \$8.5 million based on the currency exchange rate between the RMB and the U.S. Dollar on October 31, 2019. As of December 31, 2019, there was no outstanding balance under the loan.

On September 23, 2019, the JV Company entered into a short term loan agreement with China Everbright bank in China. The JV Company can borrow up to Chinese Renminbi (RMB) 50.0 million or \$7.1 million based on the currency exchange rate between RMB and U.S. Dollar on September 23, 2019 at varying interest rates, with either RMB or USD. Interest payments with the entire principal are due no later than 90 days from each borrowing date. In October and December 2019, the JV Company borrowed \$1.6 million and \$4.7 million under this loan, respectively. Interest payments with these entire principals are due no later than January 13, 2020 and February 11, 2020. As of December 31, 2019, the outstanding balance under the loan was \$6.3 million.

On March 21, 2019, the JV Company entered into a one-year loan agreement with China Everbright Bank in China to provide a loan for RMB 20 million, or \$3.0 million based on the currency exchange rate between RMB and U.S. Dollar on March 31, 2019 at a fixed interest rate of 5.44% per annum. Interest payments are due monthly with the entire principal due on March 21, 2020. As of December 31, 2019, the outstanding balance under the loan was 20 million RMB (equivalent of \$2.9 million based on the currency exchange rate as of December 31, 2019).

On November 29 and December 4, 2018, the JV Company entered into two one-year loan agreements with China Merchant Bank and Chongqing LiangJiang New District China Merchants Group Limited Company in China to provide loans for RMB 80 million and 20 million, respectively, or \$14.5 million in total based on the currency exchange rate between RMB and U.S. Dollar on December 31, 2018, at varying interest rates. In December 2019, the JV Company repaid these borrowings on their maturity dates. On January 20, 2020, the JV Company renewed the loan agreements. Interest payments are due monthly and quarterly with the entire principal due not later than January 21, 2021. As of December 31, 2019, there were no outstanding balances under the loans.

On November 16, 2018, the Company's subsidiary in China entered into a line of credit facility with Industrial and Commercial Bank of China, which expired on September 30, 2019. The purpose of the credit facility was to provide short-term borrowings. The Company could borrow up to approximately RMB 72.0 million or \$10.3 million based on currency exchange

rate between RMB and U.S. Dollar on November 16, 2018. In October 2019, this line of credit was renewed with a maturity date of September 30, 2020. As of December 31, 2019, there was no outstanding balance under the line of credit.

On August 9, 2019, one of the Company's wholly-owned subsidiaries ("the "Borrower") entered into a factoring agreement with the Hongkong and Shanghai Banking Corporation Limited ("HSBC"), whereby the Borrower assigns certain of its accounts receivable with recourse. This factoring agreement allows the Borrower to borrow up to 70% of the net amount of its eligible accounts receivable of the Borrower with a maximum amount of \$30.0 million. The interest rate is based on one month LIBOR plus 1.75% per annum. This agreement, with certain financial covenants required, has no expiration date. The Company is the guarantor for this agreement. The Company is accounting for this transaction as a secured borrowing under the Transfers and Servicing of Financial Assets guidance. In addition, any cash held in the restricted bank account controlled by HSBC has a legal right of offset against the borrowing. The Borrower was in compliance with these covenants as of December 31, 2019. In December 2019, \$2.0 million of borrowing in August was repaid. As of December 31, 2019, there was 0 outstanding balance and the Company had unused credit of approximately \$30.0 million.

On May 9, 2018 (the "Effective Date"), the JV Company entered into a lease finance agreement and a security agreement (the "Agreements") with YinHai Leasing Company and China Import/Export Bank (the "Lenders"). Pursuant to the Agreements, the Lenders agree to provide an aggregate of Chinese Renminbi (RMB) 400.0 million, or \$62.8 million based on the currency exchange rate between the RMB and the U.S. Dollar on the Effective Date, of financing to the JV Company (the "Lease Financing"). The interest under the Lease Financing is accrued based on the China Base Rate multiplied by 1.15, or 5.4625% on the Effective Date. Under the Agreements, at the end of the five-year lease term, the Lenders agree to sell such equipment back to the JV Company for a nominal amount (RMB 1). The JV Company's obligations under the Lease Financing are secured by the land and building owned by the JV Company (the "Collateral"). As of December 31, 2019, the outstanding balance of the Lease Financing was approximately \$50.3 million based on the currency exchange rate as of December 31, 2019.

In December 2019, the JV Company entered into a loan agreement with China Development Bank in the amount of \$24.0 million. The obligation under the loan agreement is secured by certain assets of the JV Company. Beginning December 18, 2020, the JV Company will make consecutive semi-annual payments of principal until December 8, 2024. The interest is accrued based on the LIBOR rate plus 280BP. The interest is required to be paid March 21 and September 21 each year. As of December 31, 2019, the outstanding balance of the loan was \$24.0 million.

On March 12, 2019, the JV Company entered into a loan agreement with The Export-Import Bank of China in the aggregate principal amount of 200 million RMB (approximately \$29.8 million based on currency exchange rate between RMB and U.S. Dollar on March 31, 2019). The loan will mature on February 20, 2025. The JV Company drew down 190 million RMB and 10 million RMB in March 2019 and December 2019, respectively. The loan withdraw window will expire on February 28, 2020. The interest is accrued based on the China Base Rate multiplied by 1.1, or 5.39%. The loan requires quarterly interest payments. The principal payments are required to be paid every 6 months over the term of loan commencing in October 2019. This loan is secured by the buildings and certain equipment owned by the JV Company. As a condition of the loan arrangements, 14 million RMB (approximately \$2.0 million) of cash is held as restricted cash by the JV Company as a compensating balance at the JV Company's bank until the principal is paid. In December 2019, 3.0 million RMB was repaid. As of December 31, 2019, the outstanding balance of the loan was 197 million RMB (equivalent of \$28.2 million based on the currency exchange rate as of December 31, 2019).

On May 1, 2018, Jireh entered into a credit agreement with the Bank that provided a term loan in an amount of \$17.8 million. The obligation under the credit agreement is secured by certain assets of Jireh and guaranteed by the Company. The loan accrues interest based on a fixed rate of 5.04% based on the outstanding balance of the loan. The credit agreement contains customary restrictive covenants and includes certain financial covenants that require us to maintain, on a consolidated basis, specified financial ratios. We were in compliance with these covenants as of December 31, 2019. As of December 31, 2019, the outstanding balance of the term loan was \$16.4 million.

On August 15, 2017, our Oregon subsidiary, Jireh Semiconductor Incorporated ("Jireh"), entered into a credit agreement with a financial institution (the "Bank") that provides a term loan in an amount up to \$30.0 million for the purpose of purchasing certain equipment for our fabrication facility located in Oregon. The obligation under the credit agreement is secured by substantially all assets of Jireh and guaranteed by the Company. The credit agreement has a five-year term and matures on August 15, 2022. In January 2018 and July 2018, Jireh drew down the loan in the amount of \$13.2 million and \$16.7 million, respectively. The loan accrues interest based on an adjusted London Interbank Offered Rate ("LIBOR") as defined in the credit agreement, plus a specified applicable margin in the range of 1.75% to 2.25%, based on the outstanding balance of the loan. The credit agreement contains customary restrictive covenants, including certain financial covenants that require the Company to maintain, on a consolidated basis, specified financial ratios and fixed charge coverage ratio. We were

in compliance with these covenants as of December 31, 2019. As of December 31, 2019, the outstanding balance of the term loan was \$20.5 million.

In September 2017, the Board of Directors approved a repurchase program (the “Repurchase Program”) that allowed us to repurchase our common shares from the open market pursuant to a pre-established Rule 10b5-1 trading plan or through privately negotiated transactions up to an aggregate of \$30.0 million. The amount and timing of any repurchases under the Repurchase Program depend on a number of factors, including but not limited to, the trading price, volume, availability of our common shares and the amount of available cash reserve. Shares repurchased under this program are accounted for as treasury shares and the total cost of shares repurchased is recorded as a reduction of shareholders' equity. There is no guarantee that such repurchases under the Repurchase Program will enhance the value of our shares.

We did not repurchase any shares during the six months ended December 31, 2019. Since the inception of the prior repurchase program in 2010, we repurchased an aggregate of 6,784,648 shares from the open market for a total cost of \$67.3 million, at an average price of \$9.92 per share, excluding fees and related expenses. As of December 31, 2019, of the 6,784,648 repurchased shares, 140,328 shares with a weighted average repurchase price of \$10.39 per share, were reissued at an average price of \$5.50 per share pursuant to option exercises and vested restricted share units. We had \$13.4 million remained available under the Repurchase Program as of December 31, 2019.

We believe that our current cash and cash equivalents and cash flows from operations will be sufficient to meet our anticipated cash needs, including working capital and capital expenditures, for at least the next twelve months. In the long-term, we may require additional capital due to changing business conditions or other future developments, including any investments or acquisitions we may decide to pursue. If our cash is insufficient to meet our needs, we may seek to raise capital through equity or debt financing. The sale of additional equity securities could result in dilution to our shareholders. The incurrence of indebtedness would result in increased debt service obligations and may include operating and financial covenants that would restrict our operations. We cannot be certain that any financing will be available in the amounts we need or on terms acceptable to us, if at all.

Cash and cash equivalents

As of December 31, 2019 and June 30, 2019, we had \$111.5 million and \$124.3 million of cash, cash equivalents and restricted cash, respectively. Our cash, cash equivalents and restricted cash primarily consist of cash on hand, restricted cash, and short-term bank deposits with original maturities of three months or less. Of the \$111.5 million and \$124.3 million cash, cash equivalents and restricted cash, \$93.5 million and \$68.2 million, respectively, are deposited with financial institutions outside the United States.

The following table shows our cash flows from operating, investing and financing activities for the periods indicated:

	Six Months Ended December 31,	
	2019	2018
	(in thousands)	
Net cash provided by operating activities	\$ 7,711	\$ 31,081
Net cash used in investing activities	(31,167)	(66,327)
Net cash provided by financing activities	10,974	52,040
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(347)	(1,631)
Net increase (decrease) in cash, cash equivalents and restricted cash	\$ (12,829)	\$ 15,163

Cash flows from operating activities

Net cash used in operating activities of \$7.7 million for the six months ended December 31, 2019 resulted primarily from net loss of \$6.4 million and net changes in assets and liabilities of \$12.4 million, partially offset by non-cash expenses of \$26.6 million. The non-cash expenses of \$26.6 million primarily included \$21.8 million of depreciation and amortization expenses and \$4.9 million of share-based compensation expense. The net changes in assets and liabilities of \$12.4 million were primarily due to a \$4.9 million increase in inventories, a \$9.6 million increase in accounts receivable from timing of billings and collection of payments, and a \$5.7 million decrease in accounts payable due to timing of payment, partially offset by a \$6.3 million increase in accrued and other liabilities, a \$0.9 million decrease in other current and long term assets due to decrease in advance payments to vendors, and a \$0.5 million increase in income taxes payable.

Net cash provided by operating activities of \$31.1 million for the six months ended December 31, 2018 resulted primarily from net loss of \$6.4 million and non-cash expenses of \$23.8 million as well as net changes in assets and liabilities of \$13.7 million. The non-cash expenses of \$23.8 million primarily included a \$16.1 million of depreciation and amortization expenses and a \$7.5 million of share-based compensation expense. The net changes in assets and liabilities of \$13.7 million were primarily due to a \$9.9 million increase in accounts payable due to timing of payment and \$18.0 million increase in accrued and other liabilities, partially offset by a \$12.8 million increase in inventories, a \$0.7 million increase in other current and long term assets due to increase in advance payments to vendors, a \$0.3 million increase in accounts receivable from timing of billings and collection of payments, and a \$0.4 million decrease in income taxes payable.

Cash flows from investing activities

Net cash used in investing activities of \$31.2 million for the six months ended December 31, 2019 was primarily attributable to \$32.4 million purchases of property and equipment, including \$12.1 million purchased by the JV Company, partially offset by \$1.3 million government grant related to equipment in the JV Company.

Net cash used in investing activities of \$66.3 million for the six months ended December 31, 2018 was primarily attributable to \$65.9 million purchases of property and equipment, including \$42.7 million purchased by the JV Company and \$0.4 million in purchase of intangible asset.

Cash flows from financing activities

Net cash provided by financing activities of \$11.0 million for the six months ended December 31, 2019 was primarily attributable to \$33.7 million proceeds from borrowings and \$1.7 million of proceeds from ESPP, partially offset by \$20.9 million in repayments of borrowings, \$3.4 million in payment of finance lease obligations, and \$0.2 million in common shares acquired to settle withholding tax related to vesting of restricted stock units.

Net cash provided by financing activities of \$52.0 million for the six months ended December 31, 2018 was primarily attributable to \$24.0 million proceeds invested by the noncontrolling interest in the JV Company, \$36.2 million proceeds from borrowings, and \$1.3 million of proceeds from exercise of stock options and ESPP, partially offset by \$1.5 million for repurchase of our common shares under the Repurchase Program, \$0.4 million in payment of capital lease obligations, \$7.3 million in repayments of borrowings, and \$0.2 million in common shares acquired to settle withholding tax related to vesting of restricted stock units.

Commitments

See Note 10 of the Notes to the Condensed Consolidated Financial Statements contained in this Quarterly Report on Form 10-Q for a description of commitments.

Off-Balance Sheet Arrangements

As of December 31, 2019, we had no material off-balance sheet arrangements as defined in Regulation S-K 303(a)(4)(ii) arrangements.

Contractual Obligations

There were no material changes outside of our ordinary course of business in our contractual obligations from those disclosed in our Annual Report on Form 10-K for the fiscal year ended June 30, 2019.

Recent Accounting Pronouncements

See [Note 1](#) of the Notes to the Condensed Consolidated Financial Statements contained in this Quarterly Report on Form 10-Q for a description of recent accounting pronouncements, including the expected dates of adoption and estimated effects on results of operations and financial condition, which is incorporated herein by reference.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

There have been no material changes in the market risks previously disclosed in Part II, Item 7A, "Quantitative and Qualitative Disclosures About Market Risk," of our Annual Report on Form 10-K for the year ended June 30, 2019, filed with the SEC on August 23, 2019.

ITEM 4. CONTROLS AND PROCEDURES

Management's Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, (the "Exchange Act")), as of the end of the period covered by this report. Based on that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures as of December 31, 2019 have been designed and are functioning effectively to provide reasonable assurance that the information required to be disclosed in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during the three and six months ended December 31, 2019 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Limitation on Effectiveness of Controls

While our disclosure controls and procedures and internal control over financial reporting are designed to provide reasonable assurance that their respective objectives will be met, we do not expect that our disclosure controls and procedures or our internal control over financial reporting are or will be capable of preventing or detecting all errors and all fraud. Any control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met.

PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

We have in the past, and may from time to time in the future, become involved in legal proceedings arising from the normal course of business activities. The semiconductor industry is characterized by frequent claims and litigation, including claims regarding patent and other intellectual property rights as well as improper hiring practices. Irrespective of the validity of such claims, we could incur significant costs in the defense thereof or could suffer adverse effects on its operations.

The U.S. Department of Justice recently commenced an investigation into the Company's compliance with export control regulations relating to its business transactions with Huawei and its affiliates ("Huawei"), which were added to the "Entity List" by and Department of Commerce ("DOC") in May 2019. In connection with this investigation, DOC requested the Company to suspend shipments of its products to Huawei and the Company complied with such request. The Company is currently working with DOC to resolve this issue in order to resume shipment to Huawei. See "Risk Factor-The current government investigation and evolving export control regulations may adversely affect our financial performance and business operations" and footnote 10 to the consolidated financial statements of the Company.

ITEM 1A. RISK FACTORS

Item 1A of Part I of our Annual Report on Form 10-K for the year ended June 30, 2019, filed with the SEC on August 23, 2019, contains risk factors identified by the Company. Except as noted below, there have been no material changes to the risk factors we previously disclosed in our filings with the SEC. Our operations could also be affected by additional factors that are not presently known to us or by factors that we currently consider immaterial to our business.

The current government investigation and evolving export control regulations may adversely affect our financial performance and business operations.

The U.S. Department of Justice recently commenced an investigation into the Company's compliance with export control regulations relating to its business transactions with Huawei and its affiliates ("Huawei"), which were added to the "Entity List" by and Department of Commerce ("DOC") in May 2019. In connection with this investigation, DOC requested the Company to suspend shipments of its products to Huawei and the Company complied with such request. The Company is currently working with DOC to resolve this issue in order to resume shipment to Huawei. There is no guarantee that DOC will agree to permit us to resume shipment to Huawei on a timely basis. Our inability to continue such shipment may negatively impact our revenue and financial performance, particularly if we are not able to acquire new customers to offset the loss of shipment to Huawei.

The ongoing government investigations into our export control compliance also subject us to a number of financial and business risks. We expect to incur significant costs and expenses, including legal fees, in connection with our effort to respond to the government investigation, and such additional costs will adversely affect our profitability and margin. Furthermore, the management has diverted its resources and time in response to the investigation, and they may not be able to fully engage with the core operation and objectives of our business activities. Finally, while we are fully cooperating with the government in the investigation, we are not able to predict its timing and outcome. In the event that the government decides to bring enforcement action against us, it will result in a material adverse effect on our business operations, financial conditions, and our reputation.

We are also expecting that the U.S. export control regulations to evolve and change in response to the political and economic tension between U.S. and China, including potential new export control regulations that may impose additional restrictions on our ability to continue to do business with certain customers in China and Asia. If such changes occur, we may be required to reduce shipment to certain Asian customers, adjust our business practices and incur additional costs to implement new export control compliance program, each of which will adversely affect our financial conditions and results of operations.

Our business operations and financial performance may be affected by the recent coronavirus outbreak in China.

The recent outbreak of coronavirus epidemic in China is spreading globally and expected to adversely affect the economic conditions in Asia and throughout the world. The outbreak has slowed the economic growth in China, which will negatively

impact the global supply chain, market and economies. We have significant operations in China and the Asia Pacific region, including sales and marketing channels, supply chain and manufacturing facilities. If such outbreak continues, we may experience a decline of sales activities and customer orders; reduction of operation and workforce at our manufacturing facilities in China; delay in the ramp up of mass production of wafers at our JV Company; difficulties in international travels and communications; regulatory restrictions; and other risks resulting from the outbreak. Any of these factors may adversely affect our business, financial conditions and results of operations.

The continuing potential for new or additional tariffs on imported goods from China could adversely affect our business operations.

The United States entered into what is described as “Phase 1” trade agreement with China on January 15, 2020, which reduces some existing tariffs that had been imposed and defers proposed increases of the tariff rate on an additional \$250 billion of Chinese goods from 25% to 30% that had been planned for October 15, 2019, and 15% tariffs on an additional \$160 billion of a wide range of goods and materials imported from China by December 15, 2019. Existing 25% tariffs previously imposed on \$250 billion of Chinese goods will remain in place, while a 15% tariff on another \$120 billion of Chinese goods will be reduced to 7.5%. These goods, absent exemptions, may include products and applications, including consumer electronics, that incorporate our power discrete and power IC products. In response, China has imposed tariffs on certain American products, some of which are being reduced as part of the Phase 1 agreement and may take additional actions if these additional U.S. tariffs are imposed. The continuing trade war could have significant adverse effects on world trade and the world economy. In view of ongoing discussions between the Chinese and U.S. governments on a second phase agreement, the ultimate level of tariffs, the ultimate scope of them, and whether or how the proposed additional tariffs will impact our business is uncertain. We believe that the imposition of additional tariffs by the U.S. government on products incorporating our power semiconductor products could deter our U.S. customers from purchasing our products originating from China. If so, this could reduce demand for our power semiconductor products or result in pricing adjustments that would lower our gross margin, which could have a material adverse effect on our business and results of operations.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

In September 2017, the Board of Directors approved a repurchase program (the “Repurchase Program”), that allows us to repurchase our common shares from the open market pursuant to a pre-established Rule 10b5-1 trading plan or through privately negotiated transactions up to an aggregate of \$30.0 million. The amount and timing of any repurchases under the Repurchase Program depend on a number of factors, including but not limited to, the trading price, volume and availability of our common shares and our available cash reserve. Shares repurchased under this program are accounted for as treasury shares and the total cost of shares repurchased is recorded as a reduction of shareholders' equity. There is no guarantee that such repurchases under the Repurchase Program will enhance the value of our shares. During the three months ended December 31, 2019, we did not repurchase any shares under the Repurchase Program. As of December 31, 2019, approximately \$13.4 million remained available under the Repurchase Program.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

Not applicable.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. OTHER INFORMATION

Not applicable.

ITEM 6. EXHIBITS

31.1	<u>Certification of Chief Executive Officer pursuant to Securities Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.</u>
31.2	<u>Certification of Chief Financial Officer pursuant to Securities Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.</u>
32.1	<u>Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.</u>
32.2	<u>Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.</u>
101.INS	XBRL Instance
101.SCH	XBRL Taxonomy Extension Schema
101.CAL	XBRL Taxonomy Extension Calculation
101.DEF	XBRL Taxonomy Extension Definition
101.LAB	XBRL Taxonomy Extension Labels
101.PRE	XBRL Taxonomy Extension Presentation

SIGNATURES

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

February 10, 2020

ALPHA AND OMEGA SEMICONDUCTOR LIMITED

By: /s/ YIFAN LIANG
Yifan Liang
Chief Financial Officer and Corporate Secretary
(Principal Financial Officer)

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO
SECURITIES EXCHANGE ACT RULES 13a-14(a) and 15d-14(a), AS ADOPTED PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Mike F. Chang, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Alpha and Omega Semiconductor Limited (the "registrant");
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: February 10, 2020

/s/ Mike F. Chang

Mike F. Chang
Chief Executive Officer

**CERTIFICATION OF CHIEF FINANCIAL OFFICER PURSUANT TO
SECURITIES EXCHANGE ACT RULES 13a-14(a) and 15d-14(a), AS ADOPTED PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Yifan Liang, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Alpha and Omega Semiconductor Limited (the "registrant");
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: February 10, 2020

/s/ Yifan Liang

Yifan Liang *Chief Financial Officer and Corporate Secretary*

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

I, Mike F. Chang, chief executive officer of Alpha and Omega Semiconductor Limited (the "Company"), certify for the purposes of 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge,

- a. the Quarterly Report of the Company on Form 10-Q for the fiscal quarter ended December 31, 2019 (the "Report"), fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- b. the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 10, 2020

/s/ Mike F. Chang

Mike F. Chang
Chief Executive Officer

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

I, Yifan Liang, chief financial officer of Alpha and Omega Semiconductor Limited (the "Company"), certify for the purposes of 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge,

- a. the Quarterly Report of the Company on Form 10-Q for the fiscal quarter ended December 31, 2019 (the "Report"), fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- b. the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 10, 2020

/s/ Yifan Liang

Yifan Liang
Chief Financial Officer and Corporate Secretary