ATS ADVANCED THERMAL SOLUTIONS, INC.
Innovations in Thermal Management®

IGBT Cold Plates

High Performance

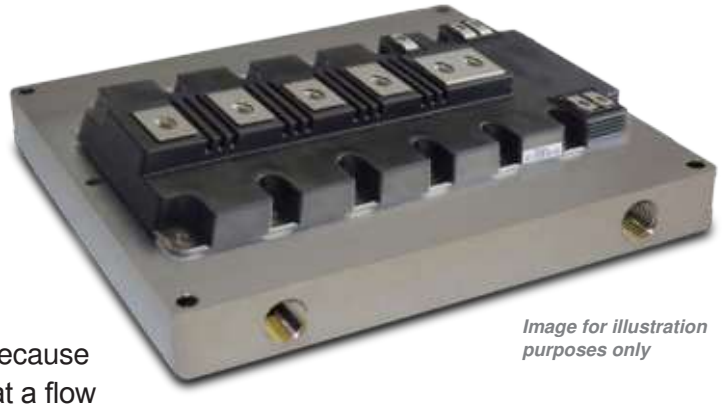


Image for illustration purposes only

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

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 hassel-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

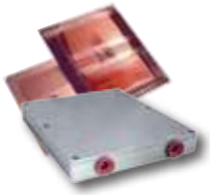
ADDITIONAL COMPONENTS DEPLOYED IN LIQUID COOLING LOOPS



Flow Meter



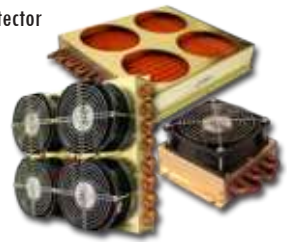
Leak Detector



Cold Plates



Chillers



Heat Exchangers

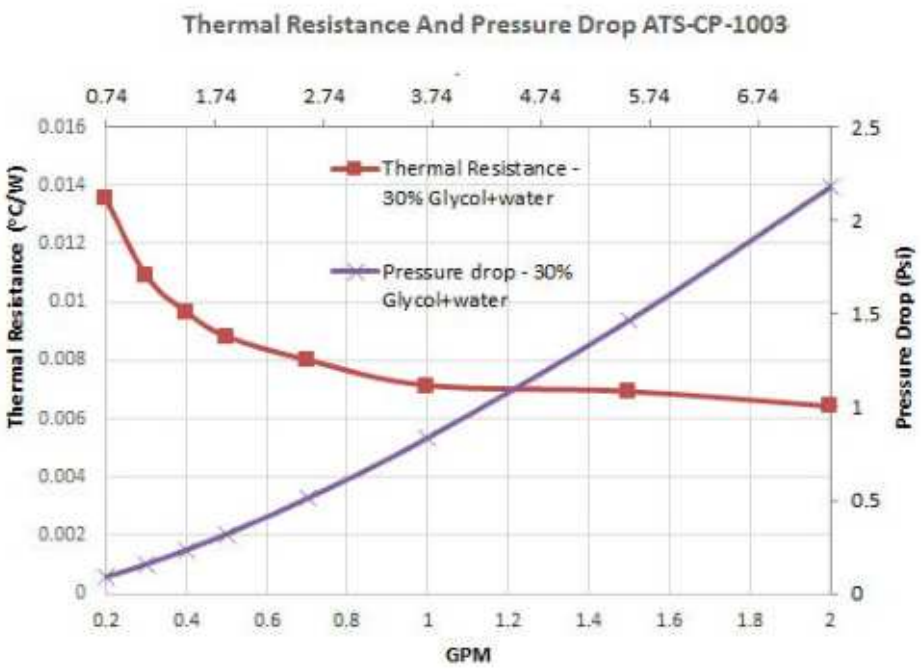
ATS has the products needed to design a complete liquid cooling loop: **Cold Plates** to transfer and remove the heat from the source, **Heat Exchangers** to transfer heat from the liquid to the air with or without a fan, and **Chillers** to circulate and condition the fluid in the system. In addition, 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.

IGBT COMPATIBILITY

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

RoHS COMPLIANT

PERFORMANCE CURVES



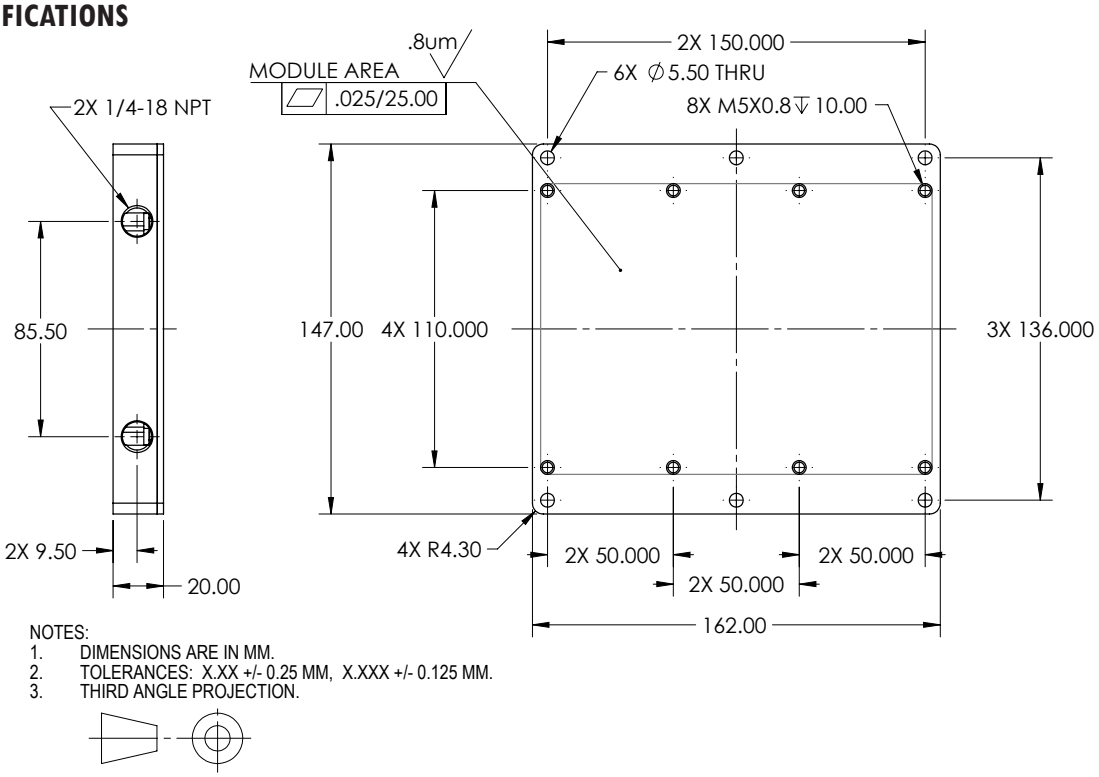
ATS Cold Plate Family			
Part Number	Dimensions* (L x W x H)	Flow Rate (L/min)	ΔT @ kW
ATS-CP-1000	202 x 130 x 20	4 L/min	5.50°C
ATS-CP-1001	198 x 147 x 20	4 L/min	5.00°C
ATS-CP-1002	162 x 136 x20	4 L/min	7.00°C
ATS-CP-1003	162 x 147 x 20	4 L/min	6.80°C
ATS-CP-1004	162 x 172 x 20	4 L/min	5.90°C

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** or visit www.qats.com.