

Southeast Asia Redistribution Layer Material Market Size and Forecasts (2020 - 2030), Regional Share, Trends, and Growth Opportunity Analysis Report Coverage: By Type (Polyimide (PI), Polybenzoxazole (PBO), Benzocyclobutene (BCB), and Others) and Application (Fan-Out Wafer Level Packaging (FOWLP) and 2 5D/3D IC Packaging [High Bandwidth Memory (HBM), Multi-Chip Integration, Package on Package (FOPOP), and Others])

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Abstracts

The Southeast Asia redistribution layer material market is expected to grow from US\$ 54.51 million in 2022 to US\$ 150.11 million by 2030; it is expected to grow at a CAGR of 13.5% from 2022 to 2030.

The redistribution layer (RDL) is the thin film or layer of conductive material used to route and redistribute electrical signals within an integrated circuit (IC) or semiconductor device. This layer is essential for connecting components, such as transistors, capacitors, and resistors, within the IC and ensuring that signals can flow efficiently between them. Southeast Asia is strategically positioned to benefit from this demand. The region has emerged as a semiconductor manufacturing and assembly hub, with countries such as Malaysia, Vietnam, and Thailand hosting significant facilities. The proximity of these production centers to the key industries means that sourcing redistribution layer materials is efficient and cost-effective. Additionally, the economic growth of the automotive and telecommunications sectors has a ripple effect on the entire supply chain. Investments in research and development, technology, and infrastructure are increasing, fostering an environment conducive to innovation and

development in the field of redistribution layer materials. This trend is characterized by increased production, advanced packaging technologies, miniaturization requirements, the region's strategic supply chain position, and a positive economic impact on the entire ecosystem. These factors collectively propel the Southeast Asia redistribution layer material market growth.

In the quest for cost reduction, the semiconductor industry has always been involved in developing innovative solutions. One approach currently considered by the leading semiconductor players is the migration from wafer and strip size to large-size panels dedicated to IC assembly. Efficiency and economies of scale are the added value of this path. Moving fan-out package manufacturing from a wafer, Fan-Out Wafer Level Packaging (FOWLP) to a large-scale panel, Fan-Out Panel Level Packaging (FOPLP), could be the solution for a wider adoption. As consumer electronics, automotive systems, and industrial devices become more compact and complex, there is a growing need for advanced semiconductor packaging technologies. Redistribution layers are integral to this process, it enables the creating of smaller form factors, increases functionality and improves performance. Manufacturers in Southeast Asia are positioned to capitalize on this trend by producing and supplying the necessary materials. Advancements in the packaging industries, specifically the adoption of 2.5D and 3D packaging technologies, are poised to be significant drivers of the Southeast Asia redistribution layer material market growth. 2.5D and 3D packaging technologies significantly increase chip density and functionality. By stacking multiple semiconductors die on each other or side by side, these technologies allow for more robust and compact electronic devices. Redistribution layers are essential for creating interconnections between these stacked or adjacent dies, ensuring efficient data transfer and electrical connectivity. Southeast Asia can leverage semiconductor manufacturing expertise to supply the critical redistribution layer materials required for these advanced packaging techniques.

These packaging technologies offer notable advantages in terms of improved performance and energy efficiency. With 2.5D and 3D packaging, shorter interconnect lengths and reduced signal paths contribute to faster data processing and lower power consumption. As a result, demand for redistribution layer materials capable of maintaining signal integrity and thermal management becomes even more crucial. Southeast Asia can play a pivotal role in delivering these advanced materials to meet global industry demands. Furthermore, the automotive industry is embracing 2.5D and 3D packaging to enable the integration of advanced driver-assistance systems (ADAS) and autonomous driving technologies. These applications rely on tightly integrated, high-performance semiconductor packages that demand reliable redistribution layer

materials. Southeast Asia's strong presence in automotive electronics manufacturing positions it as a key contributor to the Southeast Asia redistribution layer material market growth.

Manufacturers across the globe are developing new packaging technologies. For instance, in May 2021, Samsung Electronics launched I-Cube4, for High-Performance Computing (HPC) to AI, 5G, cloud, and large data center, fast communication, and improving power efficiency between logic & memory through heterogeneous integration. In addition, in September 2023, Faraday Technology Corporation, an ASIC design service, and IP provider, announced the launch of its 2.5D/3D advanced package service. The 2.5D package technology is used for achieving the highest performance, targeting HPC such as AI accelerator, graph processing unit, and networking processor. Such advancements in packaging technology are expected to bolster the Southeast Asia redistribution layer material market growth.

A few key players operating in the Southeast Asia redistribution layer material market are Advanced Semiconductor Engineering, Inc; Amkor Technology; Fujifilm Corporation; DuPont; Infineon Technologies AG; NXP Semiconductors; Samsung Electronics Co., Ltd; Shin-Etsu Chemical Co., Ltd; SK Hynix Inc; and Jiangsu Changjiang Electronics Technology Co., Ltd. Players operating in the Southeast Asia redistribution layer material market are highly focused on developing high-quality and innovative product offerings to fulfill customers' requirements.

The overall Southeast Asia redistribution layer material market size has been derived using both primary and secondary sources. Exhaustive secondary research has been conducted using internal and external sources to obtain qualitative and quantitative information related to the Southeast Asia redistribution layer material market. Also, multiple primary interviews have been conducted with industry participants to validate the data and gain more analytical insights into the topic. The participants of this process include industry experts, such as VPs, business development managers, market intelligence managers, and national sales managers—along with external consultants, such as valuation experts, research analysts, and key opinion leaders—specializing in the Southeast Asia redistribution layer material market.

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