



AST Completes Singapore's First High-End FC-BGA Substrate Facility to Meet Growing AI Chip Demand

September 29, 2026

- First Flip Chip Ball Grid Array (FC-BGA) substrate production facility in Singapore
- Addresses one of the most critical supply chain capacity constraints of the semiconductor industry
- Diversifies Singapore's semiconductor ecosystem beyond current wafer fab, IC design and assembly operations.

29 September 2026, SINGAPORE – Advanced Substrate Technologies (AST) today announced the official opening of its new manufacturing facility in Singapore, the first in the country capable of producing high-end Flip Chip Ball Grid Array (FC-BGA) substrates, and the TOPPAN Group's first such facility outside Japan. The milestone comes as demand for advanced substrate capacity, a persistent bottleneck for AI, networking, and next-generation computing chips, continues to outpace global supply. AST is a joint venture between TOPPAN Holdings Inc. and Broadcom Inc.

A delegation of AST executives, including key partners from the TOPPAN Group and Broadcom welcomed Mr Gan Kim Yong, Deputy Prime Minister and Minister for Trade and Industry (Trade), alongside other partners and guests to the opening ceremony.

"AST's ability to deliver large-body, high-layer-count substrates at TOPPAN's exacting standard is helping meet a real bottleneck in AI and networking chip production," said Yoshiyuki Iida, CEO, AST. "We are grateful for the longstanding support and partnership of the Singapore government in this venture. This investment reflects both TOPPAN and Broadcom's long-term commitment to Singapore as a critical hub in our global manufacturing network and strengthens the resilience of the semiconductor supply chain."

The approximately 95,000-square-metre facility is designed to meet the growing demand for generative AI and data centres in the region featuring sustainability elements such as solar panels and advanced water recycling technologies. The Singapore production base also complements TOPPAN's main production hub in Niigata, Japan, and will manufacture large-body, high-layer-count substrates for advanced semiconductor products, including AI compute and networking devices.

Since breaking ground in March 2024, AST has already hired more than 200 high-tech engineers and skilled technicians, in addition to operational personnel in Singapore. The facility also houses R&D capabilities to meet future performance demands, alongside close collaborations with technology institutions in Singapore.

"Singapore continues to be an attractive destination and gateway to the global semiconductor industry for us, especially with a strong ecosystem of innovation, capabilities and resources," said Satoshi Oya, President & COO, TOPPAN Holdings. "TOPPAN looks forward to continuing to drive advanced semiconductor packaging forward as artificial intelligence accelerates across the board."

The project is supported by Singapore's Economic Development Board (EDB) and JTC Corporation, which have played a key role in enabling the facility's establishment.

"AST's facility will boost Singapore's capabilities in advanced substrates, which is a critical enabler for advanced packaging, and strengthen our position in the global semiconductor value chain," said Png Cheong Boon, Chairman, Singapore Economic Development Board. "Singapore has served as an important base for Broadcom and TOPPAN. We are glad that both companies are growing their manufacturing and R&D presence here through AST. EDB will continue to work with both companies and AST to build new capabilities to support global demand for semiconductors, and create new jobs and opportunities here."

JTC Ms Jacqueline Poh, Chief Executive of JTC Corporation, said: "Advanced substrates are increasingly critical to the semiconductor value chain as AI and high-performance computing drive demand. JTC is pleased to support Broadcom and TOPPAN in establishing this new facility in Jurong and will continue to work with industry partners to provide the infrastructure needed for next generation semiconductor manufacturing in Singapore."

As TOPPAN's largest customer for FC-BGA substrates, Broadcom has closely supported the facility's development, reflecting the strategic importance of additional large-body, high-layer-count substrate capacity to its next-generation AI compute and networking product roadmap.

"AST's FC-BGA substrate capacity in Singapore gives us meaningful flexibility and differentiation as demand for AI and networking silicon continues to climb. This facility, brought online three months early, strengthens our supply chain resilience by delivering vital relief while the industry is constrained by substrate shortages," said Charlie Kawwas, Ph.D., president, Semiconductor Solutions Group, Broadcom. "Thanks to the exceptional execution by TOPPAN and AST, alongside the continued partnership of the Singapore EDB, this facility will deliver the next generation of large-body, high-layer-count substrates that Broadcom requires to further scale global AI infrastructure."

Located in the Jurong Lake District, AST's facility is targeting the start of high-value manufacturing by late-2026, with ongoing recruitment across engineering and technical roles. The company will work closely with TOPPAN and Broadcom to scale the output as demand for advanced substrates grows across AI, networking, and next-generation computing applications.

ABOUT ADVANCED SUBSTRATE TECHNOLOGIES (AST)

Advanced Substrate Technologies Pte. Ltd. (AST) is a Singapore-based joint venture between TOPPAN Holdings Inc. and Broadcom Inc., specialising in the design and manufacturing of advanced Flip Chip Ball Grid Array (FC-BGA) substrates. Based near Jurong Lake District, AST is at the forefront of developing high-quality substrates for cutting-edge semiconductor applications, including network switches and AI/ML devices. For more information, please see: <https://ast-sg.com/>

ABOUT the TOPPAN Group

Established in Tokyo in 1900, the TOPPAN Group is a leading global provider of integrated solutions spanning printing, communications, security, packaging, and electronics. The TOPPAN Group's global team of more than 50,000 employees offers optimal solutions enabled by industry-leading expertise and technologies to address the diverse challenges of every business sector and society and contribute to the achievement of shared sustainability goals. In Singapore, the TOPPAN Group has maintained a critical strategic hub for regional growth and high-tech innovation for many years. Through its Singapore-based subsidiaries, including Advanced Substrate Technologies (AST), the TOPPAN Group is launching the country's first flip chip ball grid array (FC-BGA) substrate manufacturing facility to directly anchor advanced semiconductor packaging, artificial intelligence (AI), and next-generation data centre supply chains across the Asia-Pacific region. For more information, visit <https://www.holdings.toppan.com/en>.

ABOUT BROADCOM

Broadcom Inc. (NASDAQ: AVGO) is a technology leader that designs, develops, and supplies semiconductors and infrastructure software for global organizations' complex, mission-critical needs. Broadcom combines long-term R&D investment with superb execution to deliver the best technology, at scale. Broadcom is a Delaware corporation headquartered in Palo Alto, CA. For more information, visit www.broadcom.com.