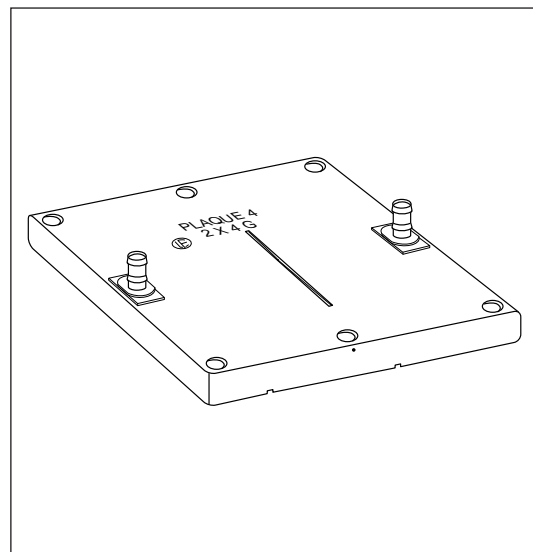




MODUCAL® WATER COOLED HEAT EXCHANGERS FOR HIGH POWER IGBT MODULES

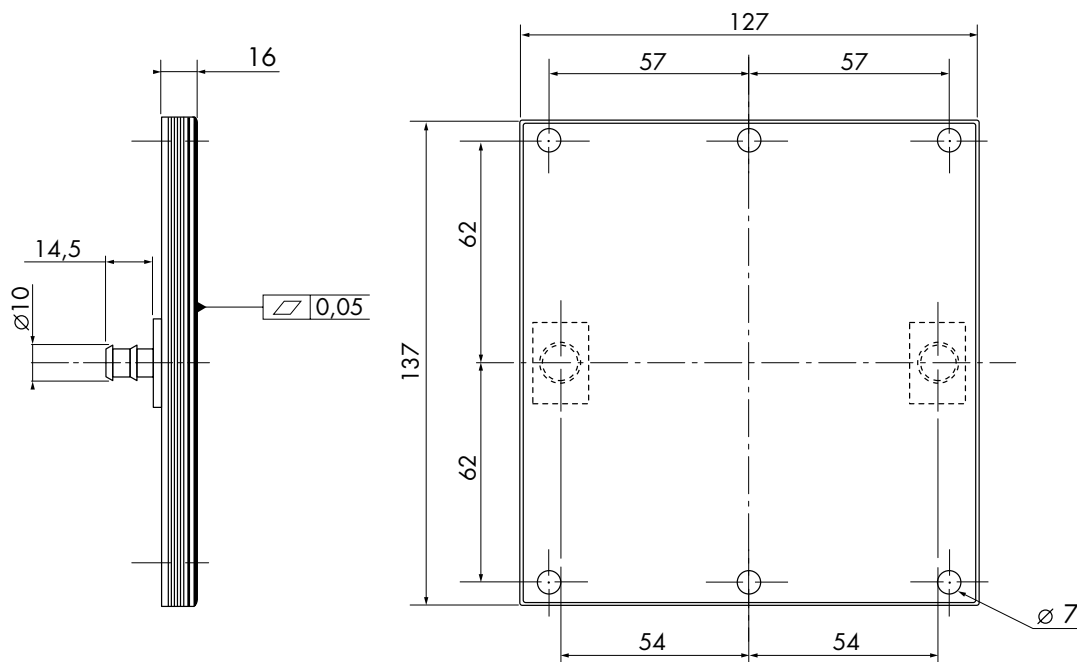
- **COST SAVING**
FULL CURRENT RATING FOR HIGH POWER IGBT
NO DERATING: BEST USE OF PURCHASED SILICIUM
- **COMPETITIVE PRICE**
INDUSTRIALIZED COMPONENT
NO WELDING NO MACHINING
- **VOLUME AND WEIGHT SAVING**
DOUBLE SIDE COOLING AVAILABLE
MODUCAL ASSEMBLY TAILORED TO NUMBER OF IGBT MODULES NEEDED
POSSIBLE USE WITH PRESSPACK IGBT
LOW PRESSURE DROP FOR PUMP DOWNSIZING
- **THERMAL PERFORMANCE INCREASE**
HIGHER SWITCHING FREQUENCY
HIGH THERMAL EFFICIENCY AT LOW FLOW RATE
- **RELIABILITY**
PROOVEN TECHNOLOGY IN VERY DEMANDING APPLICATIONS



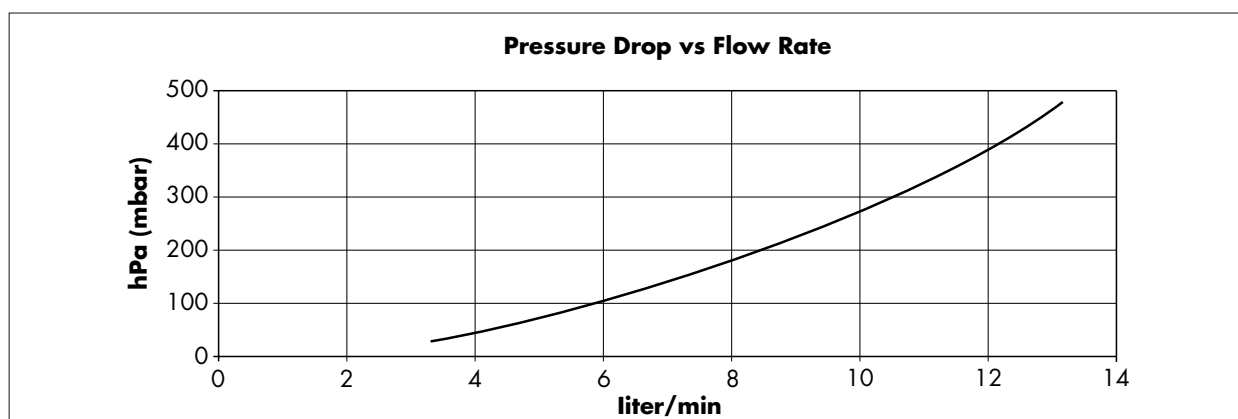
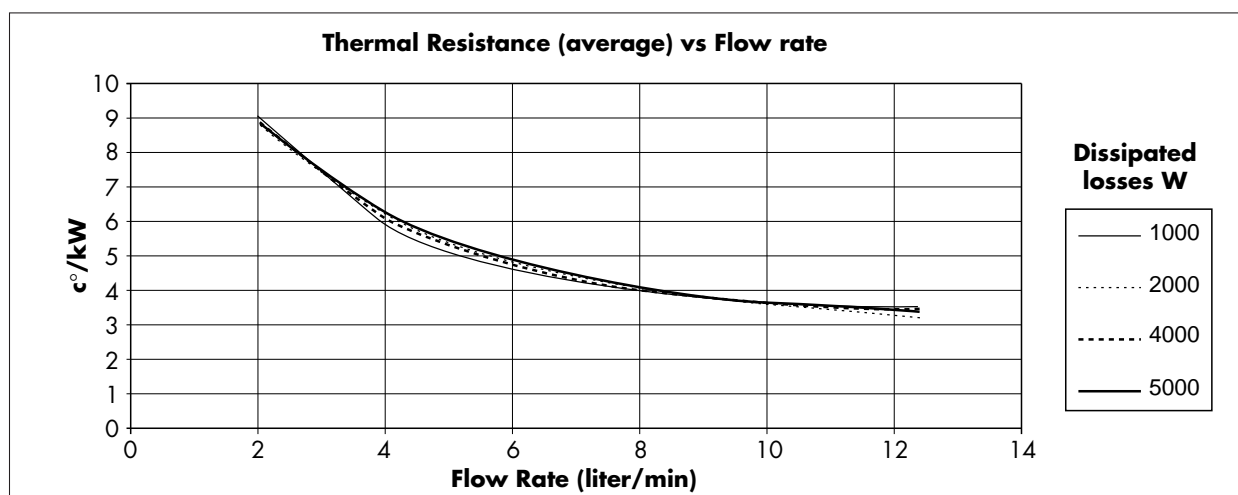
MAIN CHARACTERISTICS

VERY LARGE POWER DISSIPATION	Double side or single side up to 5 kW losses
VERY LOW THERMAL RESISTANCE	5°C/kW at 6 l/min
HIGH HEAT EXCHANGE IN VERY SMALL VOLUME.....	Patented brased inner structure
ALUMINIUM DESIGN	Lightness of component
LOW PRESSURE DROP.....	0.1 bar at 6 l/min 0.4 bar at 12 l/min
DESIGNED FOR VERY LARGE POWER IGBT MODULES	127 x 137 mm ² available other surfaces soon available

OUTLINE DRAWING (mm)



EXAMPLE OF THERMAL AND HYDRAULIC FEATURES



Test conditions : torque 5 Nm, one side cooling, thermal grease used, normal water, 50°C inlet water temperature.

(provisory document for information purpose only)

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