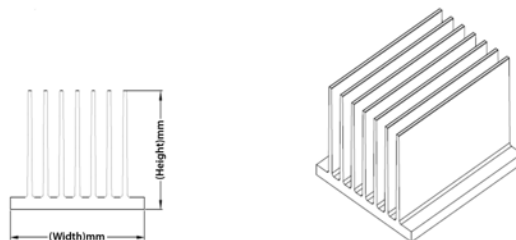


EXTRUDED HEATSINK

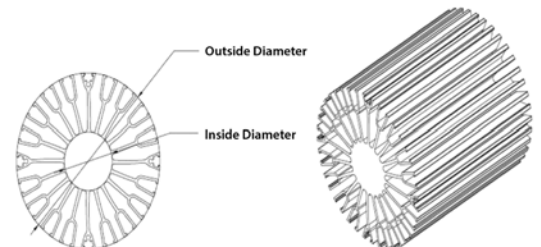
Cofan Extruded Aluminum Heatsinks – Advanced Thermal Management Solutions

An **extruded aluminum heatsink** is a precision-engineered thermal management device designed to dissipate heat from high-power electronic components, ensuring they operate within safe temperature ranges and maintain peak performance. The **extrusion process** involves forcing heated aluminum through a custom die, creating a continuous profile with integrated fins or other features that maximize surface area for heat dissipation.

Cofan's **extruded heatsinks** are engineered for **low, medium, and high-volume production**, making them a cost-effective and high-performance solution for a wide variety of industries — from **consumer electronics** to **aerospace, defense, automotive, and renewable energy systems**.



Extruded Heatsink (Rectangle)



Extruded Heatsink (Circle)

PRODUCTS

OSFP Thermal Solutions

Passive Cooling (Heatsink)

- Bonded Fin Heatsink
- Crimped Heatsink
- Extruded Heatsink
- Skived Fin Heatsink
- Stacked/Zipper Fin Heatsink
- BGA Heatsink

Active Cooling (Fan)

- AC Fans
- DC Fans
- DC Blowers
- DC Impellers
- Crossflow Fans
- Frameless DC Fans

Metal Fabrications

- CNC Machining
- Die Casting
- Extrusion
- Plastic Injection Molding
- Sheet Metal

Cold Plates

Heat Pipes

Vapor Chambers

Air Filtration

Friction Stir Welding

Why Choose Cofan Extruded Heatsinks?

With **over 30 years of expertise** in heatsink manufacturing and more than **10,000 custom extrusion dies** developed, Cofan offers unmatched **design-for-manufacturing (DFM)** capabilities. Our engineering team specializes in creating **custom heatsink profiles** that achieve the optimal balance between **thermal efficiency, mechanical strength, weight reduction, and manufacturing cost**.

Key Advantages

- **High Thermal Performance** – Optimized fin structures and profiles for maximum heat dissipation.
- **Cost-Effective Production** – Economical for both small-batch prototyping and large-scale manufacturing.
- **Design Flexibility** – Capable of producing complex shapes with integrated mechanical features.
- **Material Excellence** – Primarily 6063 aluminum alloy, known for its excellent thermal conductivity, machinability, and corrosion resistance. Other alloys like 6061, 6101, and 1060 available for specialized requirements.
- **Customizable Fin Density & Orientation** – Engineered to enhance airflow efficiency and minimize pressure drop.
- **Aesthetic & Protective Finishes** – Anodizing, powder coating, painting, or plating for visual appeal and environmental protection.
- **Integration Capability** – Can be combined with fans, heat pipes, or vapor chambers for enhanced active cooling.

Applications Across Industries

Cofan's extruded heatsinks are trusted worldwide in **critical, high-reliability environments**:

Electronics & Computing

- **Consumer Devices** – Laptops, gaming consoles, smartphones, and audio amplifiers.
- **Networking** – Routers, servers, and data center switches.
- **High-Performance Computing** – Supercomputers, AI hardware, and GPU clusters.

Industrial & Power Systems

- **Power Electronics** – Inverters, voltage regulators, and power supply units.
- **Industrial Automation** – CNC machinery, robotics, and motor control systems.
- **LED Lighting** – High-output industrial LED cooling.

Telecommunications

- **Cell Towers & Base Stations** – RF amplifiers, antennas, and signal processing units.

Transportation

- **Electric & Hybrid Vehicles** – Battery pack cooling, motor controllers, and onboard chargers.
- **Aerospace & Avionics** – Flight control systems, navigation displays, and onboard entertainment.

Energy & Renewable Systems

- **Solar Power** – Inverters and concentrated photovoltaic cooling.
- **Wind Turbines** – Control electronics and power converters.

Defense & Space Applications

- **Radar & RF Systems** – Airborne and ground-based defense systems.
- **Satellites** – Vacuum-compatible conductive cooling.
- **Electronic Warfare Systems** – Mission-critical reliability.

Medical Equipment

- **Imaging Systems** – MRI, CT scanners, and diagnostic instruments.
- **Precision Electronics** – Patient monitoring and laboratory equipment.

Extrusion Manufacturing Process

The **aluminum extrusion process** starts with heating a solid billet of aluminum alloy and forcing it through a **precision-engineered steel die** using a high-tonnage hydraulic press. The resulting profile matches the die's cross-sectional design, allowing the creation of **complex fin geometries, integrated mounting features, and custom mechanical structures**.

Die Profile Categories

- **Solid Dies** – Most economical; ideal for simpler shapes.
- **Semi-Hollow Dies** – Common for heatsinks with open fins.
- **Hollow Dies** – Used for designs requiring enclosed features like liquid cooling channels.

Extrusion Press Capabilities

- **Small to Medium Presses (500–1,500 tons)** – For compact profiles such as CPU/GPU heatsinks.
- **Medium to Large Presses (1,500–3,500 tons)** – For intricate profiles used in LED lighting, industrial electronics, and moderate power systems.
- **Large Presses (3,500+ tons)** – For very large profiles up to **22" wide** and **9" tall**, used in heavy-duty industrial and specialized automotive applications.

Engineering & Design Support

Cofan's engineering team offers **full product design assistance**, including:

- **Custom Profile Development** – Designed to meet precise thermal and spatial requirements.
- **Computational Fluid Dynamics (CFD) Simulation** – Virtual testing to validate cooling performance before production.
- **Rapid Prototyping** – Via CNC machining or Cofan's proprietary **Skiving Process**.

Fabrication & Finishing Options

We provide **flexible supply chain solutions** to meet customer needs:

- **Raw Extrusion Supply** – Full-length or cut-to-length bars.
- **Build-to-Print Machining** – Precision CNC machining (including 5-axis), drilling, tapping, and assembly.
- **Surface Treatments** – Anodizing, chromating, powder coating, painting, and plating.
- **Marking & Branding** – Silk-screening, laser etching, or mechanical engraving.
- **Turnkey Assembly** – Electromechanical assembly, testing, packaging, and quality assurance.

Performance Enhancement Features

- Integrated screw bosses to reduce secondary machining.
- PCB slots or serrated hardware channels for direct component mounting.
- Optimized airflow channels for **natural or forced convection**.
- Ability to integrate **liquid cooling tubes** for hybrid cooling solutions.

