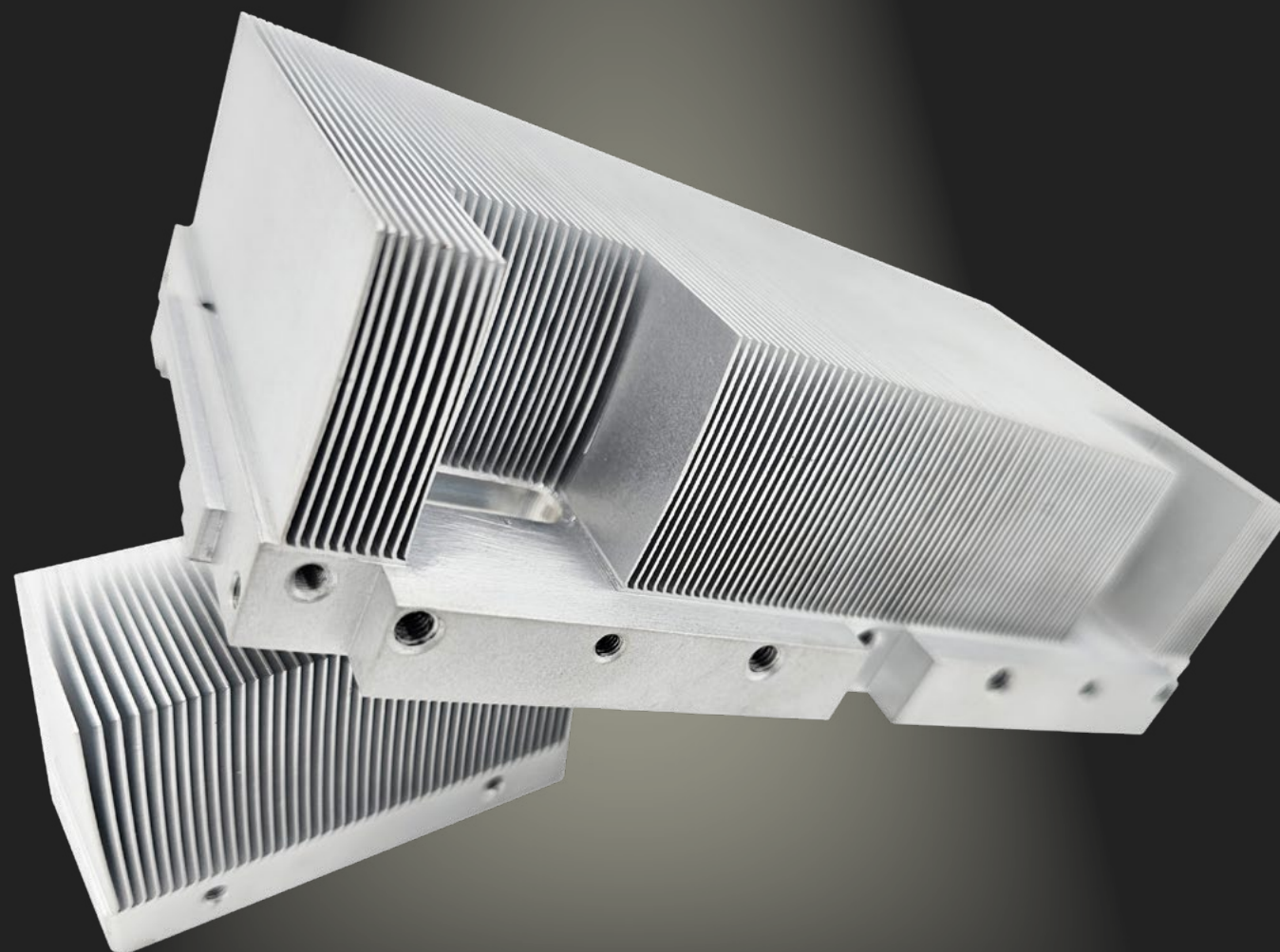


A THERMAL SOLUTION PROVIDER

SKIVED FIN HEATSINK OVERVIEW

SIMULATION TO PROTOTYPE

PROTOTYPE TO PRODUCTION



SKIVED FIN HEATSINK

A skived heatsink, also known as a skive fin or machined heatsink, is a high-performance thermal solution designed to **dissipate heat from electronic components**. Unlike extruded or stamped heatsinks, skived heatsinks are crafted by precision machining, where thin fins are carved directly from a solid block of metal, typically aluminum or copper.

This process creates a seamless connection between the base and fins, ensuring **excellent thermal conductivity and durability**. The closely spaced, thin fins provide a large surface area for efficient heat dissipation, making skived heatsinks ideal for high-density and high-power applications.

Their precise construction allows customization to meet specific cooling needs, making them widely used in industries such as automotive, aerospace, telecommunications, and computing. Skived heatsinks excel in delivering reliable thermal management in demanding environments.



BENEFITS OF SKIVED FIN HEATSINK

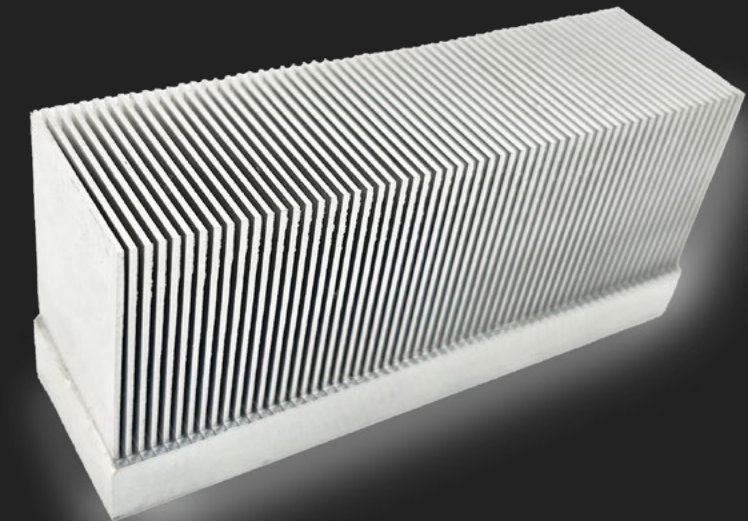


- High aspect ratio (Fin Density) >50:1 in both Copper and Aluminum without CNC machining. wire EDM or extruding
- **Lower tooling costs**
- No minimum material cost or production runs
- Preferred technology for replacing obsolete, out-of-stock or low-volume Al extrusion profiles with no material minimums
- Unitary fin-base construction (no welding, epoxy or brazing)
- May be integrated with heat pipes liquid cooling and fans for maximum thermal performance
- Eliminates voids, delamination and inhomogeneous
- **High-density power cooling** applications
- Economical Copper fabrication
- **Quick sample turnaround times** with optimum performance

TECHNOLOGY REPLACED BY SKIVED FIN HEATSINKS

Extruded Heatsinks

Preferred technology for replacing obsolete, out-of-stock, low-volume Al extrusion profiles with no material minimum or tooling. Skived fin can produce thermally equivalent and near net mechanical equivalency.

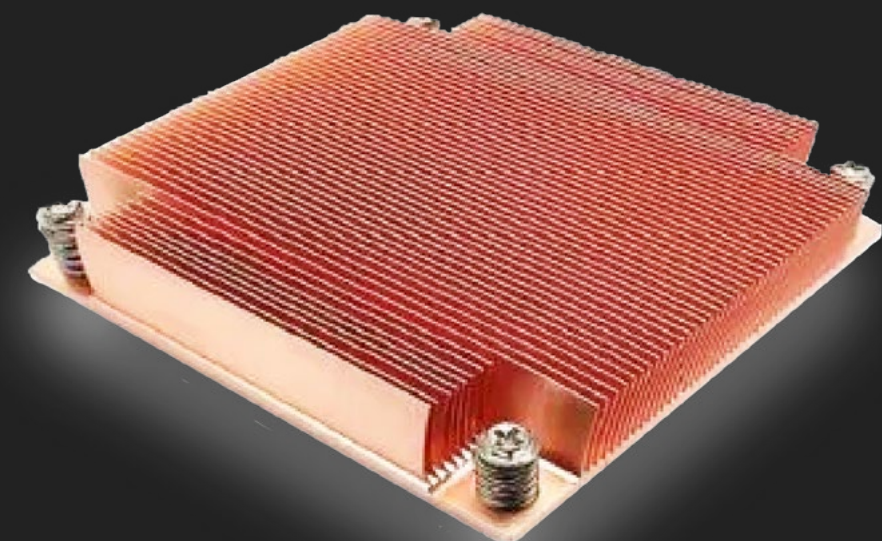


Bonded & Folded Fin Heatsinks

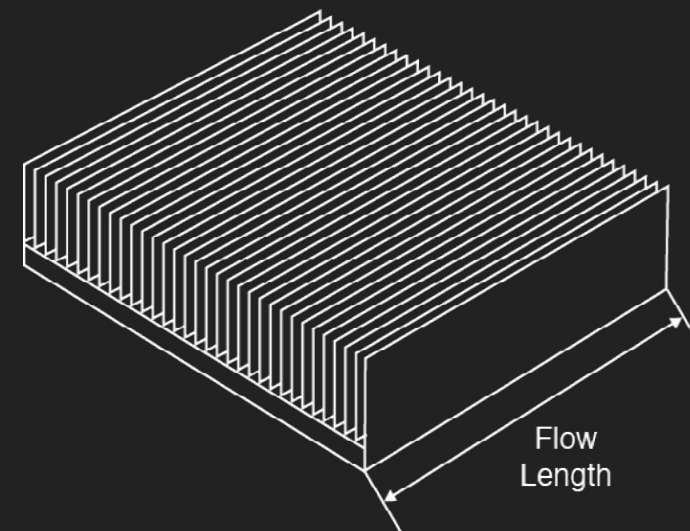
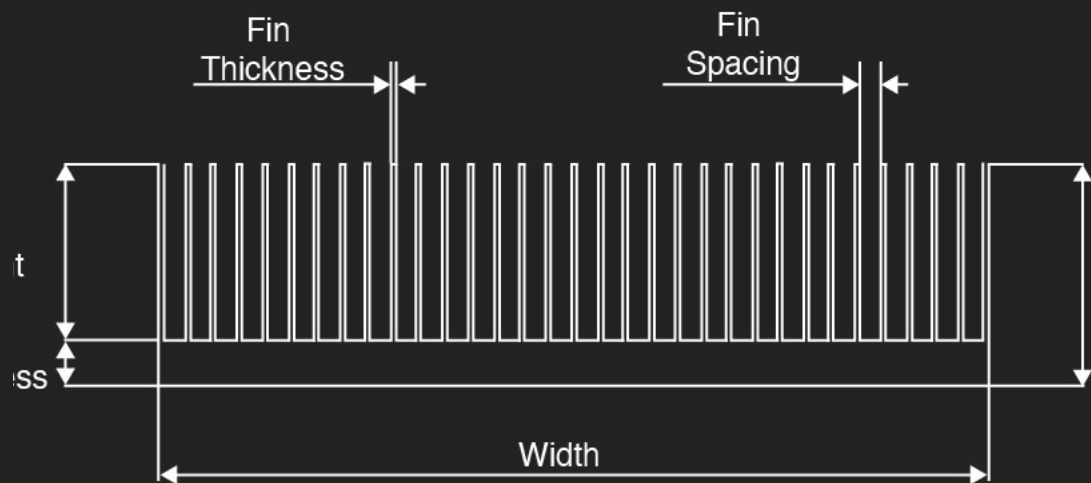
The skived fin process is able to create the same fin density as bonded and folded fin technology with improved thermal performance. The improved performance comes as the fins and base plate are integrated as a unitary structure and not bonded with epoxy or brazed creating the optimum thermal path.

Brazed Folded Fin Heat Exchanger Chassis

By integrating the skived fin heat exchanger (as a replacement for folded fins) into the base structure of the chassis, the brazing process can be eliminated. The skived Fin manufacturing process creates the low thermal impedance conduction path without a secondary operation.



STANDARD HIGH POWER ELECTRONICS HEATSINKS



Aluminum	Inches		Metrics(MM)	
	Min	Max	Min	Max
*Flow Length	0.39	23.62	10	600
*Width	1.97	62.99	50	1600
Fin Height	0.20	4.72	5	120
Fin Thickness	0.004	0.08	0.1	2
Fin Gap	0.004	2.00	0.2	50
Base Thickness	0.02	1.38	0.5	35
Alloy	1060,1100,6063,6101			

Copper	Inches		Metrics(MM)	
	Min	Max	Min	Max
*Flow Length	0.39	11.81	10	300
*Width	1.97	62.99	50	1600
Fin Height	0.20	2.72	5	69
Fin Thickness	0.004	0.039	0.1	1
Fin Gap	0.004	1.38	0.1	35
Base Thickness	0.02	1.38	0.5	35
Alloy	C110			

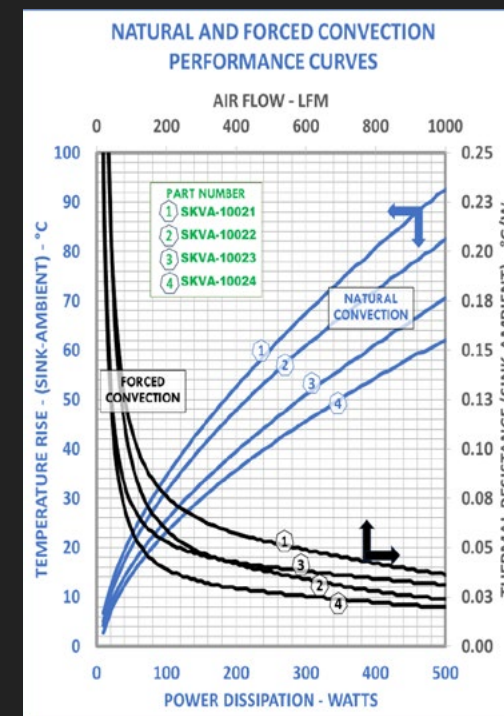
* Maybe Combined with Cofan's Hybrid Heatsink Manufacturing Process - Friction Stir Welding to produce increased flow lengths and widths.

SKIVED POWER FIN HEATSINK ALUMINUM HEATSINK SERIES

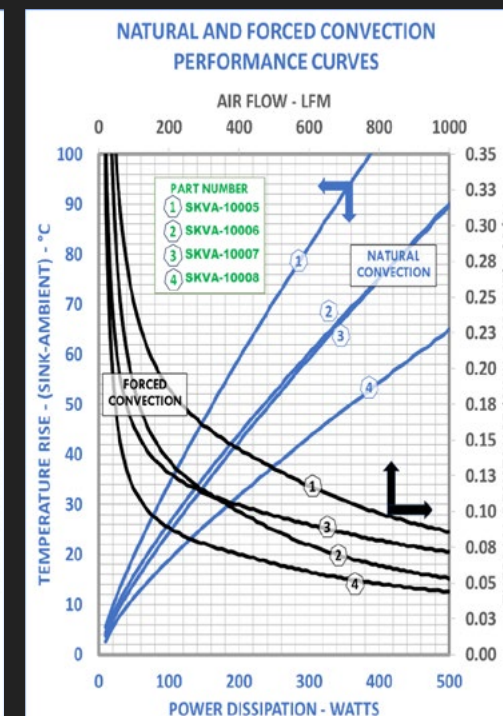
These Heatsinks are manufactured using Cofan's Skived Fin Manufacturing Technology. This one-piece, integrated construction method, ensures optimal thermal performance by maintaining a monolithic, seamless heat path between the heat-source located on the thermal base and the heat-dissipating fins.

Natural Convection Optimized Product Series

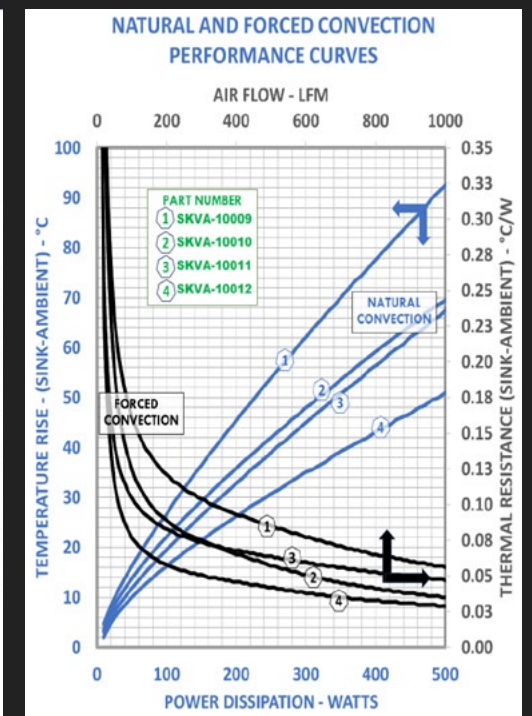
- Heatsink Geometry Features Optimized using CFD for Maximum Thermal Performance
 - Fin Spacing, Fin Thickness, and Base Thickness Refined for Natural Convection Applications
- Fan Selection Matched to Heatsink Pressure Drop
- Constructed from Electrical Grade, Ultra-High Thermally Conductive Aluminum
- Custom Machining and Design for Manufacturing Recommendations Available from our Design Engineering Staff
- Custom Designs of Width and Length Readily Available.



4.72 Wide Series

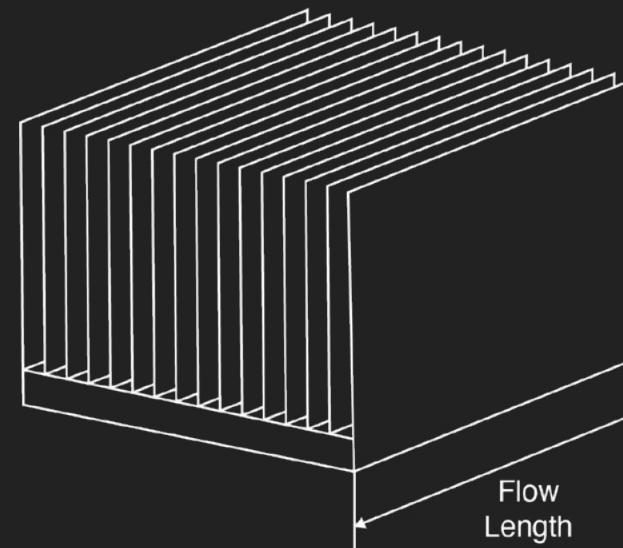
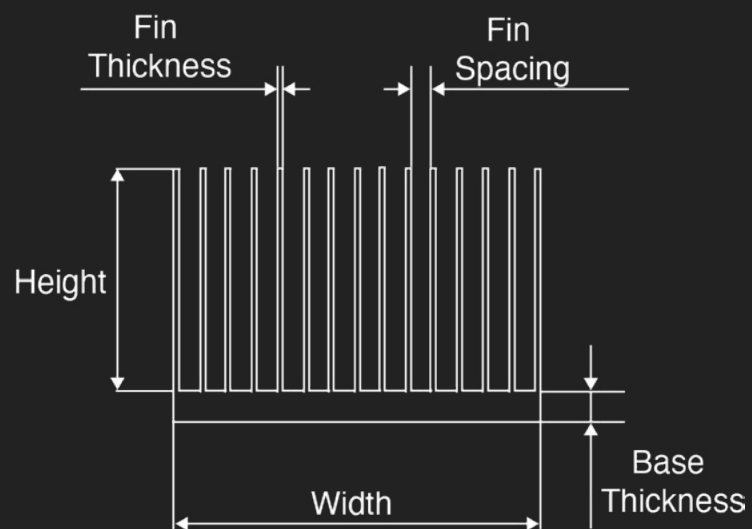


7.87 Wide Series



10.87 Wide Series

SKIVED POWER FIN HEATSINK ALUMINUM HEATSINK SERIES



Natural Convention Part Number and Specification Table

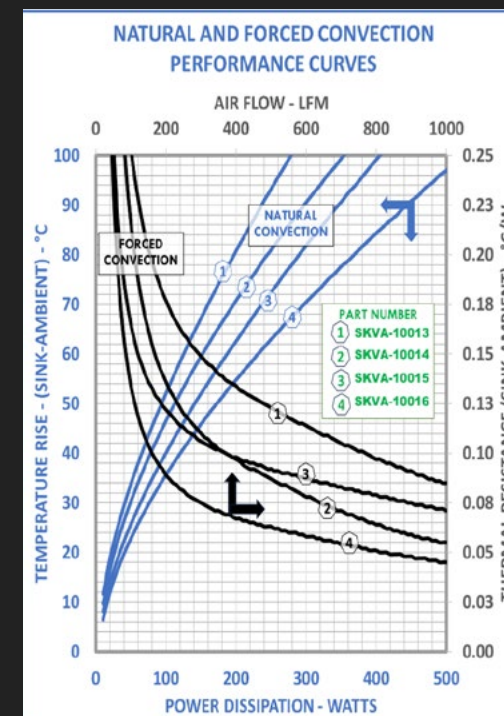
Part Number	Width		Height		Flow Length		Fin Thickness		Fin Spacing		Base Thickness		Number Of Fins	Weight	
	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm		lbs	kg
SKVA-10001	4.78	121.41	2.86	72.64	7	177.8	0.05	1.27	0.27	6.73	0.5	12.7	16	2.9	1.3
SKVA-10002					12	304.8								5.1	2.3
SKVA-10003			5.22	132.59	7	177.8								4.2	1.9
SKVA-10004					12	304.8								7.2	3.3
SKVA-10005	7.87	199.90	2.86	72.64	7	177.8	0.05	1.27	0.34	8.51	0.5	12.7	20	4.1	1.9
SKVA-10006					12	304.8								7.1	3.2
SKVA-10007			5.22	132.59	7	177.8								5.7	2.6
SKVA-10008					12	304.8								9.8	4.5
SKVA-10009	10.78	273.81	2.86	72.64	7	177.8	0.05	1.27	0.32	8.13	0.5	12.7	30	7.4	3.4
SKVA-10010					12	304.8								10.4	4.7
SKVA-10011			5.22	132.59	7	177.8								9.5	4.3
SKVA-10012					12	304.8								14.6	6.6

SKIVED POWER FIN HEATSINK ALUMINUM HEATSINK SERIES

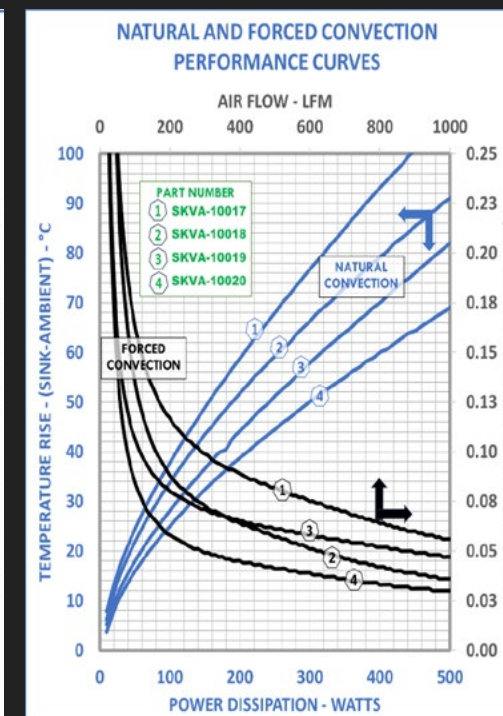
These Heatsinks are manufactured using Cofan's Skived Fin Manufacturing Technology. This one-piece, integrated construction method, ensures optimal thermal performance by maintaining a monolithic, seamless heat path between the heat-source located on the thermal base and the heat-dissipating fins.

Forced Convection Optimized Products Series

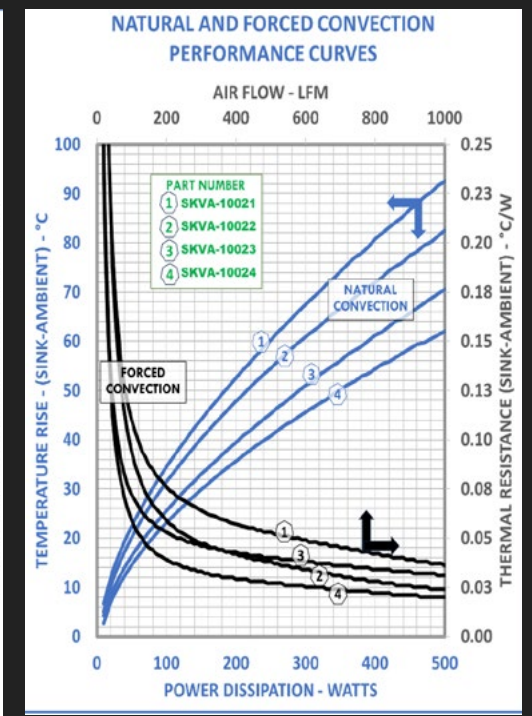
- Heatsink Geometry Features Optimized using CFD for Maximum Thermal Performance
 - Fin Spacing, Fin Thickness, and Base Thickness Refined for Forced Convection Applications
- Constructed from Electrical Grade, Ultra-High Thermally Conductive Aluminum
- Custom Machining and Design for Manufacturing Recommendations Available from our Design Engineering Staff
- Custom Designs of Width and Length Readily Available



4.72 Wide Series

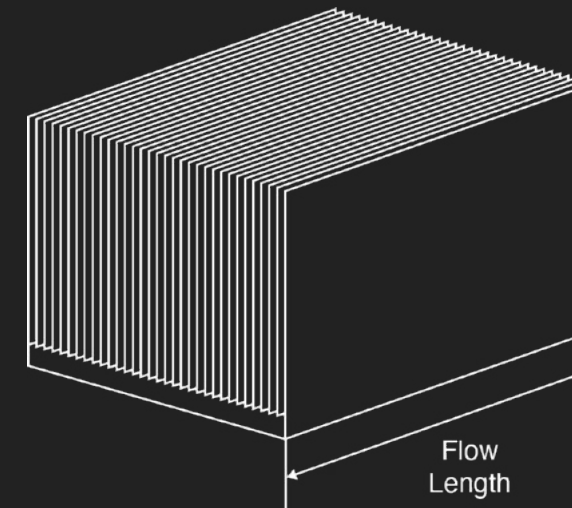
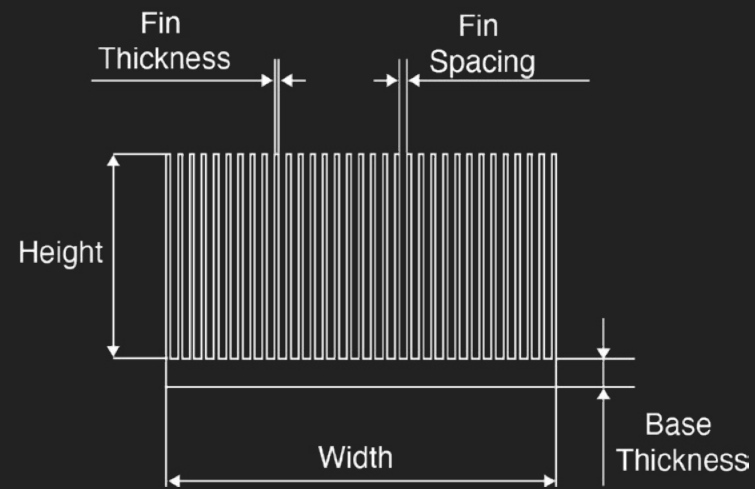


7.87 Wide Series



10.87 Wide Series

SKIVED POWER FIN HEATSINK ALUMINUM HEATSINK SERIES



Forced Convection Part Number and Specification Table

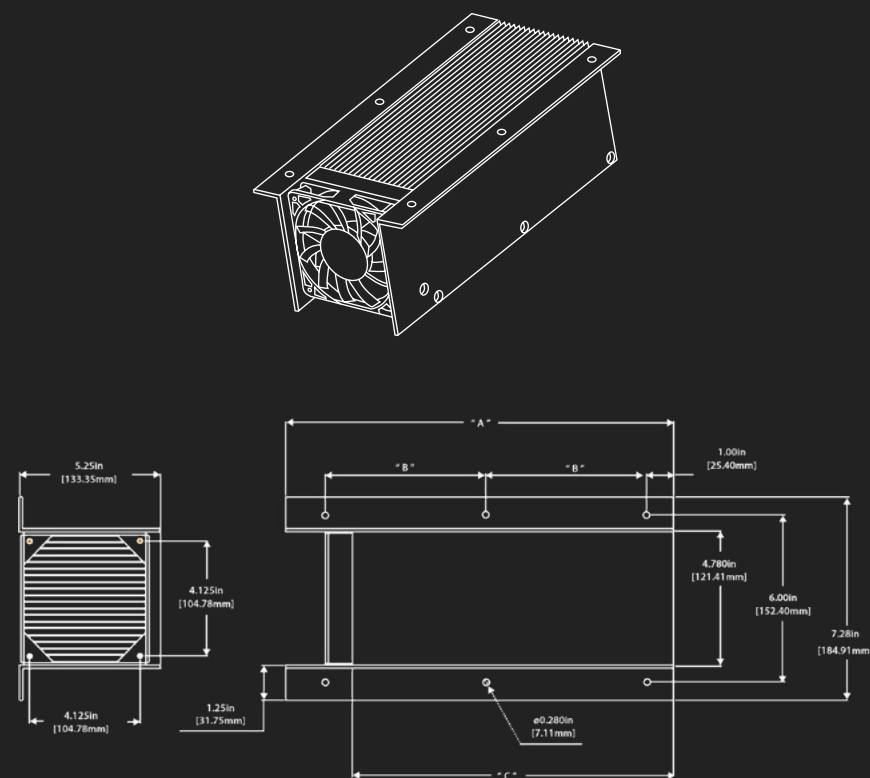
Part Number	Width		Height		Flow Length		Fin Thickness		Fin Spacing		Base Thickness		Number Of Fins	Weight	
	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm		lbs	kg
SKVA-10013	4.78	121.41	2.86	72.64	7	177.8	0.05	1.27	0.19	4.83	0.5	12.7	20	3.2	1.5
SKVA-10014					12	304.8								56	2.5
SKVA-10015			5.22	132.59	7	177.8								4.9	2.2
SKVA-10016					12	304.8								8.3	3.8
SKVA-10017	7.87	199.90	2.86	72.64	7	177.8	0.05	1.27	0.20	5.08	0.5	12.7	30	4.9	2.2
SKVA-10018					12	304.8								8.5	3.8
SKVA-10019			5.22	132.59	7	177.8								7.4	3.3
SKVA-10020					12	304.8								12.6	5.7
SKVA-10021	10.78	273.81	2.86	72.64	7	177.8	0.05	1.27	0.19	4.83	0.5	12.7	45	7.3	3.3
SKVA-10022					12	304.8								12.5	5.7
SKVA-10023			5.22	132.59	7	177.8								10.9	4.9
SKVA-10024					12	304.8								18.7	8.5

SKIVED POWER FIN HEATSINK FAN ASSEMBLY SERIES

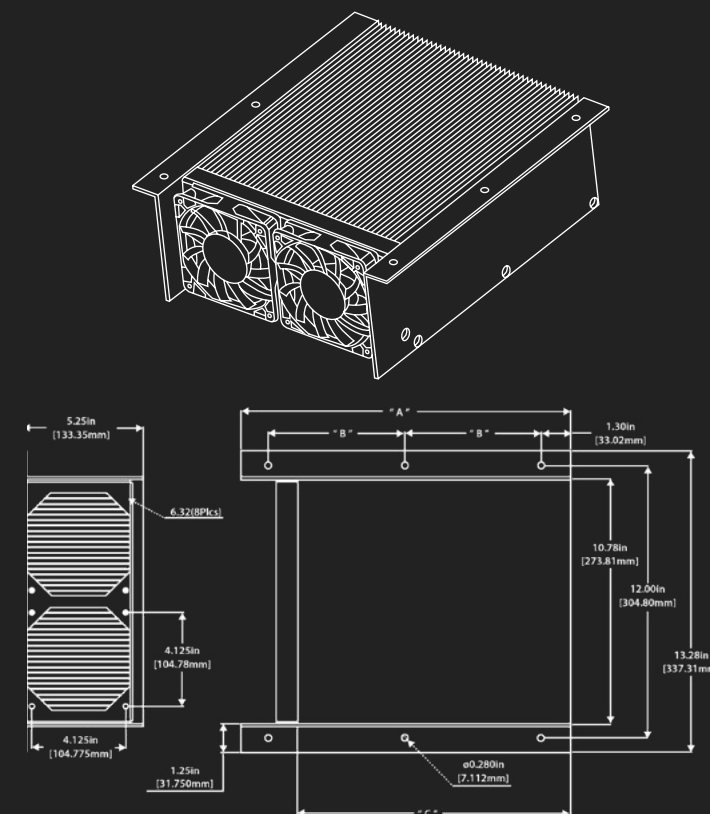
These Heatsinks are manufactured using Cofan's Skived Fin Manufacturing Technology. This one-piece, integrated construction method, ensures optimal thermal performance by maintaining a monolithic, seamless heat path between the heat-source located on the thermal base and the heat-dissipating fins.

Forced Convection Standard Product Modular Series

- Heatsink Geometry Features Optimized using CFD for Maximum Thermal Performance
 - Fin Spacing, Fin Thickness, and Base Thickness Refined for Forced Convection Applications
- Fan Selection Matched to Heatsink Pressure Drop
- Constructed from Electrical Grade, Ultra-High Thermally Conductive Aluminum Alloy
- Custom Machining and Design for Manufacturing Recommendations Available from our Design Engineering Staff.



Single Fan Series



Double Fan Series

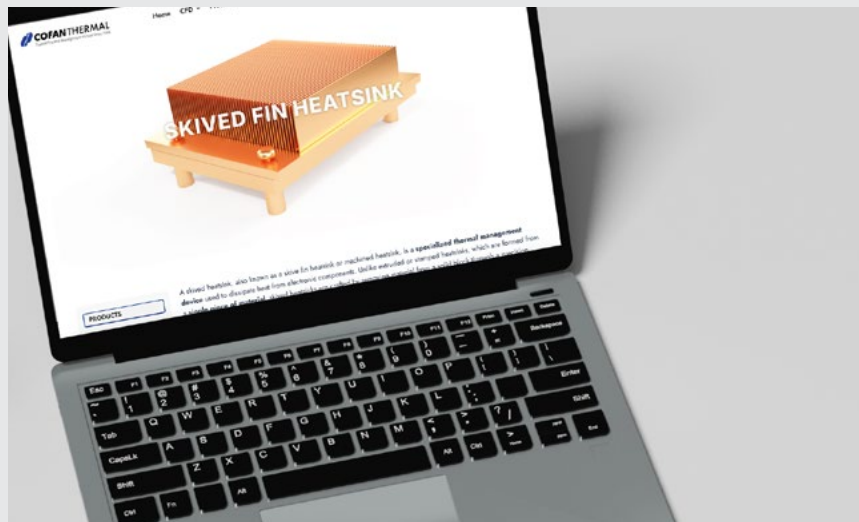
SKIVED POWER FIN HEATSINK FAN ASSEMBLY SERIES

			"A"		"B"		"C" Heatsink Length		Total Heatsink Surface Area		Thermal Resistance	Weight	
Part Number*	Sereies Type	Fan Type	Inches	mm	Inches	mm	Inches	mm	Inches	mm	°C/W	lbs	kg
SKVAFS-10025	Single Fan	120mm, DC, Ball Bearing	7.00	177.8	2.50	63.5	4.50	114.3	742.5	18,860	0.1	5.3	2.40
SKVAFS-10026			9.50	241.3	3.75	95.3	7.00	177.8	1,510.0	38,481	0.09	7.2	3.25
SKVAFS-10027			12.00	304.8	5.00	127.0	9.50	241.3	1,567.0	39,815	0.07	9.1	4.11
SKVAFS-10028			14.50	368.3	6.25	158.8	12.00	304.8	1,980.5	50,305	0.05	10.9	4.96
SKVAFS-10029	double Fan		14.59	370.6	6.00	152.4	12.00	304.8	4,536.0	115,214	0.028	20.6	9.36
SKVAFS-10030			16.59	421.4	7.00	177.8	14.00	355.6	5,292.0	134,417	0.025	23.8	10.78
SKVAFS-10031			18.59	472.2	8.00	203.2	16.00	406.4	6,048.0	153,619	0.024	26.9	12.20

- * Note:
- 1. Fans are ordered separately and not included in part number.
 - 2. Cofan recommends fan part number: F-1225HH12B-R02 (25mm Fan Thickness, 12V, Duall Ball Bearing, 3200 RPM, No Connector; 2-Wire@4" Length)
 - 3. Contact Factory for Tolerances and Dimensional Modifications or Customer Designs

SKIVED FIN HEATSINK APPLICATION

Computers & Electronic Components



- CPU, BGA, GPU & LGA's processors
- Server cooling (Fan pack assemblies)
- Network routers
- Notebooks, memory products

LED Lighting



- Sports stadium illumination
- High bay & street lighting
- Automotive
- Phototherapy
- UVC Sterilization
- UVC Curling
- Horticulture
- Signs & displays (Architectural)

Defense & Aerospace



- Chassis with integrated heat exchangers (May eliminate fin brazing operations)
- Metal core PCB's

SKIVED FIN HEATSINK APPLICATION

Telecommunications



- 5G base stations
- Antennas arrays
- Cabinet & enclosures
- Backhaul fiber optic
- Modules
- Radio unit

Industrial Equipment & Components



- Variable speed motor controls
- Uninterruptible power supplies
- Wind turbines & generators
- Air-to-air heat exchangers
- EV batteries & recharging
- Optoelectronics & lasers
- LIDAR Systems
- Photovoltaic
- IGBT Inverters
- Energy storage
- Traction drive system
- Smart grid systems
- Power microgrids
- Sic MOSFET's
- LASER's & photonics
- Solar

SKIVED FIN HEATSINK PROCESSES

Special Features Options Integrated Into Skiving Process

- Screw/Bolt Head Countersink Reliefs
- Mounting Flanges
- Mounting/ Bracket Channels

Secondary CNC Machining Operations

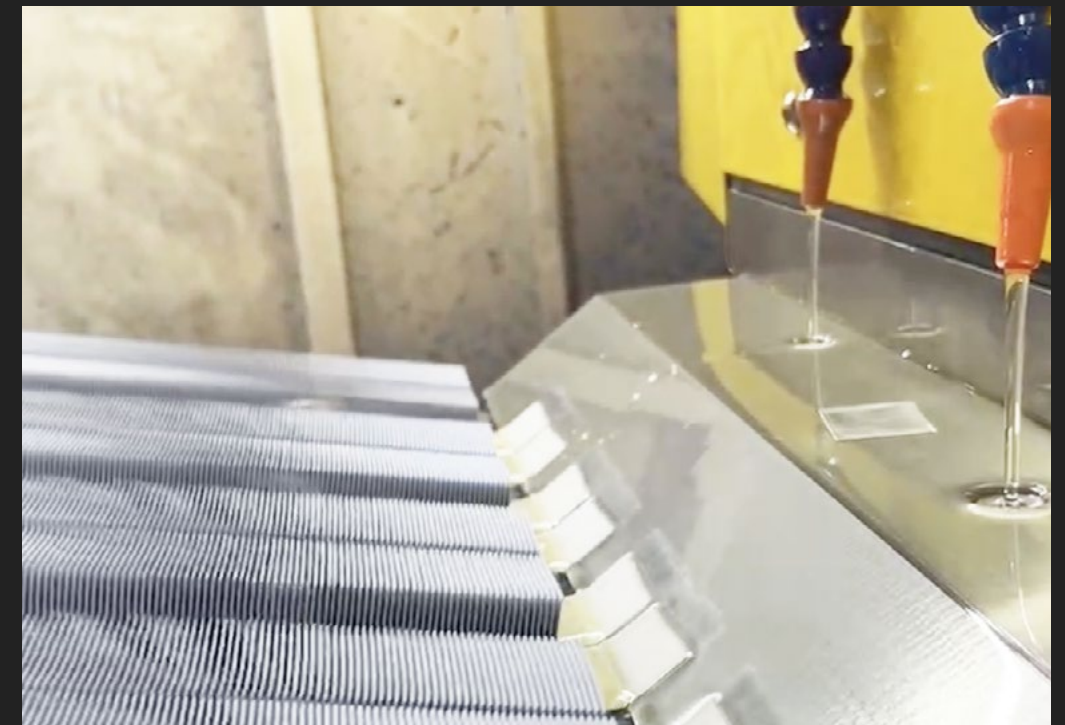
- CNC Machining (Tapped Holes, Mounting Bosses, recessed Cavities, etc.)
- Rounded Edges for Safe Handling

Finishing Operations

- Anodizing
- Plating (Chem Film, Nickel, Chrome, etc.)

Value Added Operations/ Capabilities

- Mounting Hardware (Plus Pins, Captive Screw Assemblies) Attachment Methods
- Thermal Interface Material
- Fan/ Heatsink Assemblies
- Integrated Heatpipes, Vapor Chambers and Liquid Cooling
- Sheet Metal Shrouds for Ducted Airflow
- Electromechanical Assembly



CERTIFICATIONS

- ITAR
- ISO 9001:2015
- ISO 14001:2015
- ISO 45001:2020
- IATF 16949:2016
- Reach-SVCH Statement
- RoHS Compliance Certificate

ISO 9001:2015
COFAN Dongguan



ISO 9001:2015
COFAN Taiwan



ISO 14001:2015
COFAN Dongguan



ISO 14001:2015
COFAN Taiwan



ISO 45001:2020
COFAN Dongguan



IATF 16949:2016
COFAN Taiwan



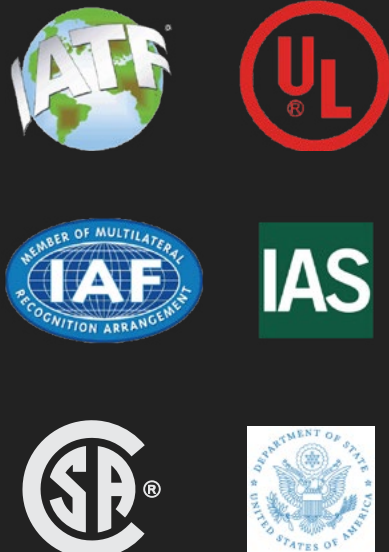
ITAR
COFAN USA

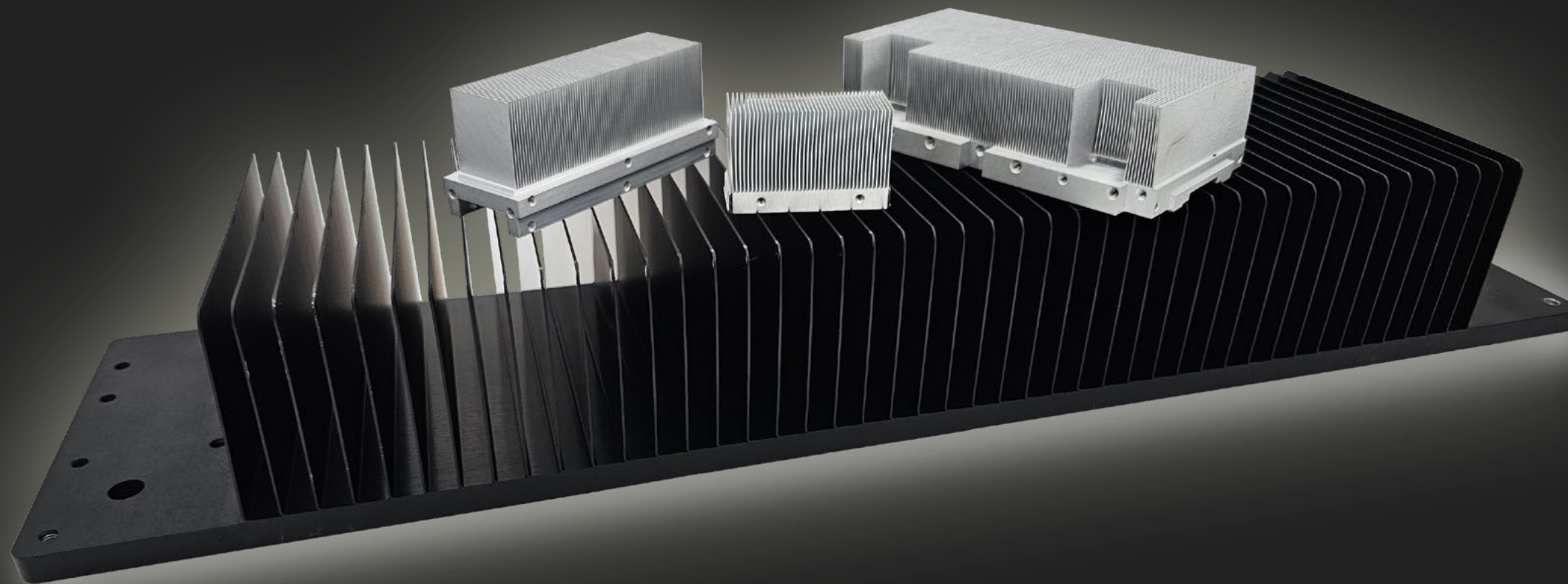


Reach-SVCH
Statement



RoHS-Compliance Certificate
Cofan Taiwan





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