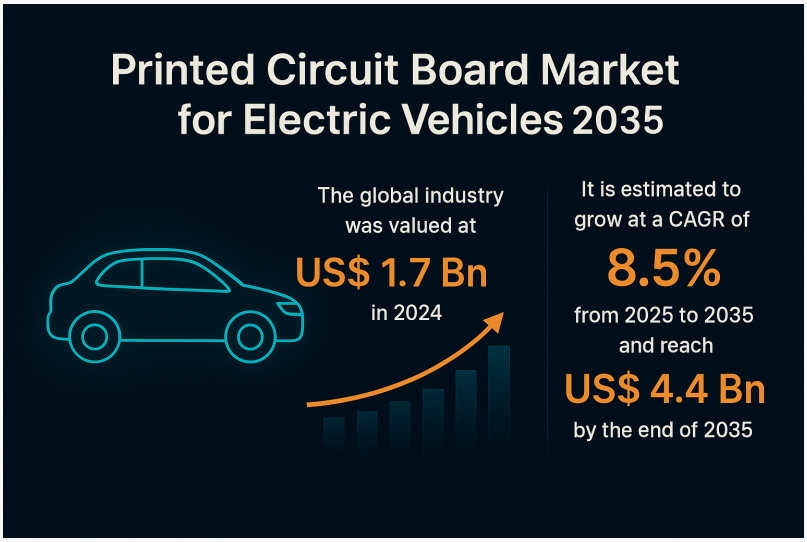
Printed Circuit Board Market for Electric Vehicles Projected to Reach US$ 4.4 Bn by 2035, Growing at 8.5% CAGR | TMR

Global EV PCB market to hit US$ 4.4 Bn by 2035, fueled by EV supply chain investments, autonomous tech, and demand for flexible PCB solutions.



Printed Circuit Board Market

WILMINGTON, DE, UNITED STATES, September 10, 2025 / EINPresswire.com/ -- The global transition toward sustainable mobility has sparked a rapid surge in demand for advanced electronic components that can support the complexity of next-generation vehicles. Among these, printed circuit boards (PCBs) are emerging as a critical technology backbone, ensuring seamless integration, power management, and safety within electric vehicles (EVs). According to the latest industry analysis, the global printed circuit board market for electric vehicles was valued at US$ 1.7 Bn in 2024 and is projected to grow at a CAGR of 8.5% from 2025 to 2035, reaching US$ 4.4 Bn by 2035.

> “Advanced PCBs are the backbone of EV innovation, driving performance and reliability in critical systems like battery management, motor control, and safety.”
>
> *Transparency Market Research*

PCBs are central to EV architecture, connecting various systems such as battery management, infotainment, motor control, and advanced driver assistance systems (ADAS). With rising EV adoption, stronger regulations, and technological breakthroughs, the PCB market is set to witness remarkable growth over the next decade.

Market Overview: Printed circuit boards for electric vehicles are designed to handle demanding conditions, offering durability, superior heat resistance, and compact layouts for complex functions. They serve as the foundation for electrical connectivity, enabling reliable communication and power distribution across different systems.

Modern EVs are equipped with ADAS, infotainment platforms, telematics, and connectivity solutions. These electronic enhancements necessitate high-density interconnect (HDI), flexible, and multilayer PCBs that ensure superior signal integrity, thermal efficiency, and compact design.
Government initiatives to reduce carbon emissions and increase vehicle safety further support this growth. As automakers strive for innovation, the PCB industry is becoming a cornerstone of global EV development.

Key Drivers of Market Growth

1. Growing Investments and Strategic Partnerships in the EV Supply Chain
Automakers and technology firms are ramping up investments in PCBs for BMS, ADAS, and powertrains. The U.S. Department of Commerce announced a US$ 3 Bn investment under the CHIPS and Science Act (2023) to boost domestic PCB manufacturing. Similarly, Volkswagen and Bosch are forming alliances to strengthen semiconductor and PCB production capabilities.
2. Rising Integration of Autonomous and Connected Vehicle Features
Autonomous driving requires real-time processing of data from multiple sensors. This drives demand for multi-layer, high-frequency PCBs capable of handling data transfer speeds of up to 50 Gbps. Features like vehicle-to-everything (V2X) connectivity and AI-based decision-making necessitate advanced PCB designs.
3. Regulatory Push on Safety and Emissions
Governments worldwide are mandating higher safety and emission standards. The FCC's reservation of the 5.9 GHz frequency band exclusively for vehicle safety underscores the need for high-performance PCBs in connected mobility.
4. Technological Advancements
Research innovations, such as ultra-thin, heat-resistant PCBs developed at MIT, are making EVs up to 30% more efficient. Flexible PCBs, in particular, are gaining traction in lightweight, space-saving EV designs.

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Key Players and Industry Leaders

The global PCB market for EVs is highly competitive, with companies investing in R&D, manufacturing capacity, and partnerships. Leading companies include:
- AT&S Austria Technologie & Systemtechnik AG
- TTM Technologies
- Zhen Ding Tech. Group
- LG Innotek
- Unimicron Technology Corporation
- Kinwong Electronic Co. Ltd.
- MEIKO ELECTRONICS Co., Ltd.

- Nan Ya PCB Corporation
- Compeq Manufacturing Co., Ltd.
- Victory Giant Technology Co., Ltd.

These players are actively expanding production facilities, enhancing flexible PCB solutions, and diversifying their product portfolios to cater to rising EV demand.

Recent Developments

- October 2024 – Mektech Manufacturing invested 920 million baht to expand PCB production in Thailand, targeting EV-related demand for flexible PCBs and assemblies.
- July 2024 – Omron Electronic Components Europe launched the G9KC high-power PCB relay for Level 2 EV charging stations, enabling smaller, lighter, and more energy-efficient designs.
- September 2023 – U.S. Department of Commerce announced a US$ 3 Bn investment to strengthen domestic PCB supply chains under the CHIPS and Science Act.

New Opportunities and Challenges

Opportunities:

- Demand for flexible and rigid-flex PCBs for compact EV designs.
- Expanding EV charging infrastructure and energy-efficient relay systems.
- Rising EV penetration in emerging economies such as India and ASEAN markets.

Challenges:

- Supply-demand imbalance in regions like Europe, where PCB production meets only ~17% of demand.
- High raw material costs and limited availability of advanced substrate materials.
- Intense competition among global manufacturers, driving price pressures.

Latest Market Trends

- Shift toward Multilayer and HDI PCBs: Multilayer PCBs accounted for 73.98% of market share in 2024 and are expected to remain dominant due to their superior performance and space efficiency.
- Increased Use of Flexible PCBs: Lightweight, bendable designs are gaining traction in battery systems, sensors, and infotainment units.
- Integration of AI and 5G in EVs: PCB designs are evolving to support real-time decision-making in autonomous vehicles.
- Regional Supply Chain Localization: Countries are boosting domestic PCB production to reduce dependency on imports, especially from East Asia.

Future Outlook

The future of the printed circuit board market for electric vehicles is closely tied to the evolution

of EV technologies. By 2035, PCBs will not only serve as electronic connectors but also as smart enablers of efficiency, safety, and sustainability.

- The market is projected to reach US$ 4.4 Bn by 2035, driven by innovations in thermal management, miniaturization, and lightweight designs.
- Autonomous driving advancements will necessitate AI-optimized PCB designs capable of processing massive data in real time.
- East Asia will continue to lead in manufacturing, but North America and Europe are expected to increase localized production with significant government backing.

Market Segmentation

By Type: Multilayer, Double-sided, Single-sided
By Substrate Type: Standard Multilayer, Rigid, HDI/Micro-via, Flexible, Rigid-flex
By Material Type: FR4, Metal-based, Ceramic, PTFE, Power Combi-boards
By Application: ADAS, BMS, Power Electronics, Infotainment, Charging Systems, VCUs
By Vehicle Type: Two-wheelers, Passenger Cars, SUVs, Pick-up Trucks, Vans, Trucks, Buses, Off-highway Vehicles
By End-users: OEMs, Tier 1 & Tier 2 Suppliers, Aftermarket

Regional Insights

- East Asia: Dominated the market with 68.3% share in 2024, led by China, Japan, and South Korea. Strong supply chains, advanced R&D, and government support underpin growth.
- North America: Benefiting from government investments and EV adoption in the U.S. and Canada.
- Europe: Facing supply shortages but investing heavily in PCB infrastructure. Germany and France are central to growth.
- South Asia & ASEAN: Emerging markets with increasing EV penetration, supported by government policies and manufacturing expansion.
- Middle East, Africa, and South America: Gradually expanding with infrastructure developments and EV adoption initiatives.

Why Buy This Report?

- Comprehensive market size and forecasts up to 2035.
- In-depth analysis of drivers, restraints, opportunities, and trends.
- Regional and segment-level insights for precise strategic planning.
- Detailed profiles of 20+ leading PCB manufacturers.
- Competitive landscape analysis including market share and strategies.
- Valuable resource for OEMs, suppliers, investors, and policymakers shaping the EV ecosystem.

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