

High Performance Liquid Cooled fanSINK™



ATS Part#: **ATS-LQHS-84000 Series** [see height options in table below]

Description: 84.00 x 84.00 Heat Sink in heights of 25.8mm, 30.8mm
High Performance Liquid Cooled fanSINK™ with Push Pin Attachment

Max. Component Size: 70.00 x 70.00 mm

Heat Sink Type: fanSINK, liquid cooled, (fan not included)

Heat Sink Attachment: PEM, spring and screw



Image for illustration purposes only.

Features & Benefits

- » Thermal performance is at least 3x better than the exact same size fanSINK without the liquid loop.
- » Integrated HEX, hence, the liquid loop may require one less component.
- » Stainless steel screw fan attachment ensures dependable long-term fan to heat sink assembly. 4-40 thread screws are supplied in 4 lengths (1/2", 3/4", 7/8", 1").
- » Fan assembly hole pattern is 61.5 mm C-C (center to center) - see Fig. 1
- » Screw PEM push pin attachment included
- » Includes Thermal Interface Material (TIM) centered on base.
- » Recommended through hole size in PCB is 3.00 mm
- » Fluid Types: Water, Propylene Glycol, Refrigerants, Dielectrics, Mineral Oil, EG Mixtures

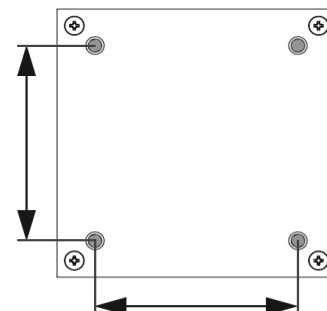
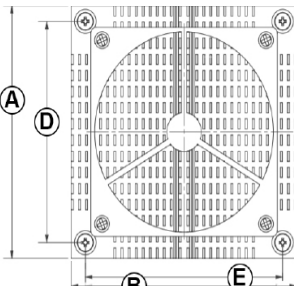


Fig. 1 - Measured dimensions of fan assembly hole pattern

Heat Sink Part No	L (mm)	W (mm)	H (mm)	Total Thermal Resistance (°C/W)	Pressure Drop Liquid Side (Pa / psi)
ATS-LQHS-84025-C1-R0	84.0	84.0	25.8	0.05	10.0 (1.42)
ATS-LQHS-84030-C1-R0	84.0	84.0	30.8	0.05	10.0 (1.42)

*Thermal resistance and pressure drop data is for at 1.89 LPM(0.5GPM)
*Performance includes fan based on our suggested fan options

Product Details

SCHEMATIC IMAGE	Dimension A	Dimension B	Dimension C	Dimension D	Dimension E	TIM	Finish
	84 mm	84 mm	[see heights in table above]	65 mm	65 mm	Chomerics T766	Black

NOTES:

- 1) Fan not included. Fan type is specific to individual customer requirements and needs to be independently sourced.
- 2) Dimensions A and B refer to heat sink size.
- 3) Dimension C is the heat sink height from the bottom of the base to the top of the fin field.
- 4) Dimensions D and E refer to the push pin hole pattern C-C (center to center)
- 5) Thermal performance data are provided for reference only. Actual performance may vary by application.
- 6) ATS reserves the right to update or change its products without notice to improve the design or performance.
- 7) ATS certifies that this heat sink assembly is RoHS-6 and REACH compliant.
- 8) Contact ATS to learn about custom options available.

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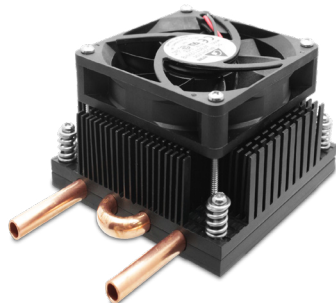
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Suggested Fan Options

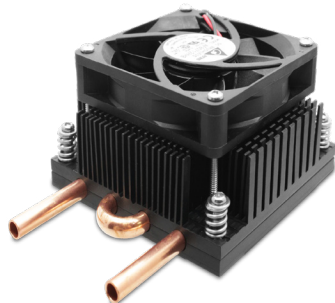
Mfg	P/N	Fan Size (mm)	Rated Voltage (V)	Noise (dB / dB-A)	Airflow (CFM)	Pressure (in H ₂ O)	Lead Wires
Delta	AFB0712VHB-F00	70 x 70 x 15	12	44.0	45.5	0.306	3 Wire
Delta	AFB0712VHD	70 x 70 x 20	12	44.3	46.9	0.285	2 Wire
Delta	AFC0712DD-TP10	70 x 70 x 20	12	44.3	46.9	0.285	4 Wire
Orion	OD7020-12HB	70 x 70 x 20	12	41.5	41.0	0.260	2 Wire
Orion	OD7025-12HBXC	70x 70 x 25	12	49.5	60.0	0.460	2 Wire
Sunon	ME70151V1-000U-A99	70 x 70 x 15	12	31.5	27.0	0.110	2 Wire
Sunon	PF70201V1-000U-A99	70 x70 x 20	12	41.5	43.0	0.280	2 Wire

Thermal Resistance Comparison of Similar Heat Sinks: Liquid Cooled vs. Air Cooled

Liquid Cooled



ATS-LQHS-84025-C1-R0
84.0 x 84.0 x 25.8mm
Thermal Resistance: 0.05°C/W



ATS-LQHS-84030-C1-R0
84.0 x 84.0 x 30.8mm
Thermal Resistance: 0.05°C/W

Air Cooled



ATS-61800W-C2-R0
84.0 x 84.0 x 24.5mm
Thermal Resistance: 0.38°C/W



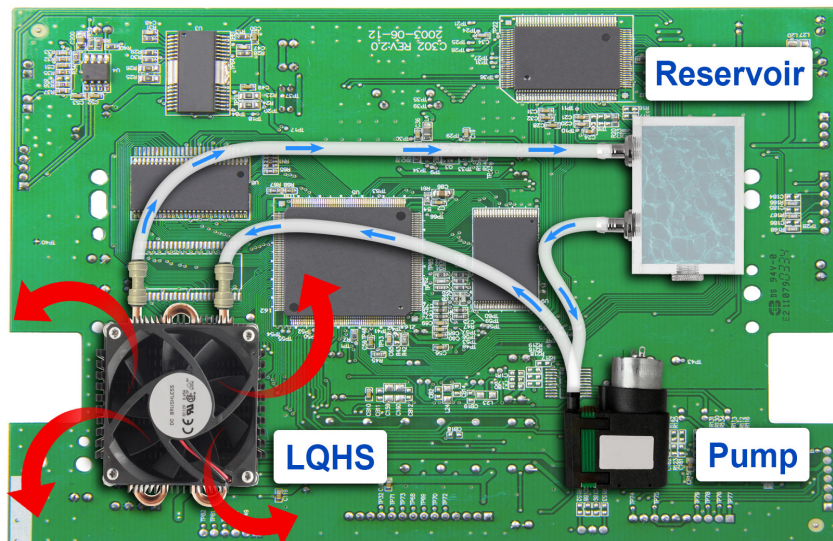
ATS-61800W-C2-R0
84.0 x 84.0 x 24.5mm
Thermal Resistance: 0.38°C/W

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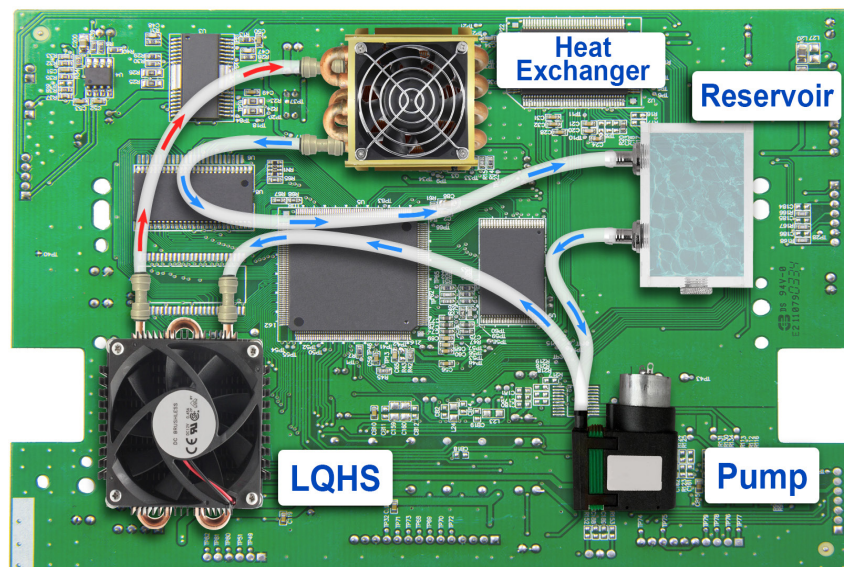
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Example Liquid Loop Configurations and Components

This configuration relies on the LQHS' integrated heat exchanger. This reduces the cost and complexity of this liquid cooling solution and features a thermal resistance of 0.05°C/W.



For very high heat applications, a heat exchanger can be included in the liquid loop. This will with veThis configuration relies on the LQHS' integrated heat exchanger. This reduces the cost and complexity of this liquid cooling,



LQHS Tube Type & Diameter

- Copper Tube
- Internal Diameter: 4.826 mm
- Outside Diameter 6.35 mm
- Tube Length: 488.5 mm

Connectors

- John Guest Polypropylene Equal Straight Connector 1/4"



Pumps

- Thomas 1420

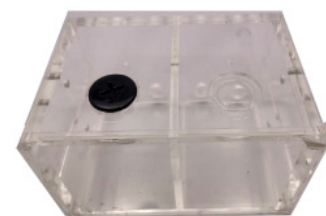


- BOSCH PAD2 Electric Coolant Pump



Reservoir

- XSPC Dual 5.25" Acrylic



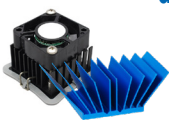
All non-ATS products are examples only and do not reflect a recommendation for these products

BGA Heat Sink - High Performance fanSINK™ Series

PART NUMBER	HEAT SINK DIMENSIONS L x W x H (mm)	COMPONENT DIMENSIONS L x W (mm)	ATTACHMENT TYPE
ATS-61270D-C1-R0	27.0 x 27.0 x 9.5	27.0 x 27.0	Clip
ATS-61270K-C1-R0	27.0 x 27.0 x 14.5	27.0 x 27.0	Clip
ATS-61270R-C1-R0	27.0 x 27.0 x 19.5	27.0 x 27.0	Clip
ATS-61270W-C2-R0	27.0 x 27.0 x 24.5	27.0 x 27.0	Clip
ATS-61290D-C1-R0	29.0 x 29.0 x 9.5	29.0 x 29.0	Clip
ATS-61290K-C1-R0	29.0 x 29.0 x 14.5	29.0 x 29.0	Clip
ATS-61290R-C1-R0	29.0 x 29.0 x 19.5	29.0 x 29.0	Clip
ATS-61290W-C2-R0	29.0 x 29.0 x 24.5	29.0 x 29.0	Clip
ATS-61300D-C1-R0	30.0 x 30.0 x 9.5	30.0 x 30.0	Clip
ATS-61300K-C1-R0	30.0 x 30.0 x 14.5	30.0 x 30.0	Clip
ATS-61300R-C1-R0	30.0 x 30.0 x 19.5	30.0 x 30.0	Clip
ATS-61300W-C2-R0	30.0 x 30.0 x 24.5	30.0 x 30.0	Clip
ATS-61310D-C1-R0	31.0 x 31.0 x 9.5	31.0 x 31.0	Clip
ATS-61310K-C1-R0	31.0 x 31.0 x 14.5	31.0 x 31.0	Clip
ATS-61310R-C1-R0	31.0 x 31.0 x 19.5	31.0 x 31.0	Clip
ATS-61310W-C2-R0	31.0 x 31.0 x 24.5	31.0 x 31.0	Clip
ATS-61325D-C1-R0	32.5 x 32.5 x 9.5	32.5 x 32.5	Clip
ATS-61325K-C1-R0	32.5 x 32.5 x 14.5	32.5 x 32.5	Clip
ATS-61325R-C1-R0	32.5 x 32.5 x 19.5	32.5 x 32.5	Clip
ATS-61325W-C2-R0	32.5 x 32.5 x 24.5	32.5 x 32.5	Clip
ATS-61330D-C1-R0	33.0 x 33.0 x 9.5	33.0 x 33.0	Clip
ATS-61330K-C1-R0	33.0 x 33.0 x 14.5	33.0 x 33.0	Clip
ATS-61330R-C1-R0	33.0 x 33.0 x 19.5	33.0 x 33.0	Clip
ATS-61330W-C2-R0	33.0 x 33.0 x 24.5	33.0 x 33.0	Clip
ATS-61350D-C1-R0	35.0 x 35.0 x 9.5	35.0 x 35.0	Clip
ATS-61350K-C1-R0	35.0 x 35.0 x 14.5	35.0 x 35.0	Clip
ATS-61350R-C1-R0	35.0 x 35.0 x 19.5	35.0 x 35.0	Clip
ATS-61350W-C2-R0	35.0 x 35.0 x 24.5	35.0 x 35.0	Clip
ATS-61375D-C1-R0	37.5 x 37.5 x 9.5	37.5 x 37.5	Clip
ATS-61375K-C1-R0	37.5 x 37.5 x 14.5	37.5 x 37.5	Clip
ATS-61375R-C1-R0	37.5 x 37.5 x 19.5	37.5 x 37.5	Clip
ATS-61375W-C2-R0	37.5 x 37.5 x 24.5	37.5 x 37.5	Clip

PART NUMBER	HEAT SINK DIMENSIONS L x W x H (mm)	COMPONENT DIMENSIONS L x W (mm)	ATTACHMENT TYPE
ATS-61400D-C1-R0	40.0 x 40.0 x 9.5	40.0 x 40.0	Clip
ATS-61400K-C1-R0	40.0 x 40.0 x 14.5	40.0 x 40.0	Clip
ATS-61400R-C1-R0	40.0 x 40.0 x 19.5	40.0 x 40.0	Clip
ATS-61400W-C2-R0	40.0 x 40.0 x 24.5	40.0 x 40.0	Clip
ATS-61425D-C1-R0	42.5 x 42.5 x 9.5	42.5 x 42.5	Clip
ATS-61425K-C1-R0	42.5 x 42.5 x 14.5	42.5 x 42.5	Clip
ATS-61425R-C1-R0	42.5 x 42.5 x 19.5	42.5 x 42.5	Clip
ATS-61425W-C2-R0	42.5 x 42.5 x 24.5	42.5 x 42.5	Clip
ATS-61450D-C1-R0	45.0 x 45.0 x 9.5	45.0 x 45.0	Clip
ATS-61450K-C1-R0	45.0 x 45.0 x 14.5	45.0 x 45.0	Clip
ATS-61450R-C1-R0	45.0 x 45.0 x 19.5	45.0 x 45.0	Clip
ATS-61450W-C2-R0	45.0 x 45.0 x 24.5	45.0 x 45.0	Clip
ATS-61500D-C2-R0	53.0 x 53.0 x 9.5	40.0 x 40.0	Push Pin
ATS-61500K-C2-R0	53.0 x 53.0 x 14.5	40.0 x 40.0	Push Pin
ATS-61500R-C2-R0	53.0 x 53.0 x 19.5	40.0 x 40.0	Push Pin
ATS-61500W-C2-R0	53.0 x 53.0 x 24.5	40.0 x 40.0	Push Pin
ATS-61600D-C2-R0	63.0 x 63.0 x 9.5	50.0 x 50.0	Push Pin
ATS-61600K-C2-R0	63.0 x 63.0 x 14.5	50.0 x 50.0	Push Pin
ATS-61600R-C2-R0	63.0 x 63.0 x 19.5	50.0 x 50.0	Push Pin
ATS-61600W-C2-R0	63.0 x 63.0 x 24.5	50.0 x 50.0	Push Pin
ATS-61700D-C2-R0	74.0 x 74.0 x 9.5	60.0 x 60.0	Push Pin
ATS-61700K-C2-R0	74.0 x 74.0 x 14.5	60.0 x 60.0	Push Pin
ATS-61700R-C2-R0	74.0 x 74.0 x 19.5	60.0 x 60.0	Push Pin
ATS-61700W-C2-R0	74.0 x 74.0 x 24.5	60.0 x 60.0	Push Pin
ATS-61800D-C2-R0	84.0 x 84.0 x 9.5	70.0 x 70.0	Push Pin
ATS-61800K-C2-R0	84.0 x 84.0 x 14.5	70.0 x 70.0	Push Pin
ATS-61800R-C2-R0	84.0 x 84.0 x 19.5	70.0 x 70.0	Push Pin
ATS-61800W-C2-R0	84.0 x 84.0 x 24.5	70.0 x 70.0	Push Pin
ATS-LQHS-74025-C1-R0	74.0 x 74.0 x 25.8	60.0 x 60.0	Push Pin
ATS-LQHS-74030-C1-R0	74.0 x 74.0 x 30.8	60.0 x 60.0	Push Pin
ATS-LQHS-84025-C1-R0	84.0 x 84.0 x 25.8	70.0 x 70.0	Push Pin
ATS-LQHS-84030-C1-R0	84.0 x 84.0 x 30.8	70.0 x 70.0	Push Pin

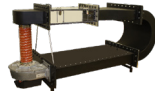
ATS is a leading-edge engineering and manufacturing company focused on the complex thermal management issues of electronics cooling. Our goal is to be our customers' value-added supplier and success partner for all thermal management needs: analysis, testing & final product.



Heat Sinks



Instruments



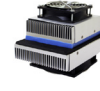
Wind Tunnels



Liquid Cooling



Heat Pipes



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