

PRESS-PACK COLD PLATES

2022

the WEBRA Aluminum Cold Plate Solution



WEBRA Cold Plates for press-pack discs.

A uniform pressure distribution is vital for press-pack discs. The **WEBRA** solution for FSW cold plate press-packs offer a robust construction, perfectly flat surfaces and parallelity for ideal contact and outstanding performance.

WEBRA press pack cold plates are suitable for 4", 5" and 6" discs.



WEBRA INDUSTRI offers high performance friction stir welded aluminum cold plates suited for demanding power semiconductor needs.

WEBRA customizes solutions in terms of thermo- and fluid dynamics and the power module configuration.

WEBRA uses friction stir welding (FSW) technique, which gives safe and economic production of cold plate units. The FSW technique benefits from homogeneous joints without any added materials. FSW joints are more resistant to corrosion and stress due to the homogeneity of the material.

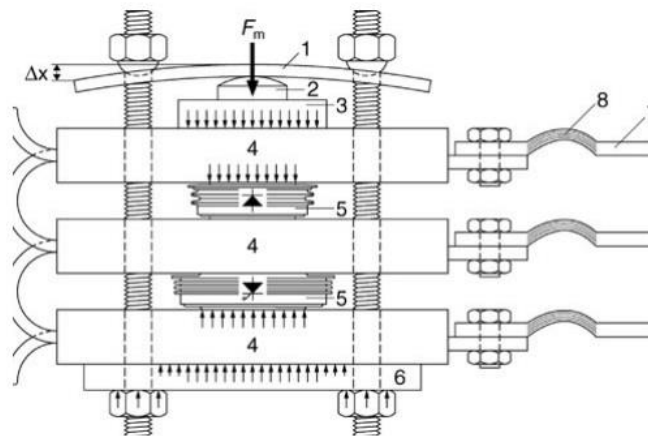
WEBRA gives full support in thermal management: calculation, design, production and bench testing of the end product.

WEBRA feels that joining a project at an early stage is the key to a successful thermal system. A close co-operation gives the end result a higher rate of effectiveness, great economy and altogether an optimal solution for the customer. Our design team is always ready to support and give in-put in any matters of thermal management.

For high-quality thermal management that suits your needs – choose **WEBRA**.

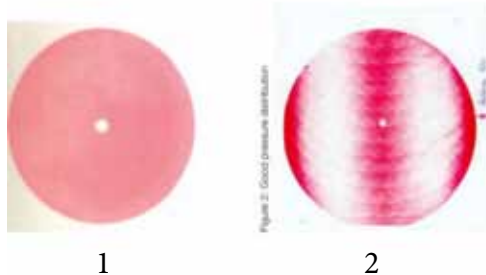
WEBRA Press-packs are available as both air cooled (GTL/GTK) and water cooled (PVK) and have unique thermal solutions.

It is used to build a stack: cooler (4) - component (5) - cooler (4), and can be built up to 15-20 components.



Press-pack is a critical product that must meet a lot of criterias:

- 1) The two contact surfaces must be extremely flat and parallel.
- 2) The internal construction must be rigid and not be compressed, in order to have as optimal contact surface to the components as possible.



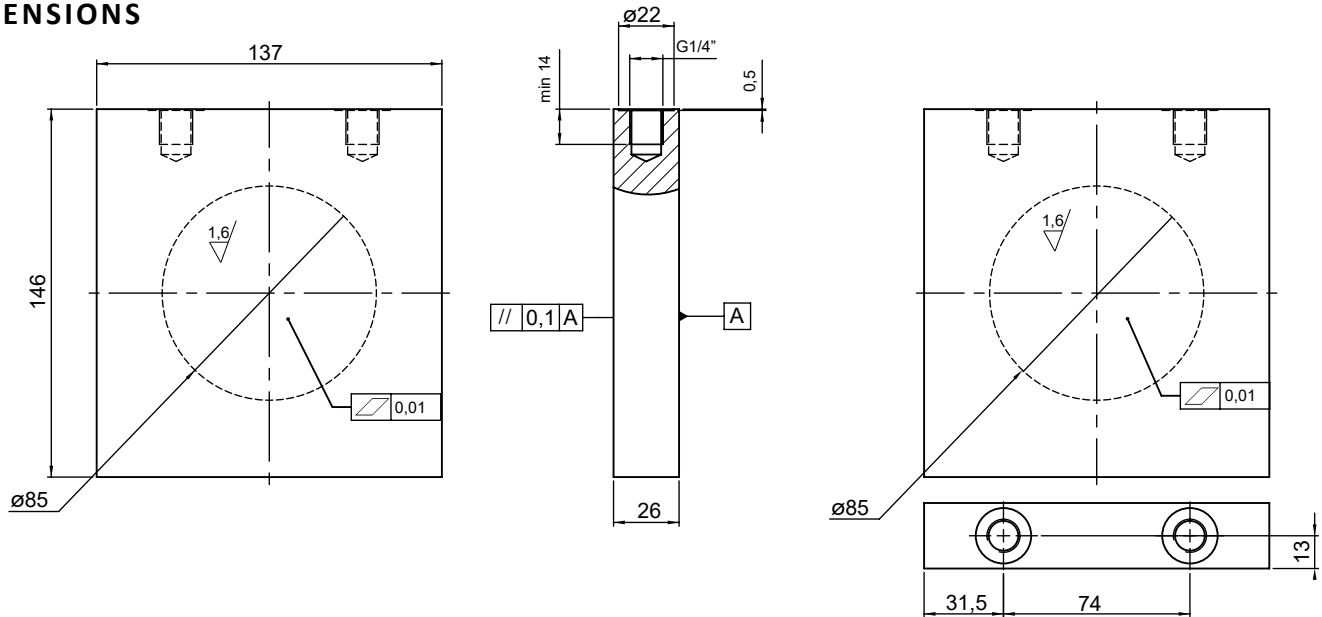
- 1) Perfect mounting pressure distribution
- 2) Very poor mounting pressure distribution (internal structure compressed)

SPECIFICATION

¹ selected values for quick selection, often at 2/3 of recommended maximum flow.
² uniform heat sources ³ Rth at conditions as in (1)

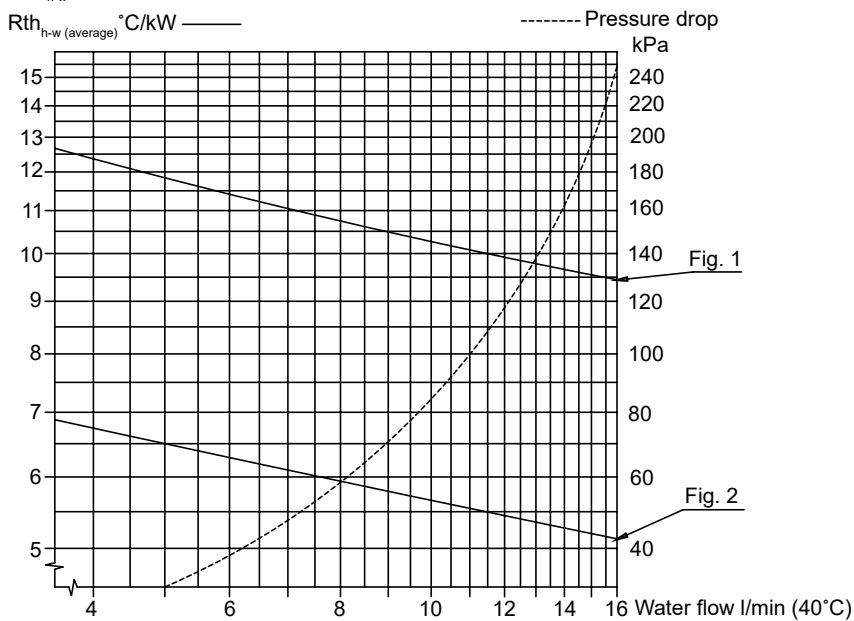
Suitable for semiconductor components	Fluid	Flow rate, pressure drop Δp^1	Heat sources ²	Rth K/kW/Comp (ref.temp) ³	Weight
3" or 4" press pack discs	Water-Glycol 50-50%	10 l/min, 82kPa	Ø 85	5,1	1,4 kg

DIMENSIONS



PERFORMANCE

Rth_{h-w} with 7°C clean water 10 l/min Fig.1 (9,2°C/kW) Fig.2 (5,1°C/kW)



Water with 50% glycol
 Maximum recommended flow 18 l/min

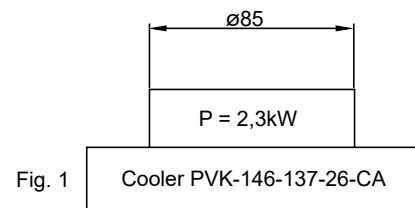


Fig. 1

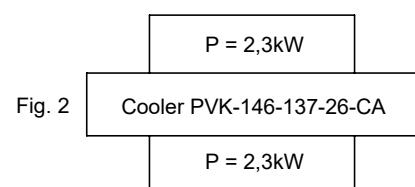


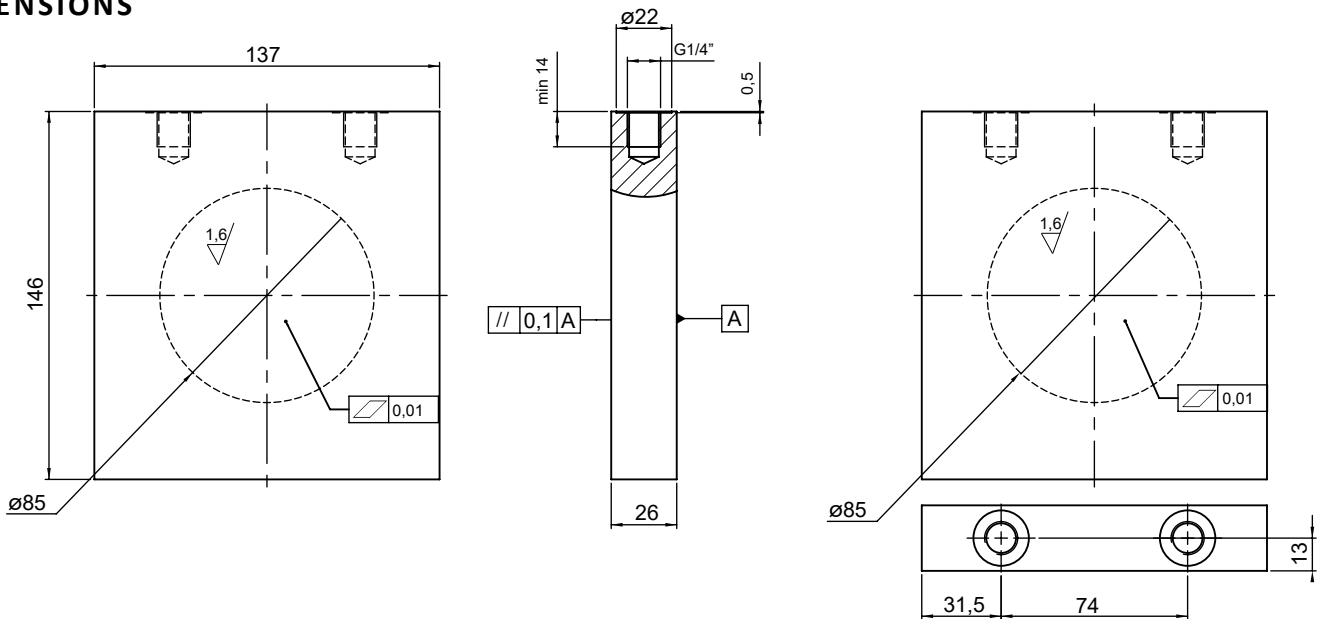
Fig. 2

SPECIFICATION

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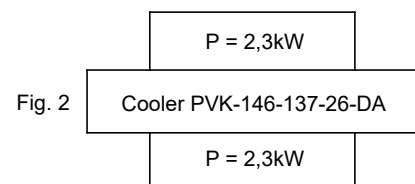
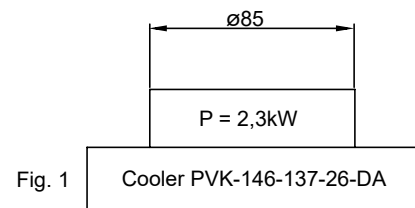
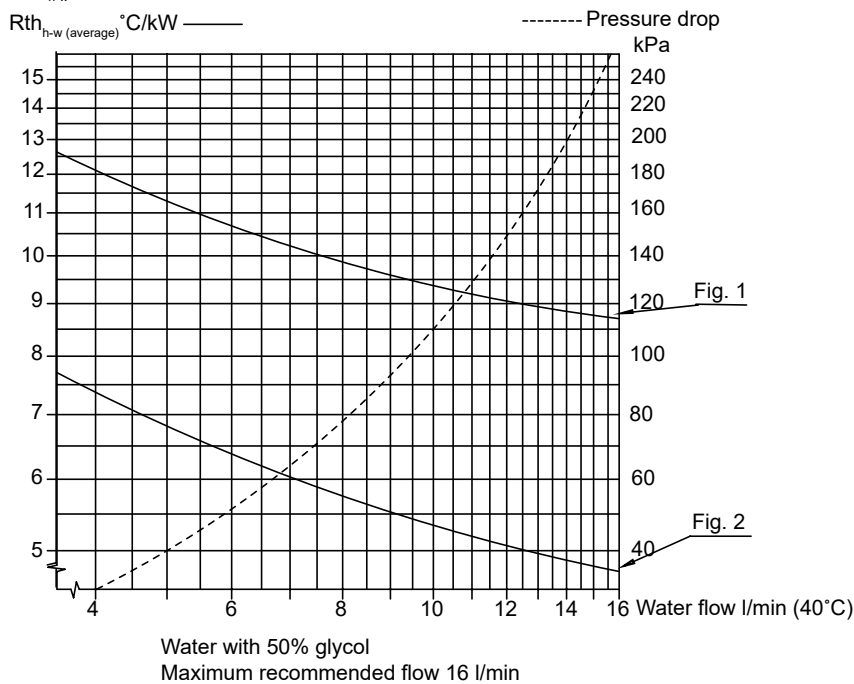
Suitable for semiconductor components	Fluid	Flow rate, pressure drop Δp^1	Heat sources ²	Rth K/kW/Comp (ref.temp) ³	Weight
3" or 4" press pack discs	Water-Glycol 50-50%	10 l/min, 110kPa	Ø 85	4,8	1,4

DIMENSIONS



PERFORMANCE

$R_{th_{h-w}}$ with 7°C clean water 10 l/min Fig.1 (8,5°C/kW) Fig.2 (4,8°C/kW)

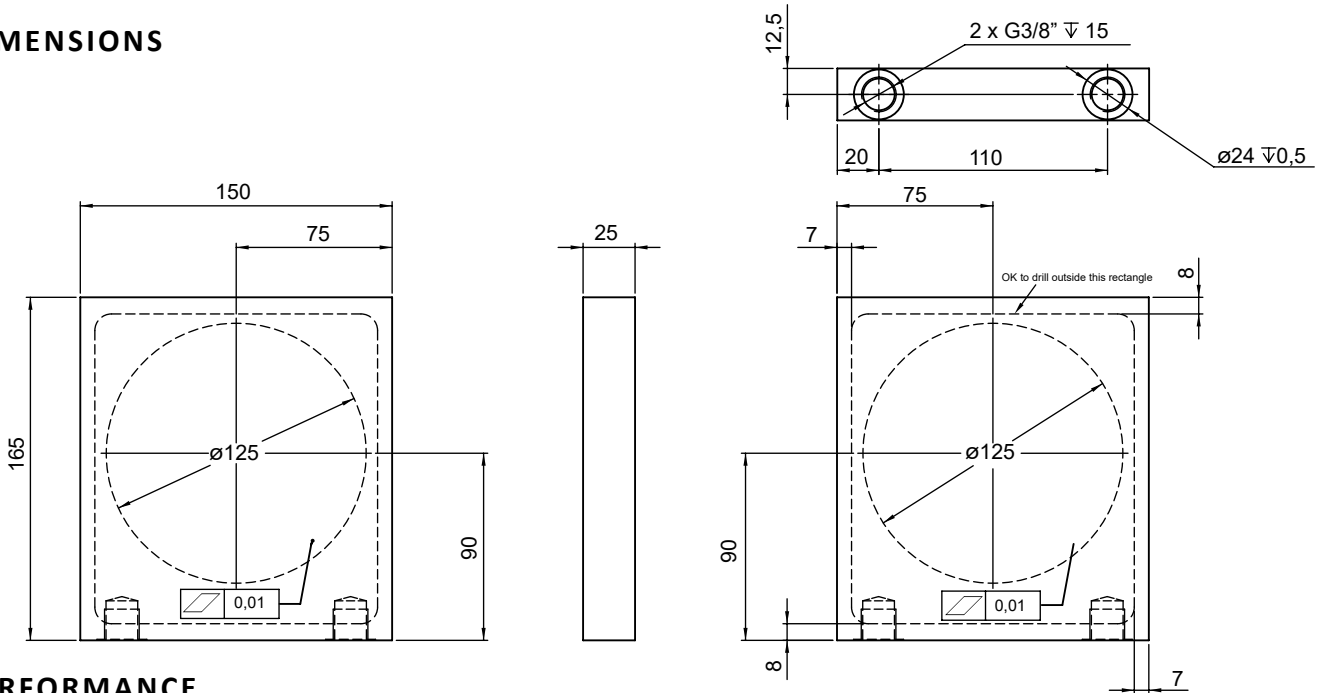


SPECIFICATION

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² uniform heat sources ³ Rth at conditions as in (1)

Suitable for semiconductor components	Fluid	Flow rate, pressure drop Δp^1	Heat sources ²	Rth K/kW/Comp (ref.temp) ³	Weight
5" or 6" press pack discs	Water-Glycol 50-50%	12 l/min, 50kPa	$\varnothing 125$	3,3	1,5

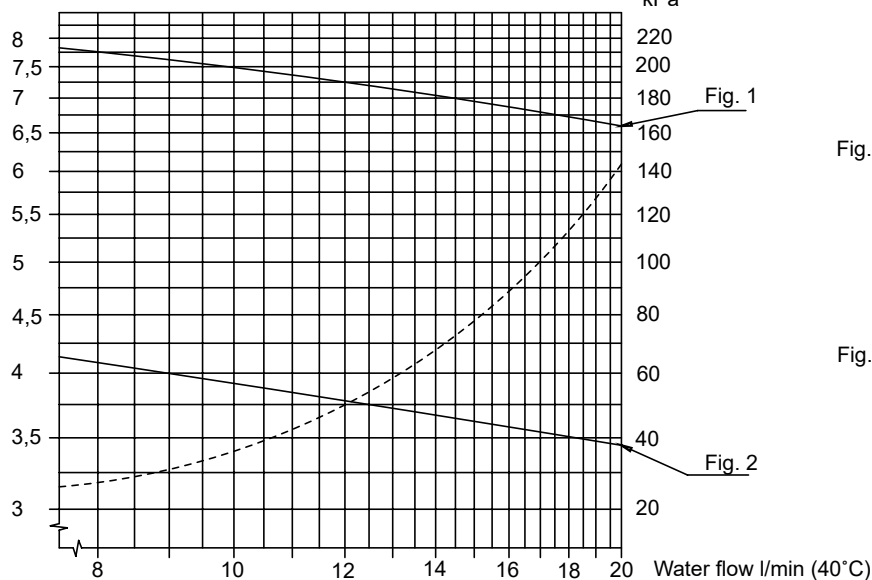
DIMENSIONS



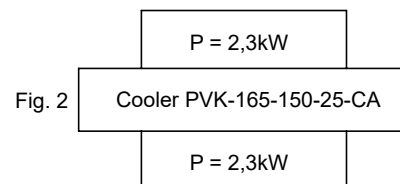
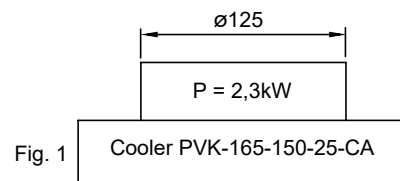
PERFORMANCE

Rth_{h-w} with 7°C clean water 12 l/min Fig.1 (5,6°C/kW) Fig.2 (3,3°C/kW)

Rth_{h-w} (average) °C/kW ——— Pressure drop kPa



Water with 50% glycol
 Maximum recommended flow 24 l/min

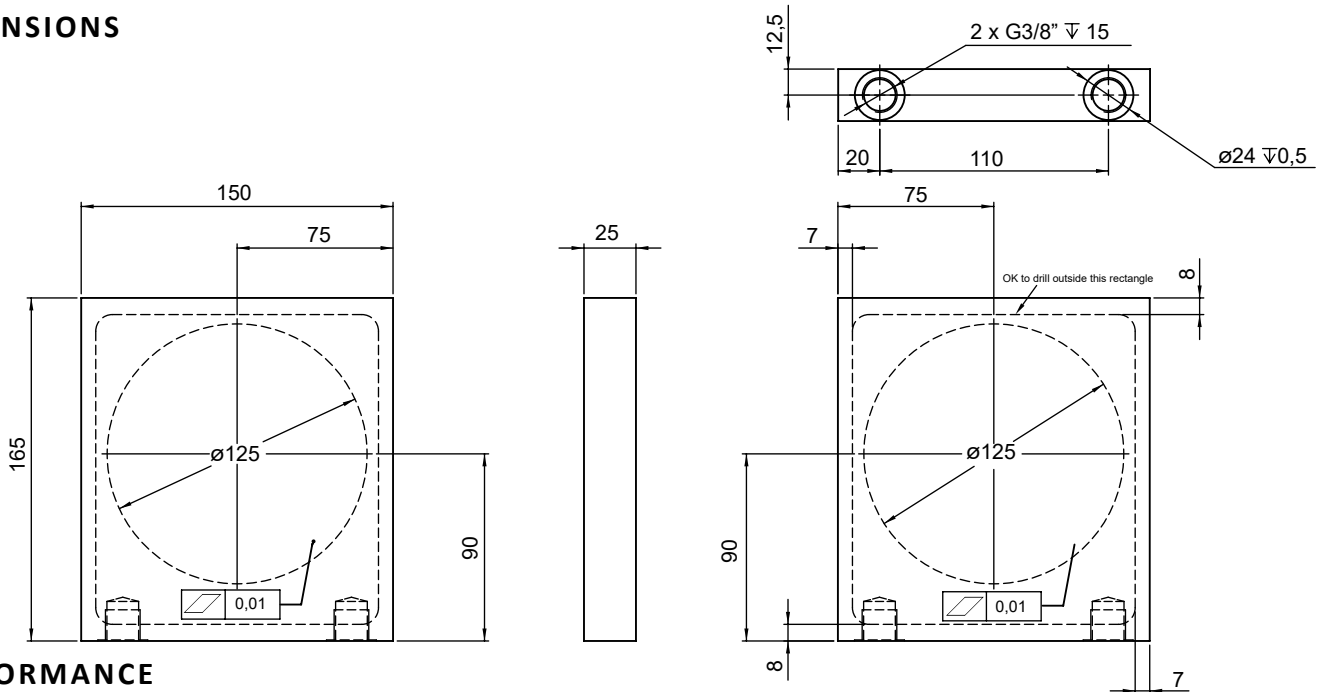


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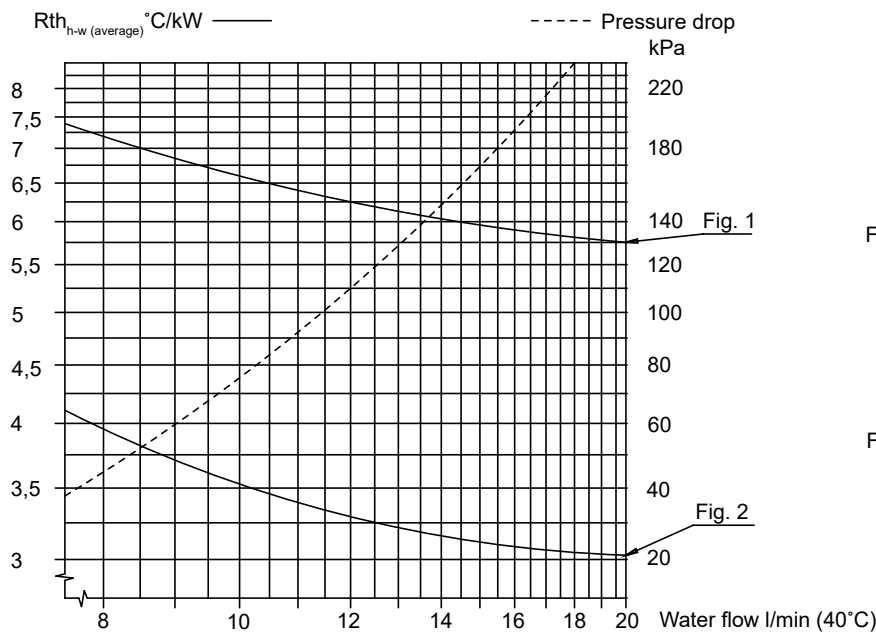
Suitable for semiconductor components	Fluid	Flow rate, pressure drop Δp^1	Heat sources ²	Rth K/kW/Comp (ref.temp) ³	Weight
5" or 6" press pack discs	Water-Glycol 50-50%	12 l/min, 110kPa	\varnothing 125	3,1	1,6

DIMENSIONS

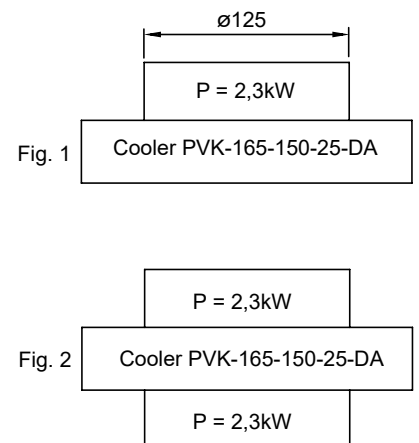


PERFORMANCE

Rth_{h-w} with 7°C clean water 12 l/min Fig.1 (5,4°C/kW) Fig.2 (3,1°C/kW)



Water with 50% glycol
 Maximum recommended flow 18 l/min





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