

Heat Sink Technology with World-Class Quality

As the leader in superior design and manufacture of heat sinks, Sapa Extrusions has product solutions that offer optimal part geometry with increased thermal efficiency. We serve the computer, electrical, automotive, telecommunications, medical, LED, military and power electronics industries.

Standard Heat Sinks

Sapa has capabilities to produce **custom heat sinks with fin ratios up to 6:1** that are commonly used for thermal management applications. These heat sinks can be used in either a natural or forced convection environment. Custom surface treatments are available.

High Fin Ratio and Thin Fin Heat Sinks

Sapa Extrusions has advanced technology to achieve **high fin ratios up to 16:1 and thin fins down to .30" thickness**. Our high aspect ratio products provide solutions for designers of high-performance electronics with demanding thermal applications. When extra fin surface is needed for heat dissipation without an increase in heat sink size, we can provide a more efficient heat sink design with higher performance per gram of unit mass. As a result, total system heat dissipated and power is increased.

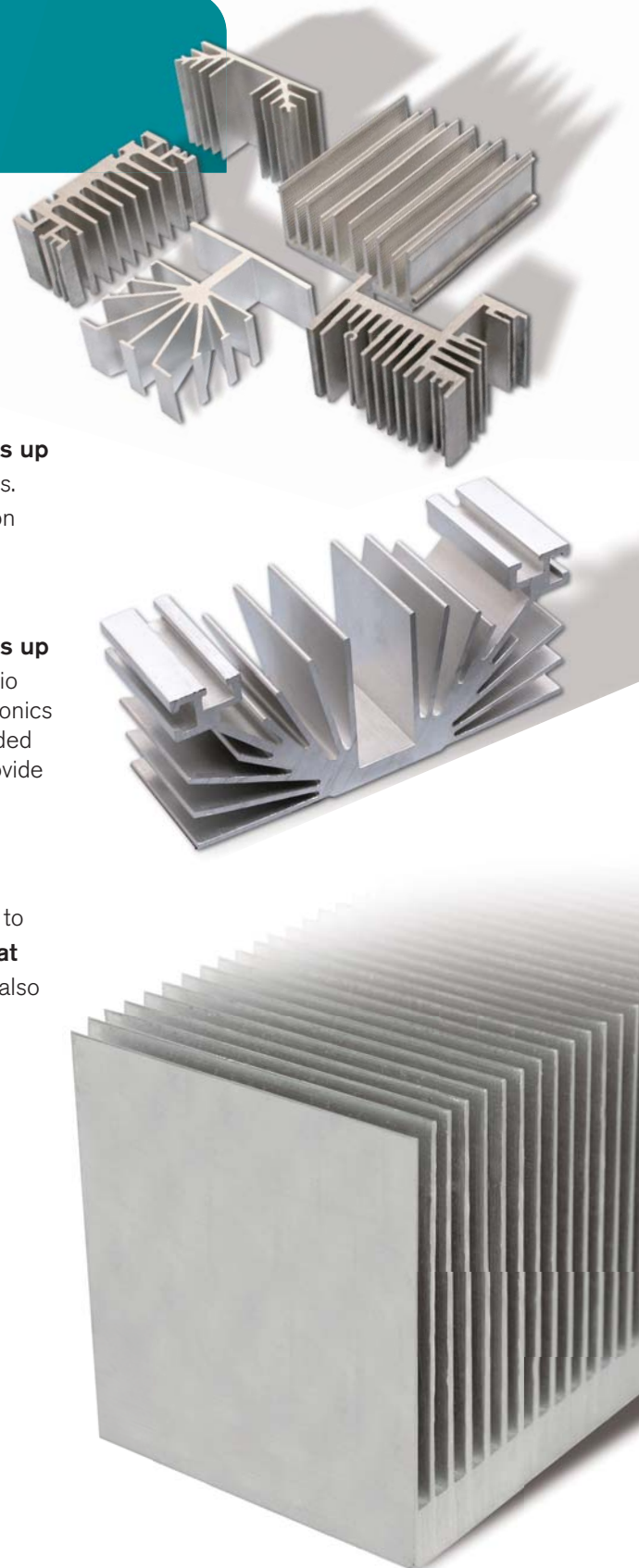
Our team of product development engineers works closely with you to understand the application, design goals and **ensure that each heat sink is designed to fit your needs**. Thermal Analysis Modeling is also available at Sapa Technology Centers.

Sapa's range of capabilities for symmetrical designs includes:

Circle Size Up To	Fin Ratio Up To	Circle Size Up To	Fin Thickness Down To
7.5"	16:1	4"	0.30"
10"	10:1	10"	0.40"
12"	8:1	12"	0.60"
16"	6:1		

Fin Ratio = Area of Gap / (Gap Width)²

For larger circle sizes, fin thickness may need to be increased, depending on profile configuration. These ranges are only a guide; contact us to review your custom heat sink requirements.



Advanced Cooling Technology

Sapa has developed a new generation of **Liquid Cooling Devices** that utilizes the area above and below the heat sink far more efficiently. These devices can bring you substantial savings. Internal chambers are created by the use of machining and Friction Stir Welding (FSW) methods. The FSW process can also be used to create **Ultra Wide Heat Sinks** or combining heat sinks with other complex shapes.

Other Thermal Management Extruded Shapes

Included are custom heat sink shapes with and without serrated fins, **Bonded Fin Bases, Heat Sink Enclosures and Motor Housings** in solid and hollow shape designs. Bonded Fin Bases are available in up to 16" width, thickness up to and over 1" and flatness of .004"/in.

Available Alloys and Tempers

The most common heat sink alloy is 6063-T5 due to its thermal and physical property characteristics. We also offer 6060 and a **special 6xxx alloy "C57B"** with minimal difference in machinability and an average 2% IACS increase in electrical conductivity.

Thermal Conductivity

Temperature °C (°F)	Thermal Conductivity W/m-K	
	C57B -T5 (Average)	6063 -T5 (Average)
23°C (73.4°F)	207	203
50°C (122°F)	212	208
100°C (212°F)	218	214
150°C (302°F)	221	218
200°C (392°F)	224	220
250°C (482°F)	226	223

Fabricating Services and Finishes

Extensive facilities for fabrication are fully integrated with the extrusion process to produce both semi-finished and fully finished components and assemblies. Sapa Extrusions offers complete capabilities in:

- CNC Machining Centers
- Precision saw cutting
- Deburring

Available surface finishes include clear and color anodize, chemical conversions coatings and powder coat.

Contact Us

A company that is easy to do business with, Sapa Extrusions is dedicated to understanding your needs and developing long term relationships.

Sapa Extrusions

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