



# IGBT Cold Plates

## High Performance

### ATS-CP-1003

ATS IGBT cold plates have unmatched thermal performance because of their mini-channel fin design. The ATS-CP-1003 cold plate, at a flow rate of 4 L/min, can transfer 1kW of heat at 6.8°C temperature difference between the cold plate base and inlet fluid temperature. If the coolant has particles, a #60 filter or finer is recommended to remove possible particles in the liquid.

### FEATURES AND BENEFITS

- » More than 30% improvement in thermal performance compared to commercially available cold plates
- » Compatible with industry accepted coolants
- » 1/4 NPT threaded input and output
- » Low pressure drop
- » Lightweight for ease of transportation
- » Provides uniform cold plate surface temperature when IGBTs are installed
- » Maximum pressure: 60 psi
- » **Applications:** Automotive Industry, Uninterruptible Power Supplies, Wind Turbines, Photovoltaic Inverters, Power Electronics, Induction Heaters, Motor Devices, Utility Vehicles, Anywhere power devices are used



*Image for illustration purposes only*

### DIMENSIONS (L X W X H)

162 X 147 X 20 mm  
(6.4 X 5.8 X 0.8")

### INLET/OUTPUT PORTS

1/4 – 18 NPT

### MATERIAL

ALUMINUM, UNFINISHED

### WEIGHT

1,102g

### ATS COLD PLATES

- » **Innovative Technology**  
Superior heat transfer, flexible design platform
- » **Compact Design**  
Designed to fit standard IGBT and other power electronics applications
- » **Easy Connections**  
Industry standard threaded hole sizes allows for hassle-free connection options
- » **Safe & Reliable**  
Leak Free (100% tested:100 psi)
- » **Custom Options**  
Choose from various options, i.e; fitting types, material types, device mounting and more. Contact ATS for additional information

### ADDITIONAL COMPONENTS DEPLOYED IN LIQUID COOLING LOOPS



Flow Meter

Leak Detector

Cold Plates

Chillers

Heat Exchangers

ATS has the products needed to design a complete liquid cooling loop: **Cold Plates** to transfer and remove the heat from the source, **Heat Exchangers** to transfer heat from the liquid to the air with or without a fan, and **Chillers** to circulate and condition the fluid in the system. In addition, ATS offers **Flow Meters** to instantaneously measure the volumetric flow rate of the fluid in the system and **Leak Detectors** to notify users of any leaks in the system.

» **Customization Available!**  
ATS will customize any of the cold plates to fit into your application

### IGBT COMPATIBILITY

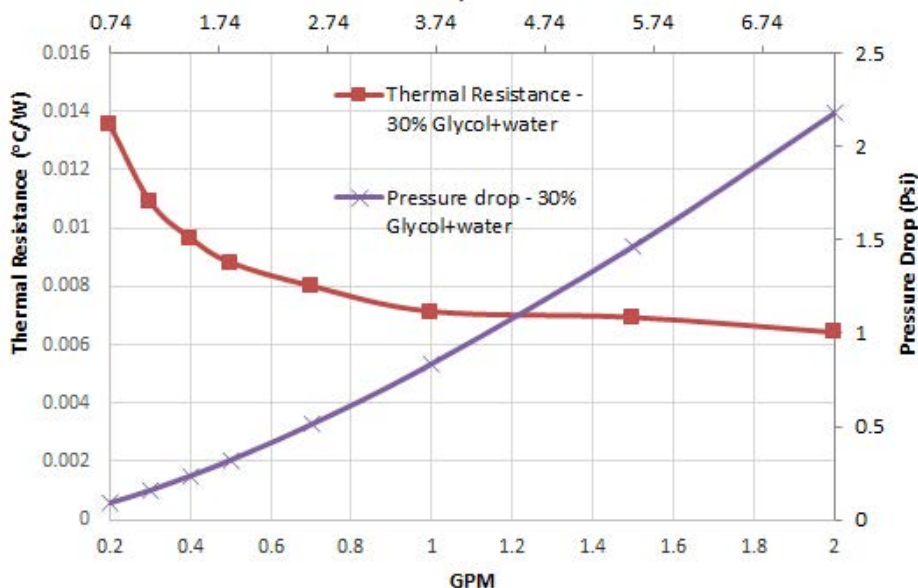
- » Semikron SemiX® 33
- » Infineon EconoPACK™ +
- » Fuji Semiconductor M629
- » Powerex Intellimod™ L-Series
- » Other IGBTs or high power devices





**PERFORMANCE CURVES**

**Thermal Resistance And Pressure Drop ATS-CP-1003**



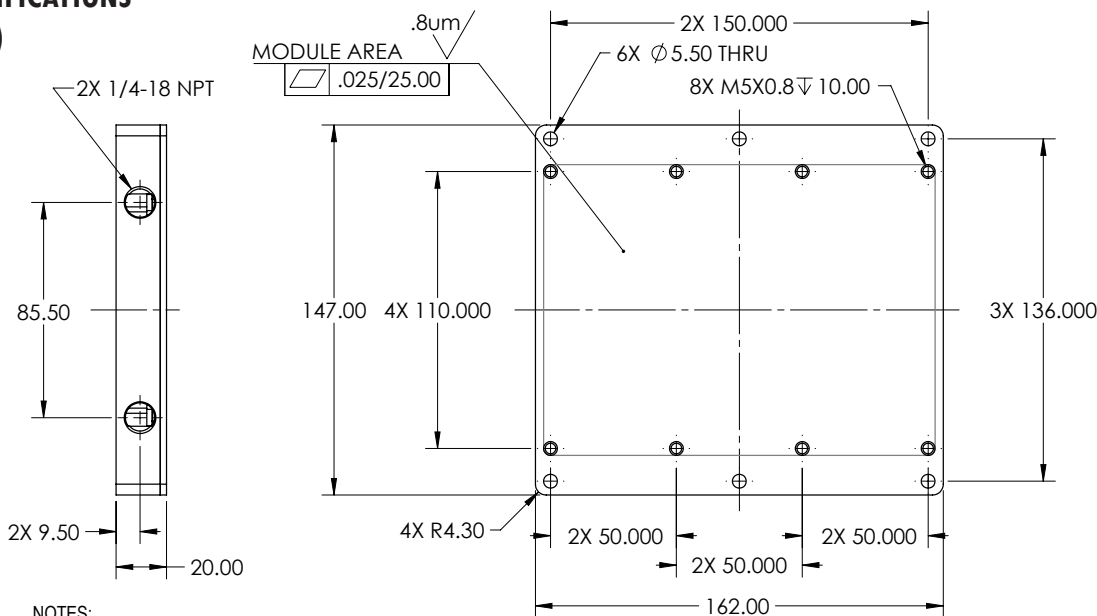
ATS Cold Plate Family			
Part Number	Dimensions* (L x W x H)	Flow Rate (L/min)	ΔT @ kW
ATS-CP-1000	202 x 130 x 20	4 L/min	5.50°C
ATS-CP-1001	198 x 147 x 20	4 L/min	5.00°C
ATS-CP-1002	162 x 136 x 20	4 L/min	7.00°C
ATS-CP-1003	162 x 147 x 20	4 L/min	6.80°C
ATS-CP-1004	162 x 172 x 20	4 L/min	5.90°C

Flow rate (gallon/min)**	R (°C/W)	DeltaP (psi)
2	0.0064	2.2
1	0.007	0.83
0.5	0.0087	0.32
0.2	0.014	0.09

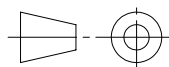
\* All Dimensions in mm  
\*\* Note: To convert to l/min, multiply by 3.7

**MECHANICAL SPECIFICATIONS**

(all dimensions in mm)



- NOTES:  
1. DIMENSIONS ARE IN MM.  
2. TOLERANCES: X.XX +/- 0.25 MM, X.XXX +/- 0.125 MM.  
3. THIRD ANGLE PROJECTION.



For further technical information, please contact Advanced Thermal Solutions, Inc. by phone: 1-781-769-2800, email [ats-hq@qats.com](mailto:ats-hq@qats.com) or visit [www.qats.com](http://www.qats.com).

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