



Semiconductor packaging industry update

Global Markets Research
28 July 2026

EQUITY: JAPAN ELECTRONIC PARTS

We revise assumptions for accelerator roadmaps

We assume ongoing 2-die GPU configuration, look to earlier EMIB-T shipments for 4-die custom ASIC configurations

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Apr–Jun industry developments: Start of shipments for Rubin processors

We think shipments of packages for Nvidia's Rubin GPUs got under way in 27/3 Q1. We expect full-scale mass production in Q2. Using macroeconomic statistics, we estimate monthly shipment value of ¥24.7bn in Jan–Mar and ¥25.8bn in Apr–May (¥28.1bn in May). The price per m² increased from ¥1.18mn in Jan–Mar to ¥12.9bn in Apr–May (¥13.6bn in May; Figure 1).

We revise accelerator roadmap assumptions: 2-die configuration for GPUs, earlier shipments of EMIB-T

There is a growing view in the packaging industry that the structure of the Rubin Ultra will be changed from four dies, which was announced at GTC in March, to two (see our 30 June 2026 Quick Note *SemiAnalysis report on Rubin Ultra*), and some observers are starting to take the view that the Feynman will have a two-module structure with two dies in a 3D stacking configuration. It may have become technically difficult to combine interposers larger than the 5.5x reticle size with HBM4, which has a lot of wiring. We have revised our forecasts for Ibiden [4062] (Buy), with a downward revision for our 28/3 forecast for GPU package prices on the assumption that Rubin Ultra will use a 2-die configuration, contrasted with our new view that shipments of packages for EMIB-T will begin in 28/3, one year earlier than we previously thought. We only fine-tuned our profit forecasts as these positives and negatives more or less cancel each other out.

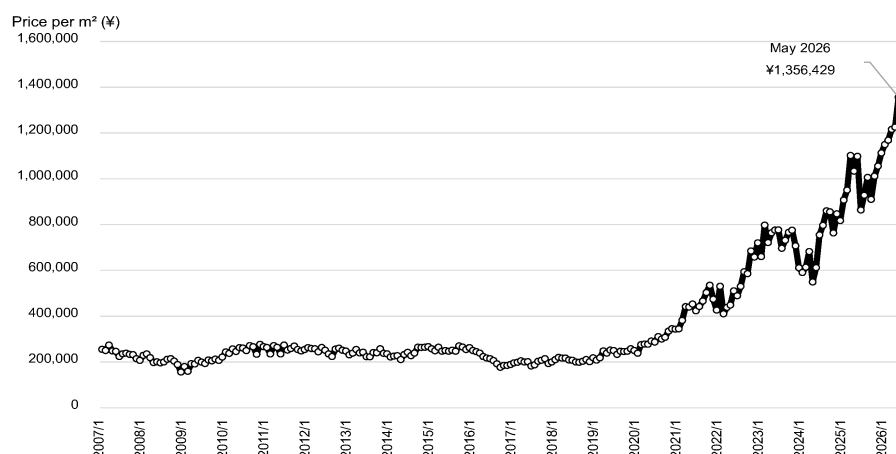
EMIB-T is designed to embed silicon bridges without using interposers, making it easier to produce larger packaging substrates. We think this has resulted in strong demand for large package substrates that integrate more AI accelerator dies, HBM, and I/O, and we surmise that a growing number of custom ASIC manufacturers are considering using EMIB-T. The use of large packages can increase compute density within racks, increase memory and storage capacity, and increase signaling bandwidth, thereby enabling large-scale batch processing, reducing energy consumption per token, and reducing latency for agent models. At present, we think EMIB-T shipment volumes are being crimped by a lack of production capacity, but increasing capacity in a timely fashion could well offer earnings upside for 29/3 onwards.

Advances in packaging technologies in view of update of agent models

In agent-based coding models, performance (tokens per Watt per hour) is restricted by memory capacity and bandwidth between memory and GPU. The current design approach for accelerators is to increase the number of GPUs and amount of HBM per module by increasing package size, and we think this kind of design approach will become even more advantageous with growth in agent-based workloads. For example, using large packages to increase the amount of HBM per GPU will increase the proportion of weights and key-value cache that be stored in HBM, thereby reducing data transfer with host memory or SSDs. Moreover, including more GPUs in one module can increase bandwidth between the GPUs, both reducing the energy needed for signaling and increasing GPU utilization.

Reference figures

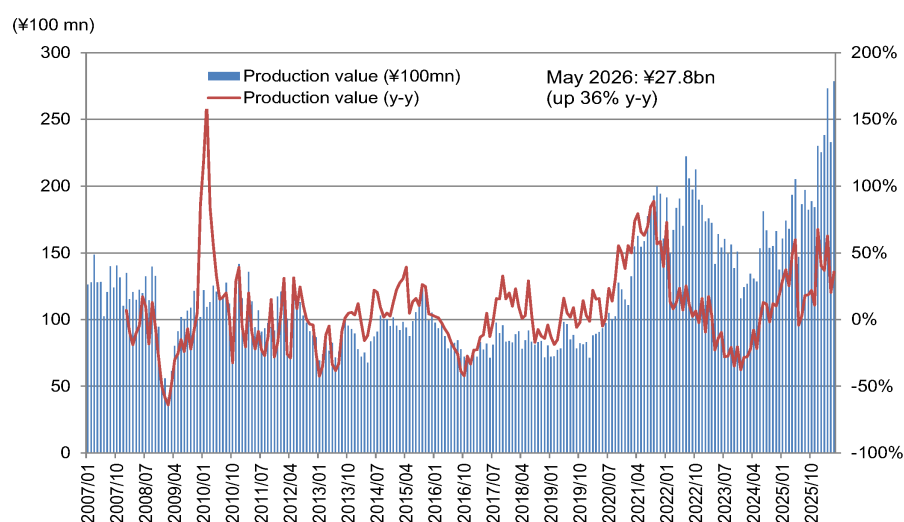
Fig. 1: Price per m² for rigid module boards



Note: Module boards have components mounted on the board surface.

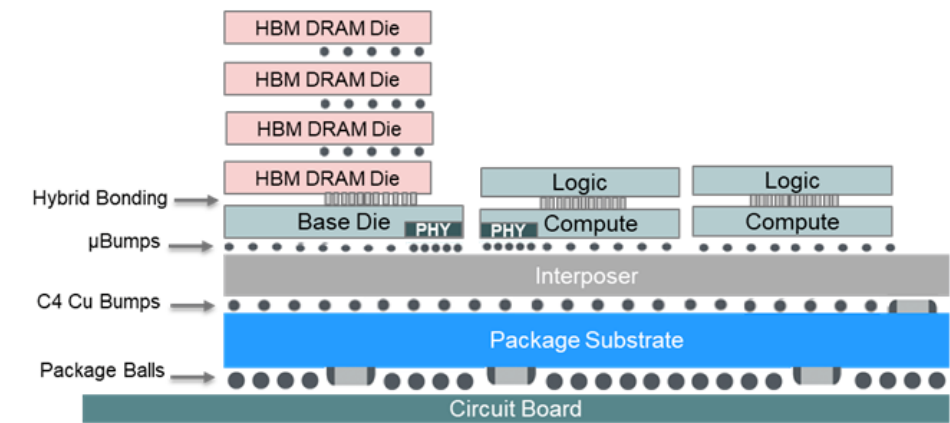
Source: Nomura, based on Ministry of Economy, Trade & Industry's Current Survey of Production

Fig. 2: Rigid PCB production value



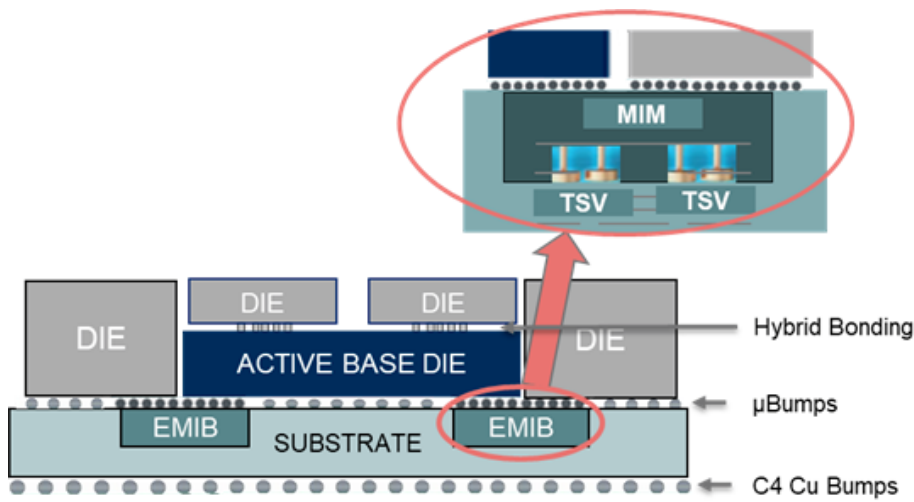
Source: Nomura, based on Ministry of Economy, Trade & Industry's Current Survey of Production

Fig. 3: PLP interposer-based 3.5D packaging



Source: Nomura

Fig. 4: EMIB-based 3.5D packaging



Source: Nomura

Appendix A-1

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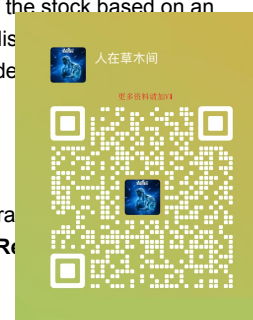
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In addition, all products carry the risk of losses owing to price fluctuations or other factors. Fees and risks vary by product. Please thoroughly read the written materials provided, such as documents delivered before making a contract, listed securities documents, or prospectuses. Transactions involving Japanese equities (including Japanese REITs, Japanese ETFs, and Japanese ETNs, Japanese Infrastructure Funds) are subject to a sales commission of up to 1.43% (tax included) of the transaction amount (or a commission of ¥2,860 (tax included) for transactions of ¥200,000 or less). When Japanese equities are purchased via OTC transactions (including offerings), only the purchase price shall be paid, with no sales commission charged. However, Nomura Securities may charge a separate fee for OTC transactions, as agreed with the customer. Japanese equities carry the risk of losses owing to price fluctuations. Japanese REITs carry the risk of losses owing to fluctuations in price and/or earnings of underlying real estate. Japanese ETFs and ETNs carry the risk of losses owing to fluctuations in the underlying indexes or other benchmarks. Japanese Infrastructure Funds carry out the risk of losses owing to fluctuations in price and/or earnings of underlying infrastructures.

Transactions involving foreign equities are subject to a domestic sales commission of up to 1.045% (tax included) of the transaction amount (which equals the local transaction amount plus local fees and taxes in the case of a purchase or the local transaction amount minus local fees and taxes in the case of a sale) (for transaction amounts of ¥750,000 and below, maximum domestic sales commission is ¥7,810 (tax included)). Local fees and taxes in foreign financial instruments markets vary by country/territory. When foreign equities are purchased via OTC transactions (including offerings), only the purchase price shall be paid, with no sales commission charged. However, Nomura Securities may charge a separate fee for OTC transactions, as agreed with the customer. Foreign equities carry the risk of losses owing to factors such as price fluctuations and foreign exchange rate fluctuations.

Margin transactions are subject to a sales commission of up to 1.43% (tax included) of the transaction amount (or a commission of ¥2,860 (tax included) for transactions of ¥200,000 or less), as well as management fees and rights handling fees. In addition, long margin transactions are subject to interest on the purchase amount, while short margin transactions are subject to fees for the lending of the shares borrowed. A margin equal to at least 30% of the transaction amount (at least 33% for online transactions) and at least ¥300,000 is required. With margin transactions, an amount up to roughly 3.3x the margin (roughly 3x for online transactions) may be traded. Margin transactions therefore carry the risk of losses in excess of the margin owing to share price fluctuations. For details, please thoroughly read the written materials provided, such as listed securities documents or documents delivered before making a contract.

Transactions involving convertible bonds are subject to a sales commission of up to 1.10% (tax included) of the transaction amount (or a commission of ¥4,400 (tax included) if this would be less than ¥4,400). When convertible bonds are purchased via OTC transactions (including offerings), only the purchase price shall be paid, with no sales commission charged. However, Nomura Securities may charge a separate fee for OTC transactions, as agreed with the customer. Convertible bonds carry the risk of losses owing to factors such as interest rate fluctuations and price fluctuations in the underlying stock. In addition, convertible bonds denominated in foreign currencies also carry the risk of losses owing to factors such as foreign exchange rate fluctuations.

When bonds are purchased via public offerings, secondary distributions, or other OTC transactions with Nomura Securities, only the purchase price shall be paid, with no sales commission charged. Bonds carry the risk of losses, as prices fluctuate in line with changes in market interest rates. Bond prices may also fall below the invested principal as a result of such factors as changes in the management and financial circumstances of the issuer, or changes in third-party valuations of the bond in question. In addition, foreign currency-denominated bonds also carry the risk of losses owing to factors such as foreign exchange rate fluctuations.

When Japanese government bonds (JGBs) for individual investors are purchased via public offerings, only the purchase price shall be paid, with no sales commission charged. As a rule, JGBs for individual investors may not be sold in the first 12 months after issuance. When JGBs for individual investors are sold before maturity, an amount calculated via the following formula will be subtracted from the par value of the bond plus accrued interest: (1) for 10-year variable rate bonds, an amount equal to the two preceding coupon payments (before tax) x 0.79685 will be used, (2) for 5-year and 3-year fixed rate bonds, an amount equal to the two preceding coupon payments (before tax) x 0.79685 will be used. When inflation-indexed JGBs are purchased via public offerings, secondary distributions (uridashi deals), or other OTC transactions with Nomura Securities, only the purchase price shall be paid, with no sales commission charged. Inflation-indexed JGBs carry the risk of losses, as prices fluctuate in line with changes in market interest rates and fluctuations in the nationwide consumer price index. The notional principal of inflation-indexed JGBs changes in line with the rate of change in nationwide CPI inflation from the time of its issuance. The amount of the coupon payment is calculated by multiplying the coupon rate by the notional principal at the time of payment. The maturity value is the amount of the notional principal when the issue becomes due. For J117 and subsequent issues, the maturity value shall not undercut the face amount. Purchases of investment trusts (and sales of some investment trusts) are subject to a purchase or sales fee of up to 5.5% (tax included) of the transaction amount. Also, a direct cost that may be incurred when selling investment trusts is a fee of up to 2.0% of the unit price at the time of redemption. Indirect costs that may be incurred during the course of holding investment trusts include, for domestic investment trusts, an asset

management fee (trust fee) of up to 5.5% (tax included/annualized basis) of the net assets in trust, as well as fees based on investment performance. Other indirect costs may also be incurred. For foreign investment trusts, indirect fees may be incurred during the course of holding such as investment company compensation.

Investment trusts invest mainly in securities such as Japanese and foreign equities and bonds, whose prices fluctuate. Investment trust unit prices fluctuate owing to price fluctuations in the underlying assets and to foreign exchange rate fluctuations. As such, investment trusts carry the risk of losses. Fees and risks vary by investment trust. Maximum applicable fees are subject to change; please thoroughly read the written materials provided, such as prospectuses or documents delivered before making a contract.

In interest rate swap transactions and USD/JPY basis swap transactions ("interest rate swap transactions, etc."), only the agreed transaction payments shall be made on the settlement dates. Some interest rate swap transactions, etc. may require pledging of margin collateral. In some of these cases, transaction payments may exceed the amount of collateral. There shall be no advance notification of required collateral value or collateral ratios as they vary depending on the transaction. Interest rate swap transactions, etc. carry the risk of losses owing to fluctuations in market prices in the interest rate, currency and other markets, as well as reference indices. Losses incurred as such may exceed the value of margin collateral, in which case margin calls may be triggered. In the event that both parties agree to enter a replacement (or termination) transaction, the interest rates received (paid) under the new arrangement may differ from those in the original arrangement, even if terms other than the interest rates are identical to those in the original transaction. Risks vary by transaction. Please thoroughly read the written materials provided, such as documents delivered before making a contract and disclosure statements.

In OTC transactions of credit default swaps (CDS), no sales commission will be charged. When entering into CDS transactions, the protection buyer will be required to pledge or entrust an agreed amount of margin collateral. In some of these cases, the transaction payments may exceed the amount of margin collateral. There shall be no advance notification of required collateral value or collateral ratios as they vary depending on the financial position of the protection buyer. CDS transactions carry the risk of losses owing to changes in the credit position of some or all of the referenced entities, and/or fluctuations of the interest rate market. The amount the protection buyer receives in the event that the CDS is triggered by a credit event may undercut the total amount of premiums that he/she has paid in the course of the transaction. Similarly, the amount the protection seller pays in the event of a credit event may exceed the total amount of premiums that he/she has received in the transaction. All other conditions being equal, the amount of premiums that the protection buyer pays and that received by the protection seller shall differ. In principle, CDS transactions will be limited to financial instruments business operators and qualified institutional investors. Transfers of equities to another securities company via the Japan Securities Depository Center are subject to a transfer fee of up to ¥11,000 (tax included) per issue transferred depending on volume. No account fee will be charged for marketable securities or monies deposited.

Nomura Securities Co., Ltd.

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