



# IGBT Cold Plates

## High Performance

### ATS-CP-1001

ATS IGBT cold plates have unmatched thermal performance because of their mini-channel fin design. The ATS-CP-1001 cold plate, at a flow rate of 4 L/min, can transfer 1kW of heat at 5°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*

### 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

#### DIMENSIONS (L X W X H)

198 X 147 X 20 mm  
(7.8 X 5.8 X 0.8")

#### INLET/OUTPUT PORTS

1/4 – 18 NPT

#### MATERIAL

ALUMINUM, UNFINISHED

#### WEIGHT

1,340g

### ADDITIONAL COMPONENTS DEPLOYED IN LIQUID COOLING LOOPS



Flow Meter

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

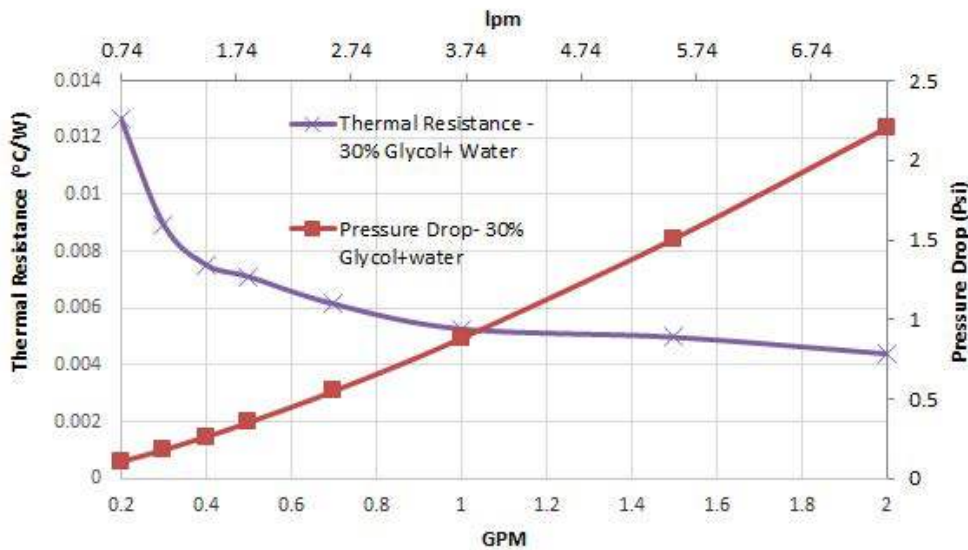
- » Semikron SemiX® 3
- » Infineon EconoDUAL™ 3
- » Fuji Semiconductor Spring Contact Module
- » Powerex NX™ Series
- » Other IGBTs or high power devices





**PERFORMANCE CURVES**

**Thermal Resistance And Pressure Drop ATS-CP-1001**



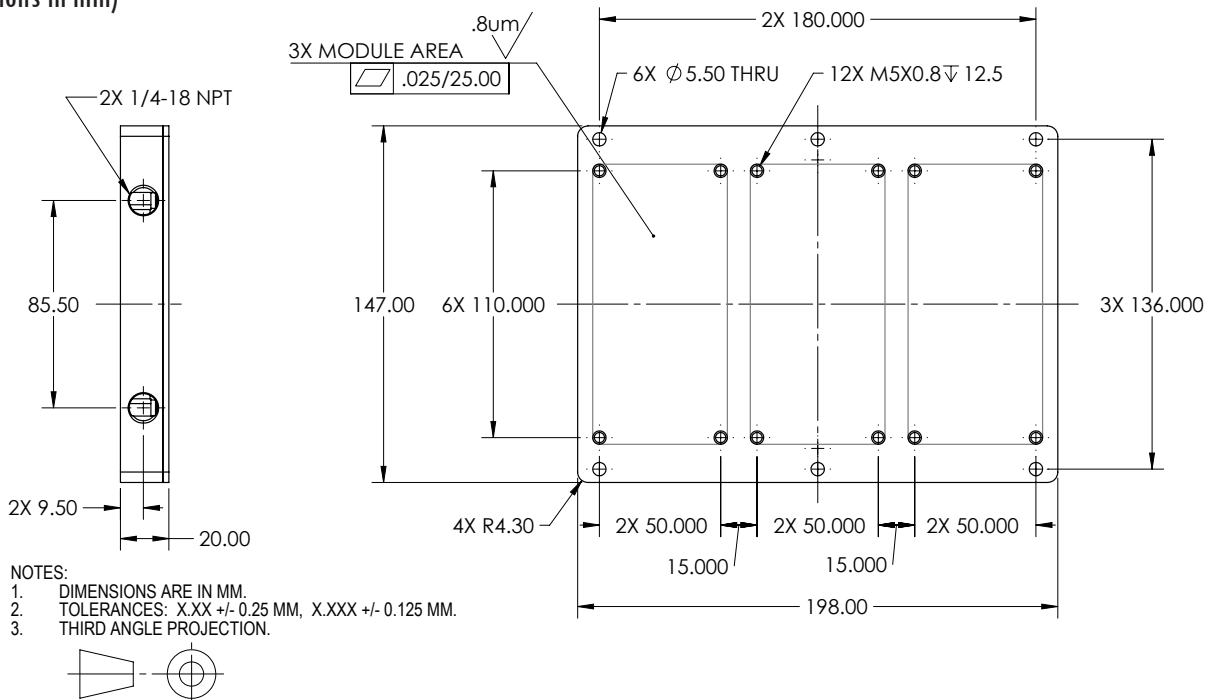
ATS Cold Plate Family			
Part Number	Dimensions* (L x W x H)	Flow Rate (L/min)	ΔT @ 1kW
ATS-CP-1000	202 x 130 x 20	4 L/min	5.50°C
ATS-CP-1001	198 x 147 x 20	4 L/min	5.00°C
ATS-CP-1002	162 x 136 x 20	4 L/min	7.00°C
ATS-CP-1003	162 x 147 x 20	4 L/min	6.80°C
ATS-CP-1004	162 x 172 x 20	4 L/min	5.90°C

Flow rate (gallon/min)**	R (°C/W)	DeltaP (psi)
2	0.0044	2.2
1	0.0053	0.88
0.5	0.007	0.35
0.2	0.013	0.1

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

**MECHANICAL SPECIFICATIONS**

(all dimensions in mm)



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)