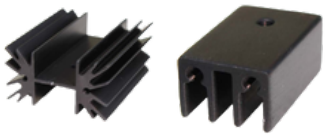
Board Level Heat Sinks

Adam Tech's Board-Level Heat Sinks, available in both extruded and stamped forms, ensure optimal device performance by efficiently dissipating heat generated by components on printed circuit boards (PCBs). Made from aluminum, which boasts high thermal conductivity, these heat sinks transfer heat into the air, cooling devices effectively. Their extensive finned surface area enhances airflow and leverages natural convection for improved heat dissipation, making them well suited for temperature-sensitive applications. Thanks to their lightweight, compact design, they're perfect for installations with tight spatial constraints and are compatible with common TO-220, TO-247 and SOT-32 component packages.



Extruded Heat Sinks

Stamped Heat Sinks

Frequently Asked Questions (FAQs)

What's the difference between extruded and stamped?

- **Extruded Heat Sinks:** Created by pushing heated aluminum (or sometimes copper) through a die, forming a continuous profile that includes fins and bases. This process allows for designs optimized for thermal performance and is cost-effective for mass production due to automation.
- **Stamped Heat Sinks:** Fabricated by cutting sheets of metal into the desired shape through a stamping process. This involves placing metal into a stamping machine that uses a die to form the sink. This method is highly automated and efficient for high-volume production, particularly for simpler designs.

Why choose our heat sinks over the competition?

Adam Tech offers a comprehensive selection of board level heat sinks designed to meet a wide range of thermal management needs. Whether your application requires a specific size, shape, or mounting, we provide diverse options to ensure the right fit. What sets us apart is our competitive pricing, flexible order quantities, and faster lead times, giving you both value and efficiency without compromising quality.

Applications

TO-220 Package Type

- **Power Transistors:** Often found in applications requiring high voltage and current handling.
- **MOSFETs (Metal-Oxide-Semiconductor Field-Effect Transistors):** Used in switching and linear applications, particularly in power management circuits, audio amplifiers, and motor drivers.
- **Integrated Circuits (ICs):** For analog power ICs and linear regulators that dissipate significant heat during operation.

TO-247 Package Type

- **High-Power MOSFETs (Metal-Oxide-Semiconductor Field-Effect Transistors) and IGBTs (Insulated-Gate Bipolar Transistors):** Typically used in applications like industrial drives, power supplies, and renewable energy systems (e.g., inverters for solar panels).
- **Discretes:** Suitable for high-current applications due to their robust design, which allows them to handle high thermal loads effectively.

SOT-32 Package Type

- **Low-Power Devices:** Such as low-voltage regulators, operational amplifiers, and comparators, which may not require extensive heat sinks but do benefit from heat dissipation aids.
- **Specialty ICs:** Certain mixed-signal and RF integrated circuits that may generate heat under specific conditions and benefit from improved thermal management.

Board Level Heat Sinks

Features of Board Level Heat Sinks

- Specifically designed for individual components on PCBs, improving soldering fixation. heat dissipation efficiency through direct contact or soldered fixation.
- Compact design suitable for space-constrained applications such as communication devices, power modules, and automotive electronics.
- Can be secured with clips, push pins, thermal adhesive, or screws to enhance contact area and cooling performance.
- Some designs leverage the PCB's copper layers and thermal vias to aid heat conduction and dissipation.

When to Use Board Level Heat Sinks?

- When components on the PCB (such as power ICs, MOSFETs, inductors) experience excessive temperatures and localized cooling is required.
- When overall system cooling methods (like fans or chassis cooling) are insufficient, and additional localized heat dissipation is need require localized cooling.
- When PCB space is limited, making it impractical to use large heat sinks or air cooling systems, necessitating a lightweight cooling solution.

Advantages of Board Level Heat Sinks

- Compact size, ideal for high-density circuit boards
- Can be mounted directly on the PCB without affecting overall system design
- Multiple installation methods available, allowing selection of the most suitable solution based on needs

Overall, Board Level Heat Sinks provide targeted cooling solutions for individual components on PCBs, making them well-suited for high power density electronic devices such as power converters, communication modules, automotive electronics, and industrial control systems.