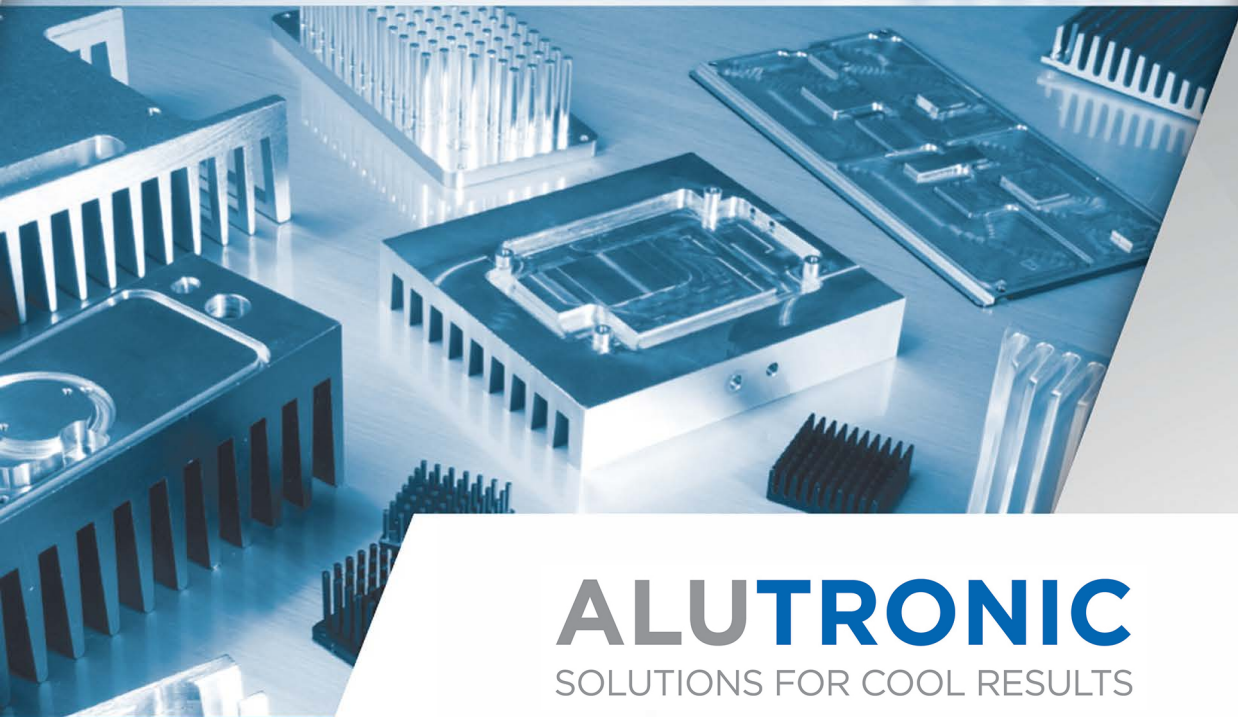




SOLUTIONS FOR COOL RESULTS

A close-up, blue-tinted photograph of a printed circuit board (PCB). Several circular components, possibly capacitors or inductors, are visible, along with a metal bracket or connector on the left side. The image is angled, showing the surface of the board and the components.

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Alutronic in Short

Customised Extrusions

Standard Extrusions

Heat Sink PCB Mounting

Powerblocs

Heat Sink Systems

Insulation + Heat Conduction

Mounting

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We like to have your cooling problems!
Visit us online for further information and more products!

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Alutronic in Short

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Since 1977

ALUTRONIC

SOLUTIONS FOR COOL RESULTS

- Experienced
- Fast
- Competent
- Reliable

If you are unable to find the solution you are looking for in this catalogue you are looking for, please feel free to call us up.

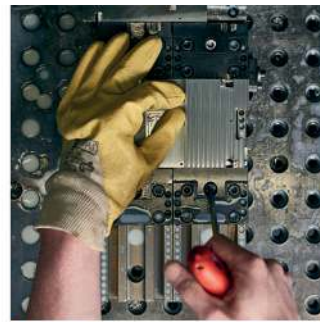
We are constantly supplementing our product range; please also visit our website.



family run



team working



fast + accurate



semi- automated



200+ extrusions



design support



ISO 9001



managed quality



service oriented

constant staff
trainingsocially
responsibleenvironmentally
responsible

Our services

A heat sink is rarely the component to which the other components in the system are adapted. Usually, it is the other way around. There several requirements to the heat sink:

- **What is the needed specific thermal resistance?**
- **How much design space does the system offer?**
- **Is there a standard heat sink extrusion or do you need a customised solution?**
- **And much more...**

Alutronic supports you all the way to the standard product that is right for you or your own, customised solution; face to face or on telephone.

Our in-house capabilities are supplemented by a wide-ranging professional network in the field of surface treatment, ventilation, housings and EMC protection



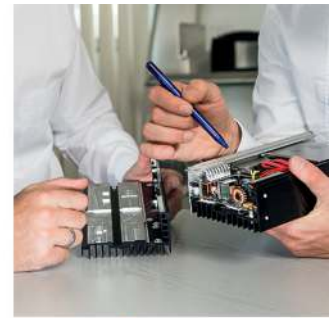
milling + drilling



anodising



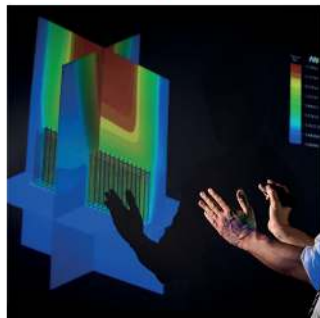
sub-assembly



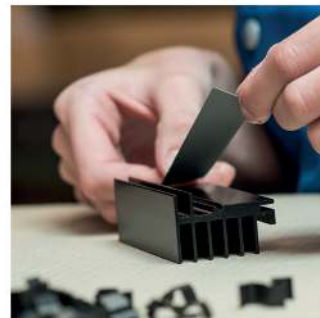
consulting



logistics solutions



thermal simulation



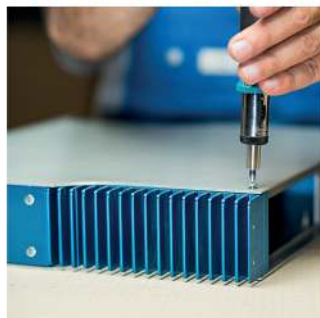
pre-assembly



custom cut foils



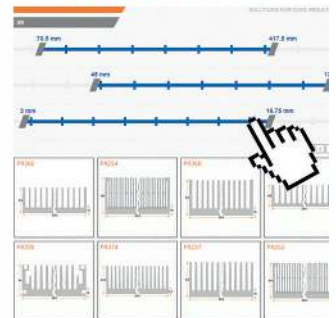
consultation
on site



rapid prototyping



RthK-calculator
online



extrusion-filter
online

-Very wide product range

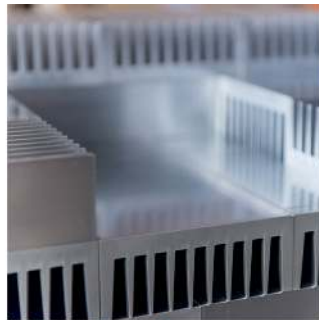
-Well sorted stock

-Continuous expansion of our variety of articles

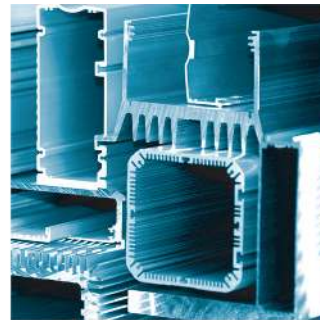
-Logistic services such as buffer storage, dual-use and recyclable packaging



customised



standard



casings



powerbloccs



heat sink systems



silicone washers



distance bolts



mounting clips



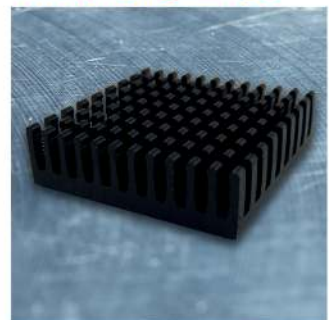
**screw-on
heat sinks**



**solderable
heat sinks**

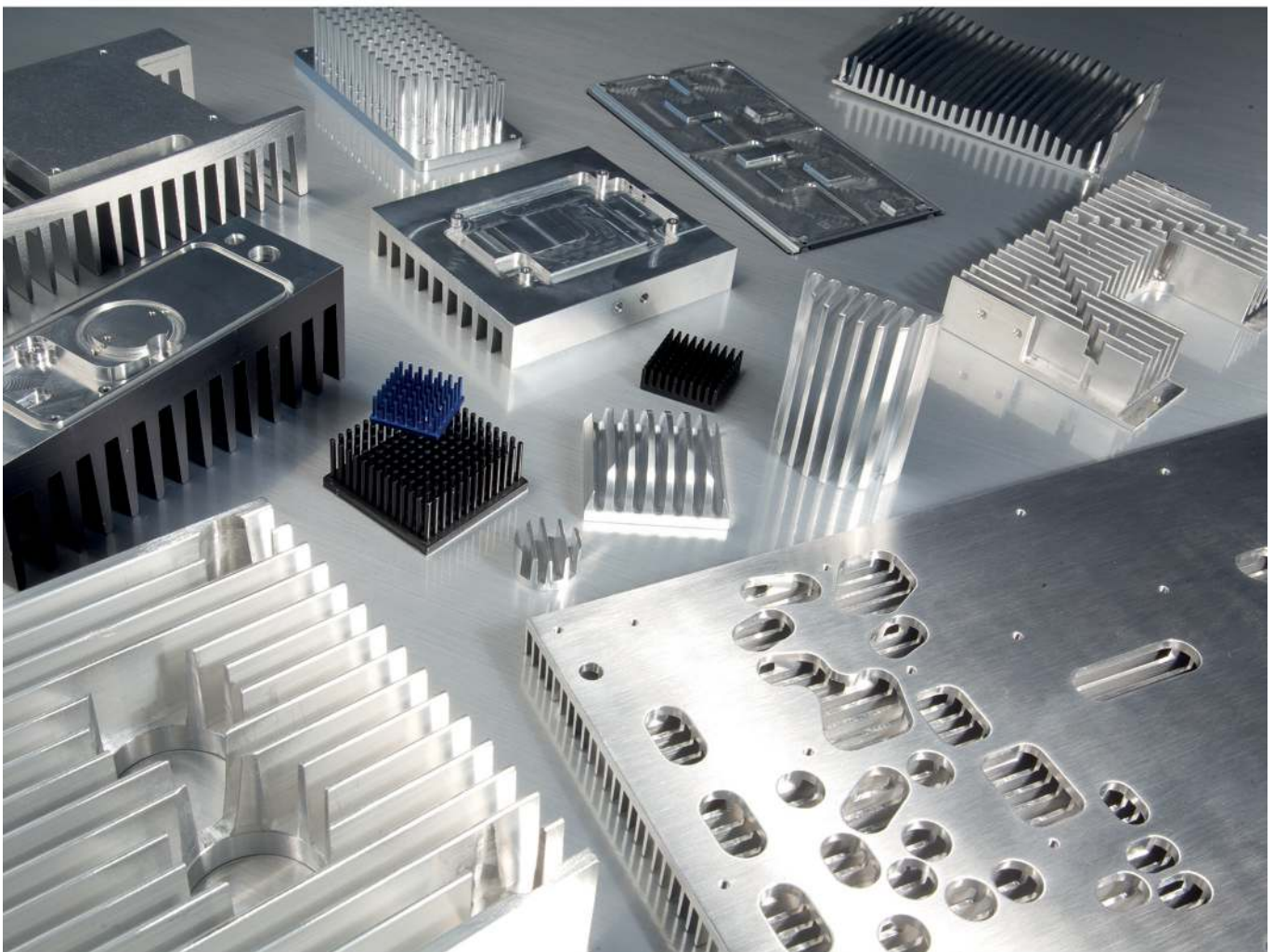


**plug-on
heat sinks**



**adhesive
heat sinks**

- Modern, efficient CNC machinery in operation
- Experienced workforce for aluminium machining
- Constant manufacturing precision
- Effective production planning
- Economical manufacturer of your products!(starting with a batch size of 1)



An anodised coating offers your components surface protection, improves heat radiation, electric insulation and provides decorative solutions.



We treat surfaces since 1989 with:

- Safety for human beings and the environment
- Quality by experience + competence
- Speed by automation and efficient processes



We will convince you with:

- 25 years of experience in anodisation
- Fully automatic anodising line
- Most modern water treatment plant
- In-house frame construction
- Express anodising service

For you, we produce:

- Anodised products up to 1700 mm length
- Anodised layer thickness up to 25 μm
- Chrome-plating in accordance with RoHS
- Anodising only for your aluminium parts

For further integration of the heat sink into your application, Alutronic can assemble mechanical components for you on request.

Assembly parts: Spacer bolts, clips, screws, fans, threaded inserts, heat conducting materials, springs etc.



Alutronic in Short

Customised
Extrusions

Standard
Extrusions

Heat Sink PCB
Mounting

Powerblobs

Heat Sink Sys-
tems

Insulation + Heat
Conduction

Mounting

Information

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Since 1977, apart from its range of standard heat sinks and casings extrusions, Alutronic also offers customised aluminium extrusions. More than 400 customised extrusions have come up since then period and have brought decisive technical and economical benefits to our customers.

If you need any additional information on customised extrusions or like to discuss the feasibility of your ideas, please feel free to contact us. We are glad to be able to help you!



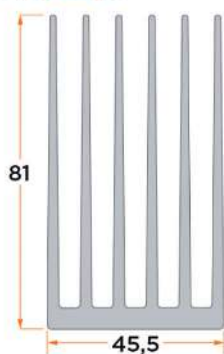
Alutronic delivers large batches quick and efficiently thanks to state-of-the-art twin-spindle technology!



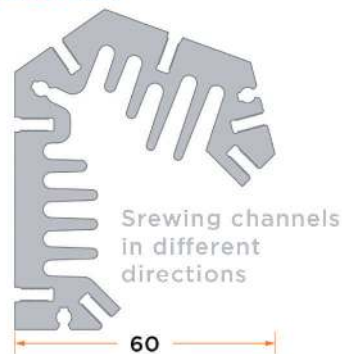
Alutronic offers logistical services, such as recycling packaging customized to your product and quantity.

- Material reduction and reduced need for mechanical machining, e.g. by finished and pressed screw channels
- Slide-in grooves for PCBs or other assembly functions
- Improved cooling power by thermal optimisation of the assembly and convection surface for the specific application
- Integration of plateaus improves the thermal transfer (e.g. as a substitute for gap pads with very large distance to the PCB/component/heat sink or in case the components around the heat source need to be thermally insulated -> as when applying peltier technology)
- Heat sink and housing walls in one part
- Low investment costs. One time tooling cost for extruded profiles are considerably lower than that of e.g. die-cast tools
- Minimum order quantities start with 500 kg
- Stocking of extrusion material for entire order volumes or of materials provided by you.
- Cost reduction for surface finishing. Anodising and chrome-plating for the whole extrusion bar is possible.
- Short lead times times for tool making to prototyping and for serial production.

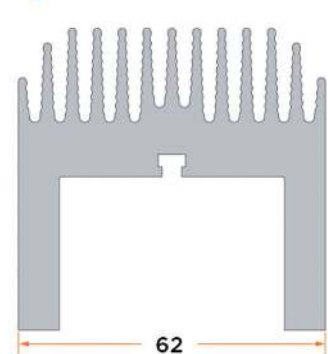
High Fin Design



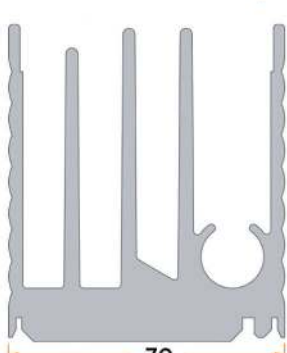
LED Heat Sink



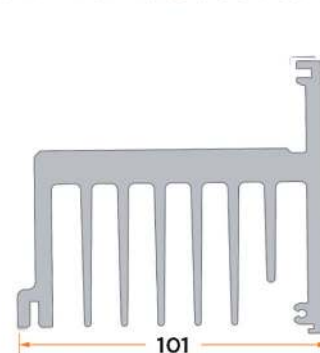
Casing Heat Sink Nut Groove



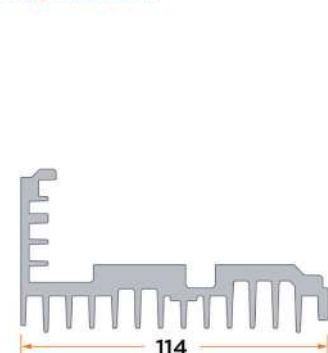
Heat Sink for Tubular Component



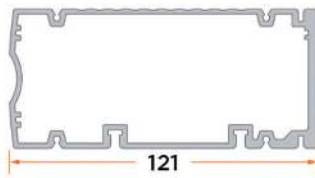
Heat Sink for Forced Convection



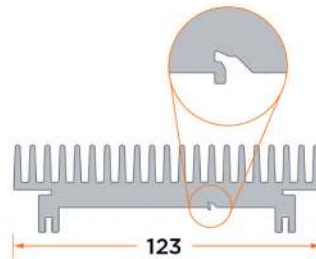
Casing Platform



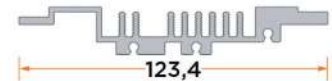
Casing with Screwing Channels and Siding Grooves



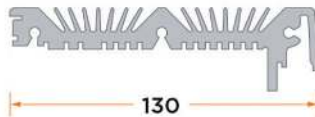
Casing Platform Clip Groove Screwing Channel



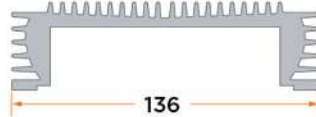
Casing Platform Screwing Channel



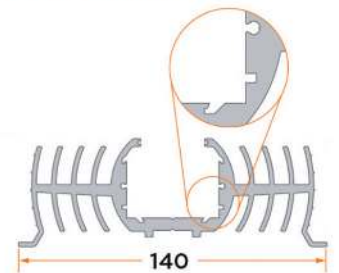
Casing Platform PCB Board Grooves Screwing Channels



Casing Heat Sink



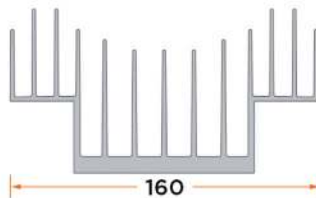
Heat Sink for Audio System Clip Grooves Siding Grooves Screwing Channels



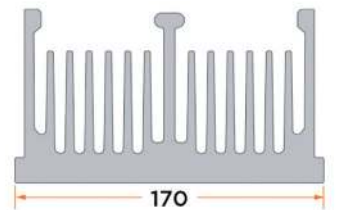
Casing Platform Screwing Channel



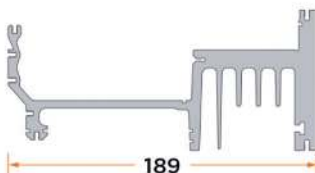
Two Plateaus



Heat Sink for Forced Convection with Twin Fans



Casing Platform Clip Groove Screwing Channel



Siding for Case



Casing Platform Screwing Channel





The fastest way to select your standard extrusion:
The ALUTRONIC EXTRUSION- FILTER at
www.alutronic.com/products/heat-sink-profile

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You will find the right cooling solution for your needs easily and reliably from more than 200 different heat sink extrusions.
You will find your choice of standard extrusions, sorted by profile width, in the following pages.
The display of the geometry and a detailed thermal diagram offer you an initial orientation.

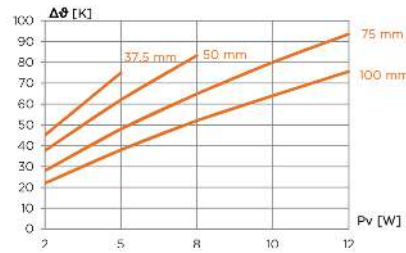
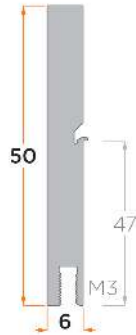
You will find detailed information on our website for each profile as well as 2D and 3D drawings available for download.

If you are unable to find the solution you are looking for in this catalogue, please call us up.

We are constantly expanding our range of products. You can also get the latest information by visiting our website at www.alutronic.de

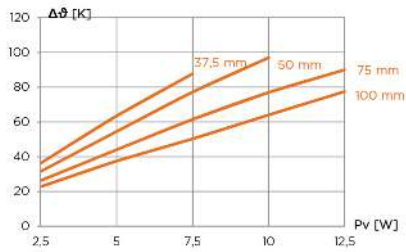
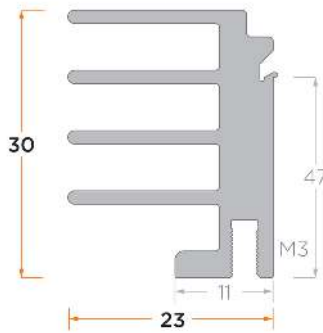
Appropriate clips can be found in the chapter Mounting / Mounting Clips

PR 101



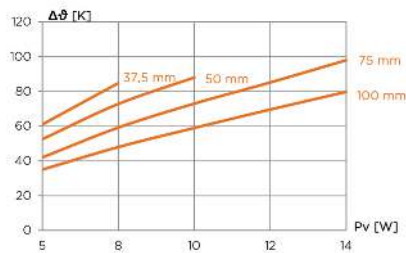
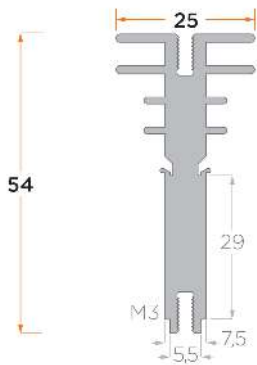
Pv [W]	RthK [K/W]			
2	22,5	18,8	14,0	11,0
5	15,0	12,4	9,6	7,6
8		10,4	8,1	6,5
10			8,0	6,4
12			7,8	6,3
mm	37,5	50	75	100
kg/m	0,77			

PR 290



Pv [W]	RthK [K/W]			
2,5	14,5	12,6	10,5	9,1
5	12,7	10,9	8,8	7,5
7,5	11,7	10,3	8,2	6,7
10		9,7	7,7	6,4
12,5			7,2	6,2
mm	37,5	50	75	100
kg/m	0,70			

PR 118

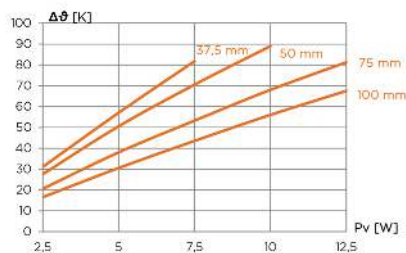
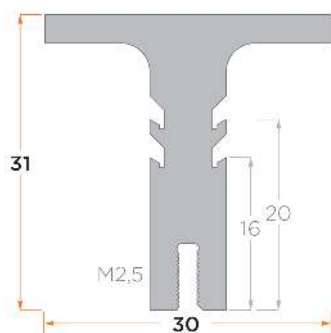


Pv [W]	RthK [K/W]			
5	12,2	10,5	8,4	7,0
8	10,6	9,1	7,4	6,0
10		8,8	7,3	5,9
12			7,1	5,8
14			7,0	5,7
mm	37,5	50	75	100
kg/m	1,16			



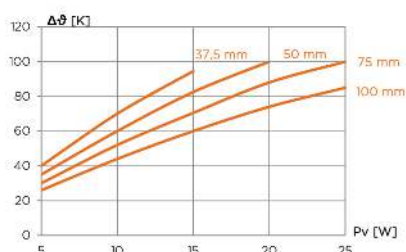
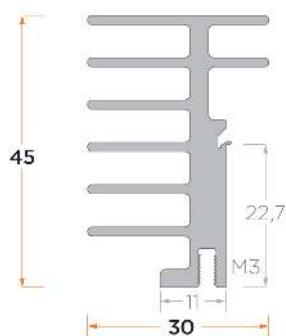
Alutronic offers pre-assembly of custom cut silicon foil onto your heat sink!

PR 116



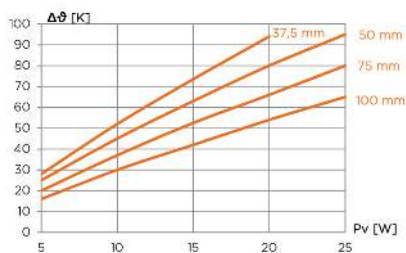
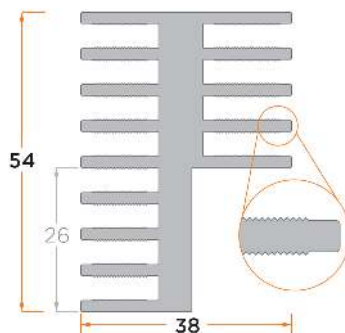
Pv [W]	RthK [K/W]			
2,5	12,4	11,0	8,2	6,6
5	11,4	10,1	7,6	6,1
7,5	10,9	9,4	7,1	5,8
10		8,9	6,8	5,6
12,5			6,5	5,4
mm	37,5	50	75	100
kg/m	0,79			

PR 127



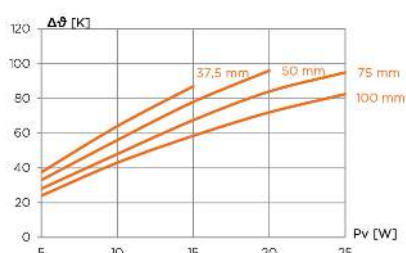
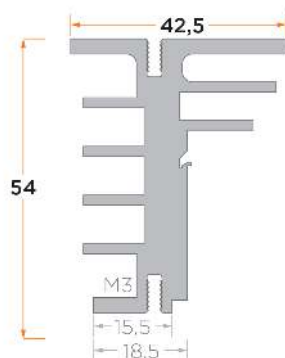
Pv [W]	RthK [K/W]			
5	8,0	7,0	6,0	5,2
10	7,0	6,0	5,2	4,4
15	6,3	5,5	4,7	4,0
20		5,0	4,4	3,7
25			4,0	3,4
mm	37,5	50	75	100
kg/m	1,07			

PR 136



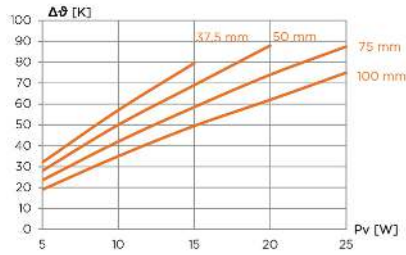
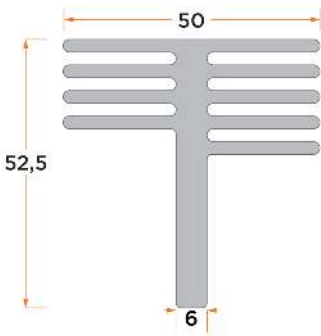
Pv [W]	RthK [K/W]			
5	5,6	5,0	4,0	3,2
10	5,2	4,5	3,7	3,0
15	4,9	4,2	3,5	2,8
20	4,7	4,0	3,3	2,7
25		3,8	3,2	2,6
mm	37,5	50	75	100
kg/m	2,07			

PR 119



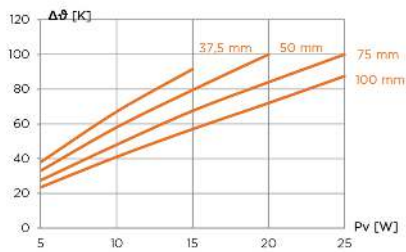
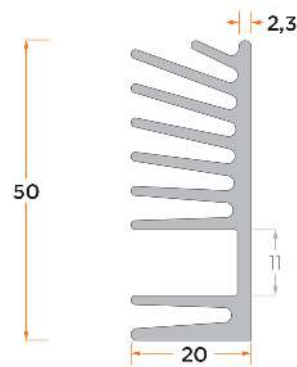
Pv [W]	RthK [K/W]			
5	7,5	6,6	5,6	4,8
10	6,4	5,6	4,8	4,3
15	5,8	5,2	4,5	3,9
20		4,8	4,2	3,6
25			3,8	3,3
mm	37,5	50	75	100
kg/m	1,95			

PR 268



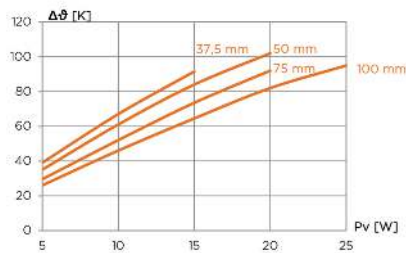
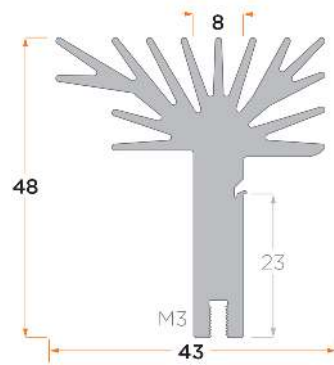
Pv [W]	RthK [K/W]			
5	6,4	5,6	4,7	3,8
10	5,7	5,0	4,2	3,5
15	5,3	4,6	3,9	3,3
20		4,4	3,7	3,1
25			3,5	3,0
mm	37,5	50	75	100
kg/m	2,14			

PR 139



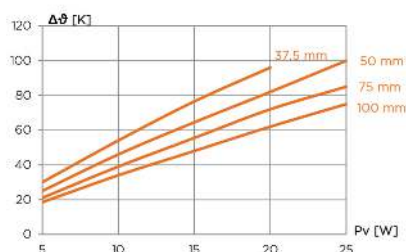
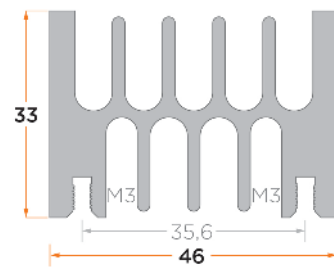
Pv [W]	RthK [K/W]			
5	7,6	6,6	5,5	4,7
10	6,7	5,8	4,8	4,1
15	6,1	5,3	4,5	3,8
20		5	4,2	3,6
25			4	3,5
mm	37,5	50	75	100
kg/m	1,08			

PR 292



Pv [W]	RthK [K/W]			
5	7,8	7,0	5,9	5,2
10	6,7	6,1	5,2	4,6
15	6,1	5,6	4,9	4,3
20		5,1	4,6	4,1
25				3,8
mm	37,5	50	75	100
kg/m	1,57			

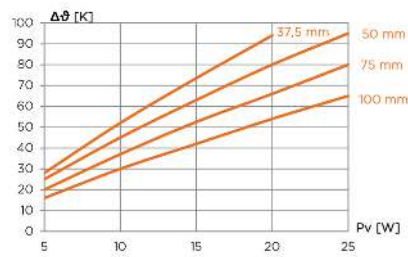
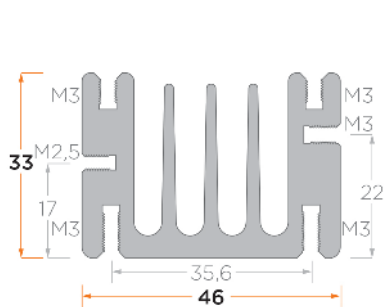
PR 137



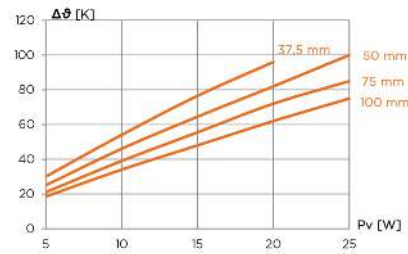
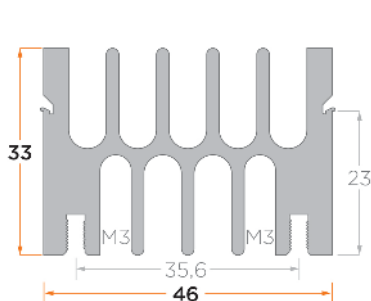
Pv [W]	RthK [K/W]			
5	6,0	5,0	4,2	3,7
10	5,4	4,6	3,9	3,4
15	5,1	4,3	3,7	3,2
20	4,8	4,1	3,6	3,1
25		4,0	3,4	3,0
mm	37,5	50	75	100
kg/m	1,89			

PR 138

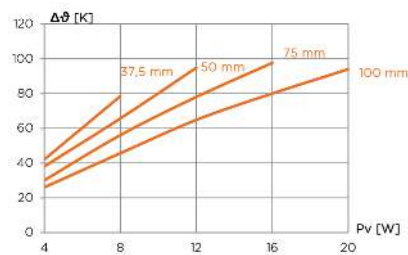
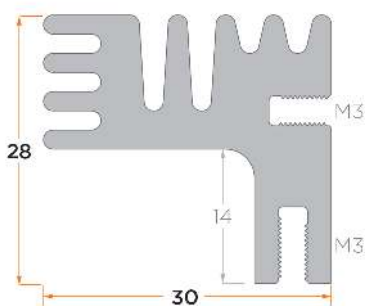
with integrated screw channel for fixing the semiconductor



Pv [W]	RthK [K/W]			
5	5,6	5,0	4,0	3,2
10	5,2	4,5	3,7	3,0
15	4,9	4,2	3,5	2,8
20	4,7	4,0	3,3	2,7
25		3,8	3,2	2,6
mm	37,5	50	75	100
kg/m	2,17			

PR 293

Pv [W]	RthK [K/W]			
5	6,0	5,0	4,2	3,7
10	5,4	4,6	3,9	3,4
15	5,1	4,3	3,7	3,2
20	4,8	4,1	3,6	3,1
25		4,0	3,4	3,0
mm	37,5	50	75	100
kg/m	1,76			

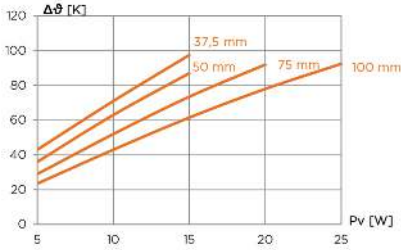
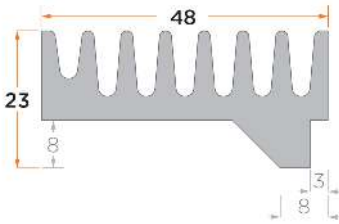
PR 234

Pv [W]	RthK [K/W]			
4	10,5	9,5	7,5	6,5
8	9,8	8,2	7,0	5,7
12		7,9	6,5	5,4
16			6,1	5,0
20				4,7
mm	37,5	50	75	100
kg/m	1,09			



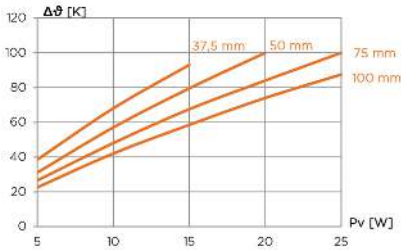
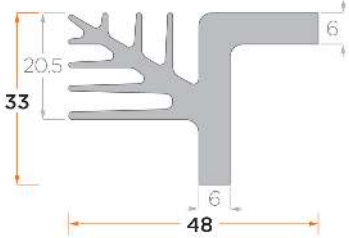
Heat sinks from Alutronic are 100% deburred. Carefully and with experience - this is our craft!

PR 132



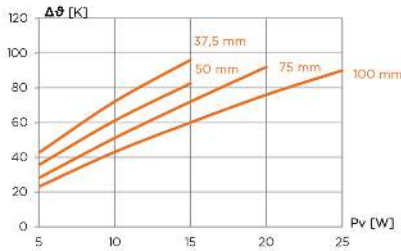
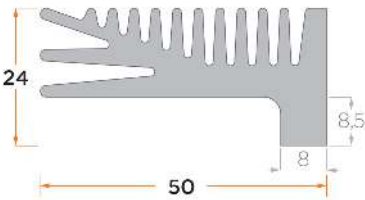
Pv [W]	RthK [K/W]			
5	8,6	7,2	5,8	4,7
10	7,1	6,3	5,2	4,3
15	6,5	5,8	4,9	4,1
20			4,6	3,9
25				3,7
mm	37,5	50	75	100
kg/m	1,37			

PR 143



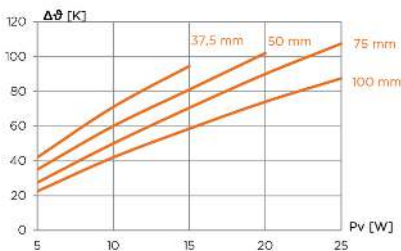
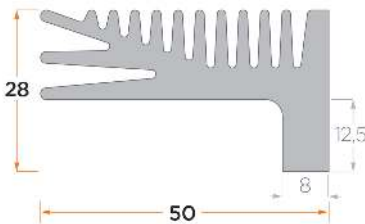
Pv [W]	RthK [K/W]			
5	7,7	6,2	5,3	4,5
10	6,8	5,7	4,8	4,2
15	6,2	5,3	4,5	3,9
20		5,0	4,2	3,7
25			4,0	3,5
mm	37,5	50	75	100
kg/m	1,35			

PR 144



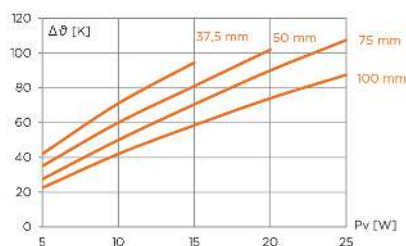
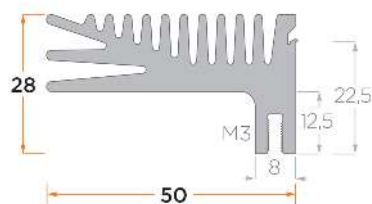
Pv [W]	RthK [K/W]			
5	8,5	7,1	5,6	4,6
10	7,2	6,1	5,1	4,3
15	6,4	5,5	4,8	4,0
20			4,6	3,8
25				3,6
mm	37,5	50	75	100
kg/m	1,61			

PR 133



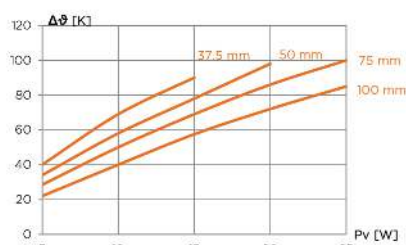
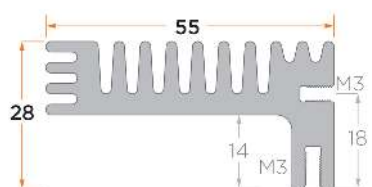
Pv [W]	RthK [K/W]			
5	8,4	7,0	5,5	4,5
10	7,1	6,0	5,0	4,2
15	6,3	5,4	4,7	3,9
20		5,1	4,5	3,7
25			4,3	3,5
mm	37,5	50	75	100
kg/m	1,75			

PR 233



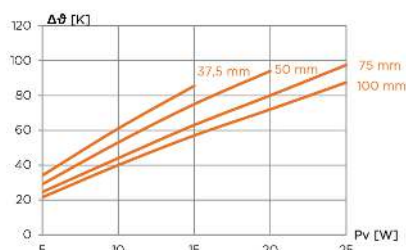
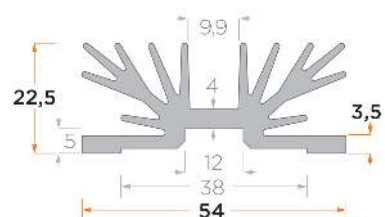
Pv [W]	RthK [K/W]			
5	8,4	7,0	5,5	4,5
10	7,1	6,0	5,0	4,2
15	6,3	5,4	4,7	3,9
20		5,1	4,5	3,7
25			4,3	3,5
mm	37,5	50	75	100
kg/m	1,64			

PR 126



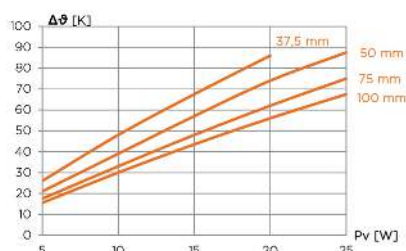
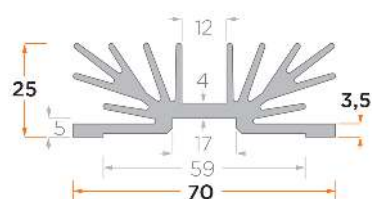
Pv [W]	RthK [K/W]			
5	8,0	6,8	5,7	4,4
10	6,9	5,8	5,0	4,0
15	6,0	5,2	4,6	3,9
20		4,9	4,3	3,6
25			4,0	3,4
mm	37,5	50	75	100
kg/m	1,65			

PR 134



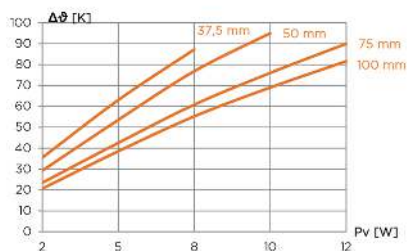
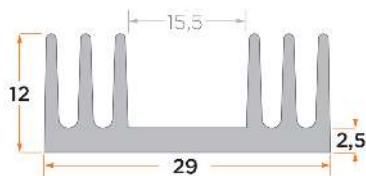
Pv [W]	RthK [K/W]			
5	6,8	5,8	4,9	4,3
10	6,1	5,3	4,4	4,0
15	5,7	5,0	4,2	3,8
20		4,7	4,0	3,6
25			3,9	3,5
mm	37,5	50	75	100
kg/m	1,33			

PR 135



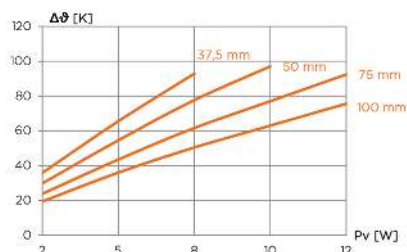
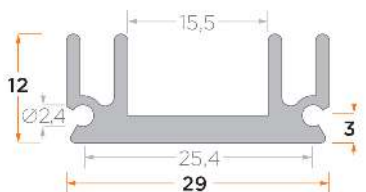
Pv [W]	RthK [K/W]			
5	5,2	4,2	3,5	3,1
10	4,8	3,9	3,3	3,0
15	4,5	3,8	3,2	2,9
20	4,3	3,7	3,1	2,8
25		3,5	3,0	2,7
mm	37,5	50	75	100
kg/m	1,80			

PR 20



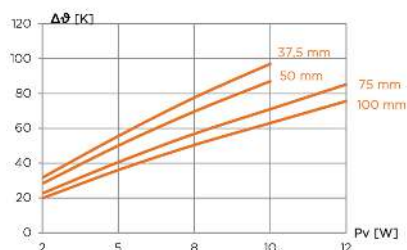
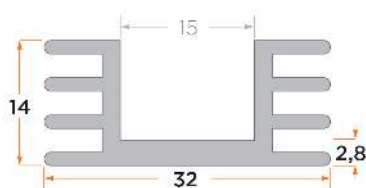
Pv [W]	RthK [K/W]			
2	17,7	14,6	11,7	10,3
5	12,6	10,7	8,5	7,7
8	10,9	9,6	7,6	6,9
10		9,5	7,6	6,9
12			7,5	6,8
mm	37,5	50	75	100
kg/m	0,39			

PR 23



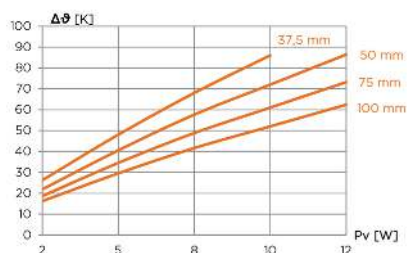
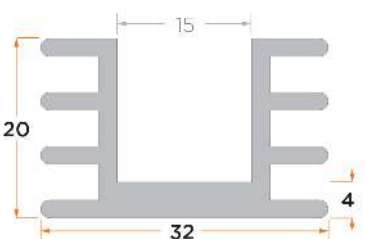
Pv [W]	RthK [K/W]			
2	17,9	14,9	11,9	9,7
5	13,1	10,9	8,7	7,2
8	11,6	9,7	7,7	6,3
10		9,7	7,7	6,3
12			7,7	6,3
mm	37,5	50	75	100
kg/m	0,40			

PR 27



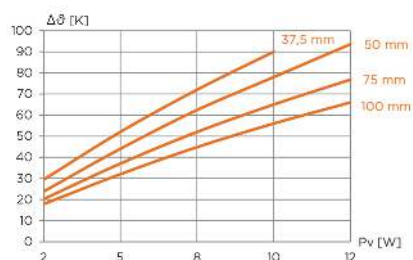
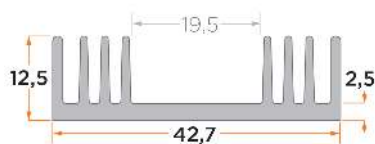
Pv [W]	RthK [K/W]			
2	15,8	14,1	11,3	9,9
5	11,1	10,0	8,1	7,2
8	9,7	8,7	7,1	6,3
10	9,7	8,7	7,1	6,3
12			7,1	6,3
mm	37,5	50	75	100
kg/m	0,46			

PR 25



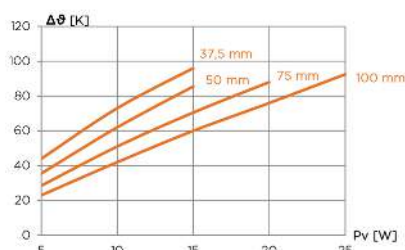
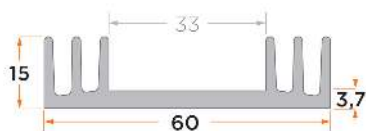
Pv [W]	RthK [K/W]			
2	13,1	10,9	9,3	8,1
5	9,6	8,1	6,9	5,9
8	8,5	7,2	6,1	5,2
10	8,6	7,2	6,1	5,2
12		7,2	6,1	5,2
mm	37,5	50	75	100
kg/m	0,65			

PR 22



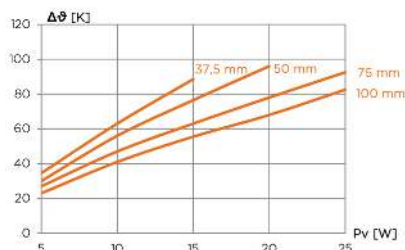
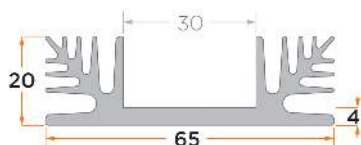
Pv [W]	RthK [K/W]			
2	14,7	11,9	10,1	8,9
5	10,4	8,8	7,4	6,4
8	9,0	7,8	6,5	5,6
10	9,0	7,8	6,5	5,6
12		7,8	6,4	5,5
mm	37,5	50	75	100
kg/m	0,57			

PR 35



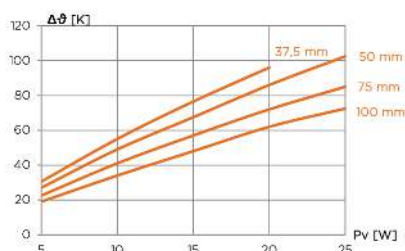
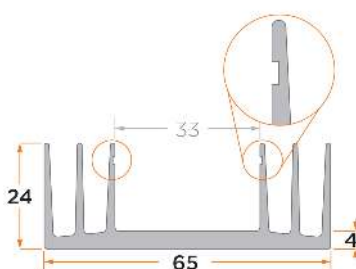
Pv [W]	RthK [K/W]			
5	8,8	7,1	5,7	4,6
10	7,3	6,2	5,1	4,2
15	6,4	5,7	4,7	4,0
20			4,4	3,8
25				3,7
mm	37,5	50	75	100
kg/m	0,96			

PR 125



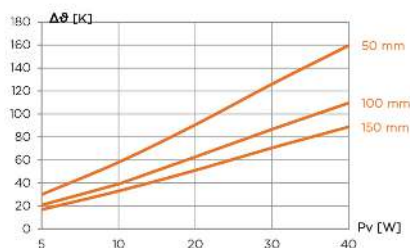
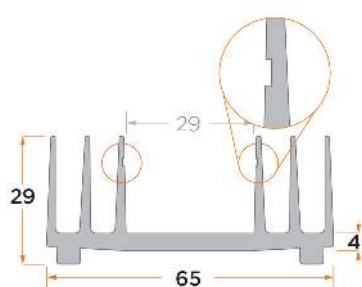
Pv [W]	RthK [K/W]			
5	6,9	6,0	5,4	4,6
10	6,3	5,6	4,7	4,1
15	5,9	5,1	4,2	3,7
20		4,8	3,9	3,4
25			3,7	3,3
mm	37,5	50	75	100
kg/m	1,36			

PR 40



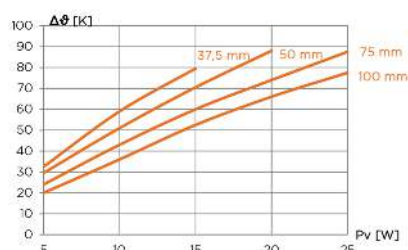
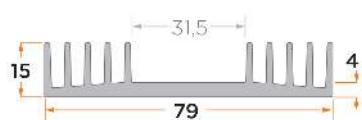
Pv [W]	RthK [K/W]			
5	6,1	5,4	4,5	3,8
10	5,5	4,9	4,1	3,4
15	5,1	4,5	3,8	3,2
20	4,8	4,3	3,6	3,1
25		4,1	3,4	2,9
mm	37,5	50	75	100
kg/m	1,22			

PR 50



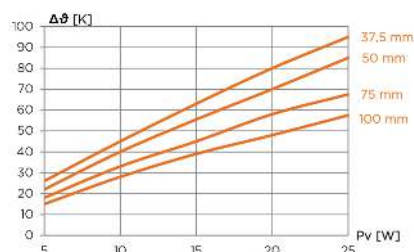
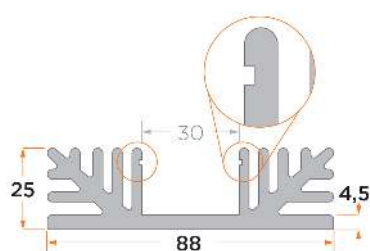
Pv [W]	RthK [K/W]		
5	6,0	4,2	3,4
10	5,8	3,9	3,3
20	4,5	3,1	2,6
30	4,2	2,9	2,4
40	4,0	2,7	2,2
mm	50	100	150
kg/m	1,28		

PR 65



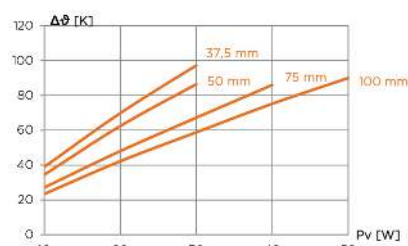
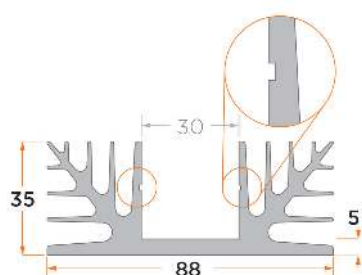
Pv [W]	RthK [K/W]			
5	6,5	5,9	4,8	4,0
10	5,9	5,1	4,3	3,6
15	5,3	4,7	4,0	3,5
20		4,4	3,7	3,3
25			3,5	3,1
mm	37,5	50	75	100
kg/m	1,22			

PR 128



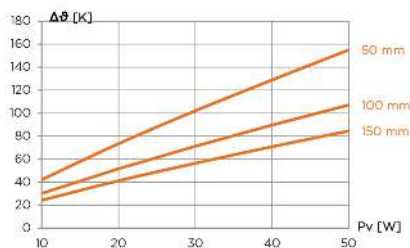
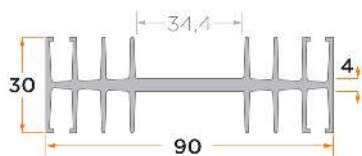
Pv [W]	RthK [K/W]			
5	5,2	4,4	3,6	3,0
10	4,5	4,0	3,3	2,8
15	4,2	3,7	3,0	2,6
20	4,0	3,5	2,9	2,4
25	3,8	3,4	2,7	2,3
mm	37,5	50	75	100
kg/m	2,97			

PR 130



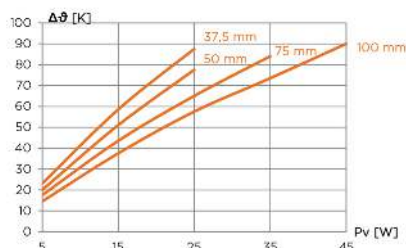
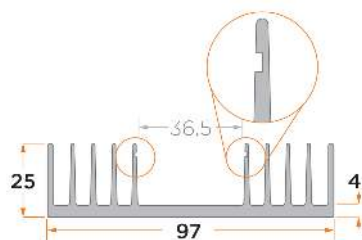
Pv [W]	RthK [K/W]			
10	3,89	3,44	2,71	2,34
20	3,49	3,12	2,40	2,11
30	3,24	2,88	2,24	1,96
40			2,15	1,88
50				1,80
mm	37,5	50	75	100
kg/m	2,94			

PR 198



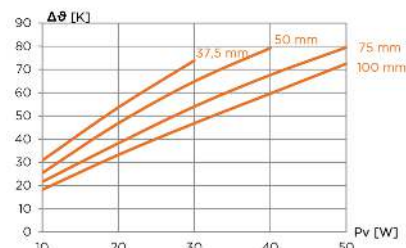
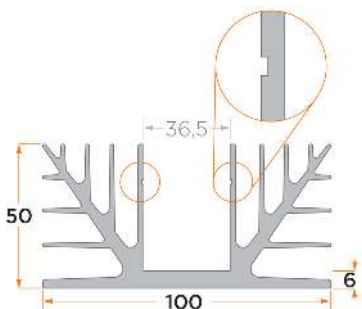
Pv [W]	RthK [K/W]		
10	4,2	3,0	2,4
20	3,7	2,6	2,1
30	3,4	2,4	1,9
40	3,2	2,2	1,8
50	3,1	2,1	1,7
mm	50	100	150
kg/m	1,54		

PR 90



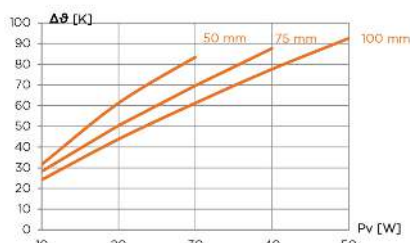
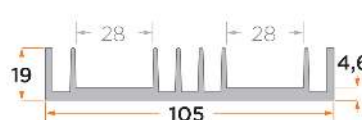
Pv [W]	RthK [K/W]			
5	4,6	4,0	3,5	2,9
15	3,9	3,4	2,9	2,5
25	3,5	3,1	2,6	2,3
35			2,4	2,1
45				2,0
mm	37,5	50	75	100
kg/m	1,92			

PR 131



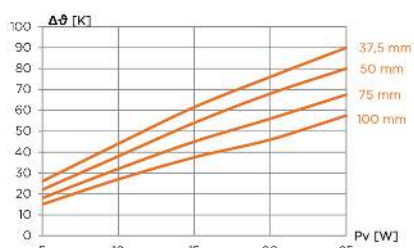
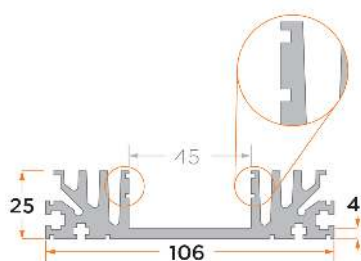
Pv [W]	RthK [K/W]			
10	3,08	2,54	2,16	1,82
20	2,68	2,34	1,91	1,66
30	2,46	2,16	1,80	1,56
40		1,98	1,69	1,49
50			1,59	1,45
mm	37,5	50	75	100
kg/m	4,32			

PR 140



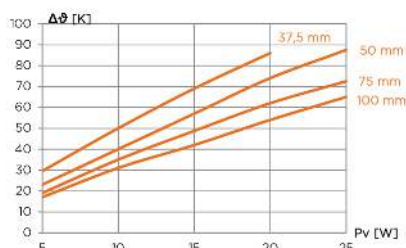
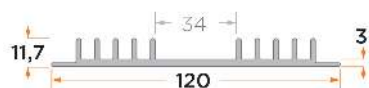
Pv [W]	RthK [K/W]		
10	3,16	2,83	2,42
20	3,06	2,52	2,19
30	2,78	2,32	2,04
40		2,19	1,94
50			1,85
mm	50	75	100
kg/m	1,93		

PR 129



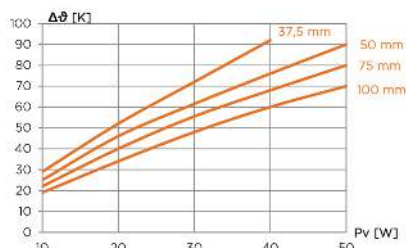
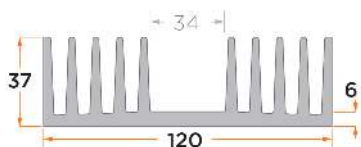
Pv [W]	RthK [K/W]			
5	5,2	4,4	3,6	3,0
10	4,4	3,8	3,2	2,7
15	4,1	3,6	3,0	2,5
20	3,8	3,4	2,8	2,3
25	3,6	3,2	2,7	2,3
mm	37,5	50	75	100
kg/m	2,70			

PR 100



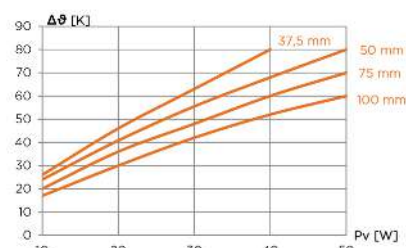
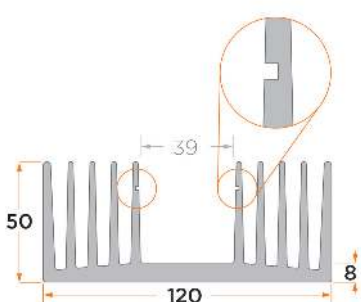
Pv [W]	RthK [K/W]			
5	5,9	4,6	3,8	3,4
10	5,0	4,0	3,5	3,1
15	4,6	3,8	3,3	2,8
20	4,3	3,7	3,1	2,7
25		3,5	2,9	2,6
mm	37,5	50	75	100
kg/m	1,35			

PR 93



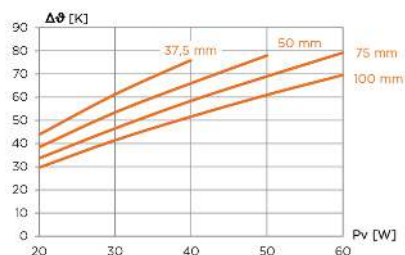
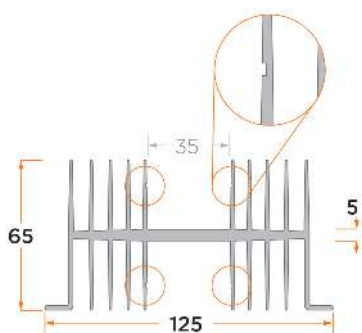
Pv [W]	RthK [K/W]			
10	2,9	2,5	2,2	1,9
20	2,6	2,3	2,0	1,7
30	2,4	2,1	1,9	1,6
40	2,3	1,9	1,7	1,5
50		1,8	1,6	1,4
mm	37,5	50	75	100
kg/m	4,93			

PR 95



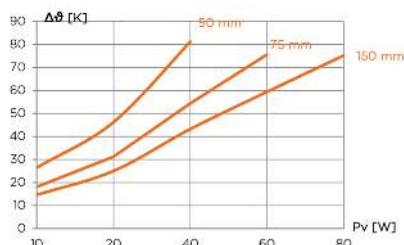
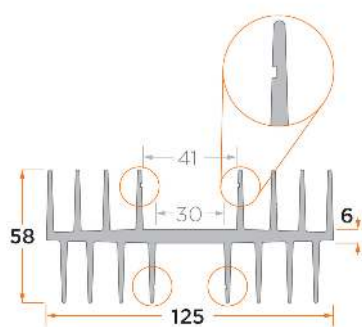
Pv [W]	RthK [K/W]			
10	2,6	2,4	2,0	1,7
20	2,3	2,0	1,8	1,5
30	2,1	1,9	1,6	1,4
40	2,0	1,7	1,5	1,3
50		1,6	1,4	1,2
mm	37,5	50	75	100
kg/m	5,92			

PR 192



Pv [W]	RthK [K/W]			
20	2,19	1,92	1,68	1,48
30	2,04	1,78	1,55	1,38
40	1,90	1,65	1,46	1,29
50		1,56	1,38	1,22
60			1,32	1,16
mm	37,5	50	75	100
kg/m	4,33			

PR 362

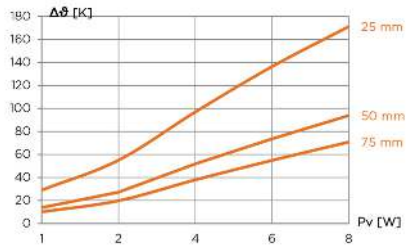
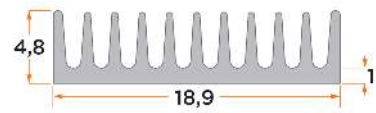


Pv [W]	RthK [K/W]		
10	2,6	1,8	1,5
20	2,3	1,6	1,3
40	2,0	1,4	1,1
60	1,9	1,3	1,0
80	1,8	1,2	0,9
mm	50	100	150
kg/m	4,29		



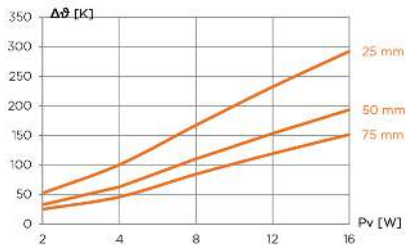
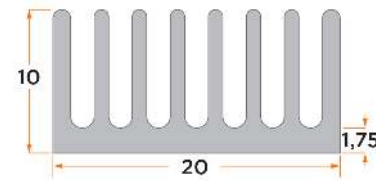
Heat sinks from Alutronic are 100% deburred. Carefully and with experience - this is our craft!

PR 8



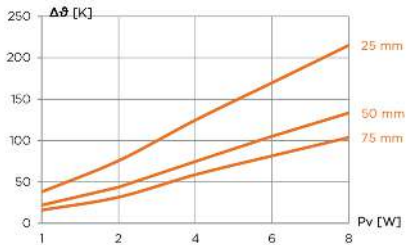
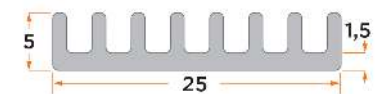
Pv [W]	RthK [K/W]		
1	29,0	13,9	10,1
2	27,5	13,6	9,9
4	24,2	12,9	9,5
6	22,7	12,3	9,1
8	21,4	11,7	8,9
mm	25	50	75
kg/m	0,13		

PR 45



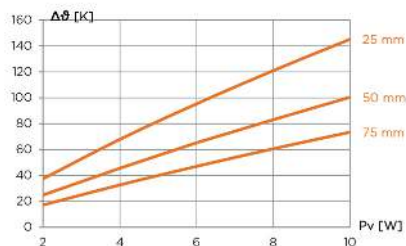
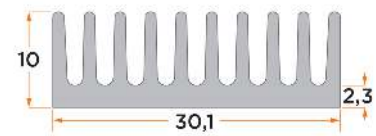
Pv [W]	RthK [K/W]		
2	26,3	16,6	12,7
4	25,2	15,8	11,6
8	20,9	13,8	10,6
12	19,4	12,8	10,0
16	18,3	12,1	9,5
mm	25	50	75
kg/m	0,28		

PR 46



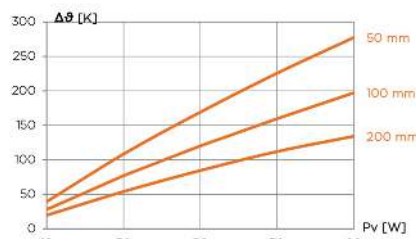
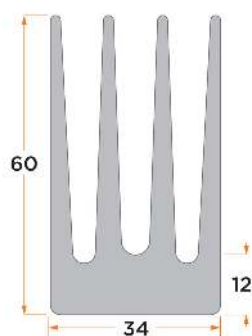
Pv [W]	RthK [K/W]		
1	38,0	21,9	16,0
2	37,8	21,8	15,8
4	31,2	18,7	14,7
6	28,3	17,5	13,6
8	26,9	16,7	13,0
mm	25	50	75
kg/m	0,20		

PR 47



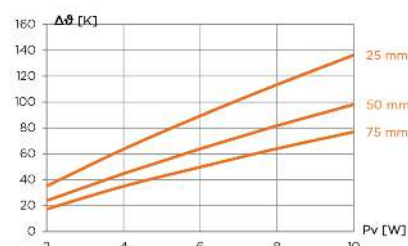
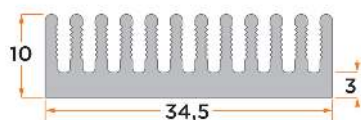
Pv [W]	RthK [K/W]		
2	18,7	12,4	8,6
4	17,0	11,4	8,2
6	15,9	10,9	7,8
8	15,1	10,4	7,6
10	14,5	10,0	7,3
mm	25	50	75
kg/m	0,48		

PR 389



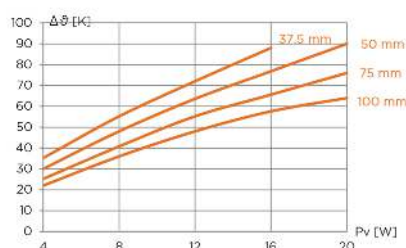
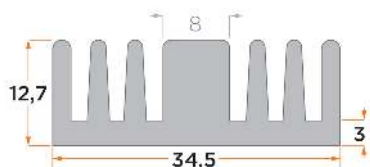
Pv [W]	RthK [K/W]		
10	3,9	2,8	2,0
30	3,6	2,6	1,8
50	3,4	2,4	1,7
70	3,2	2,3	1,6
90	3,1	2,2	1,5
mm	50	100	200
kg/m	2,84		

PR 48



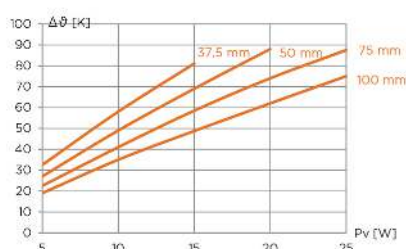
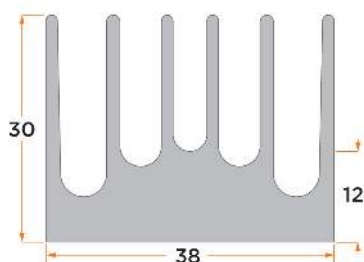
Pv [W]	RthK [K/W]		
2	17,54	11,95	8,65
4	15,89	11,17	8,73
6	14,89	10,64	8,29
8	14,18	10,21	8,00
10	13,63	9,81	7,69
mm	25	50	75
kg/m	0,56		

PR 36



Pv [W]	RthK [K/W]			
4	8,8	7,5	6,3	5,5
8	6,9	6,0	5,1	4,5
12	6,0	5,3	4,6	4,0
16	5,5	4,8	4,1	3,6
20		4,5	3,8	3,2
mm	37,5	50	75	100
kg/m	0,83			

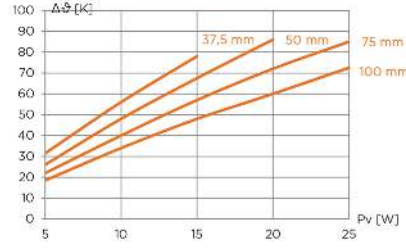
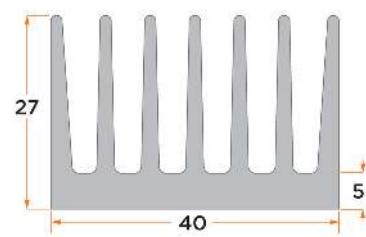
PR 146



Pv [W]	RthK [K/W]			
5	6,5	5,4	4,5	3,8
10	5,8	4,9	4,1	3,5
15	5,4	4,6	3,9	3,3
20		4,4	3,7	3,1
25			3,5	3,0
mm	37,5	50	75	100
kg/m	1,54			

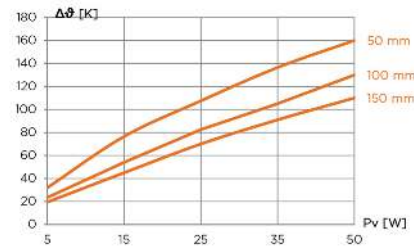
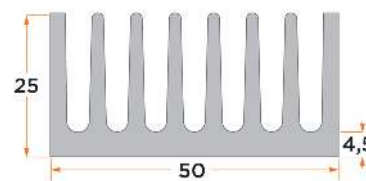
Alutronic in Short
Customised Extrusions
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PR 313



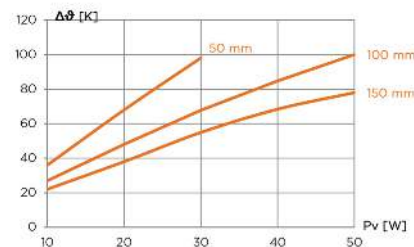
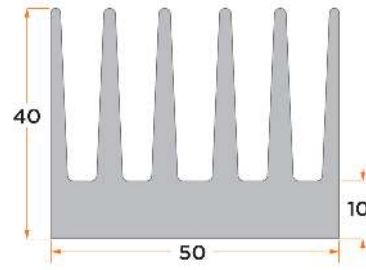
Pv [W]	RthK [K/W]			
5	6,3	5,2	4,4	3,7
10	5,6	4,8	4,0	3,4
15	5,2	4,5	3,8	3,2
20		4,3	3,6	3,0
25			3,4	2,9
mm	37,5	50	75	100
kg/m	1,40			

PR 312



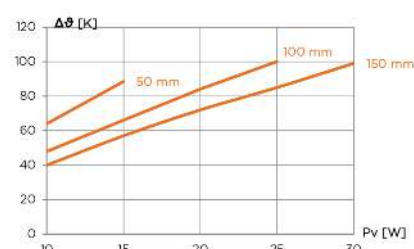
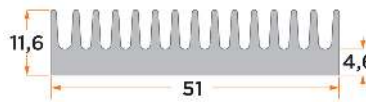
Pv [W]	RthK [K/W]		
5	6,4	4,7	3,9
15	5,1	3,6	3,0
25	4,3	3,3	2,8
35	3,9	3,0	2,6
50	3,2	2,6	2,2
mm	50	100	150
kg/m	1,79		

PR 289



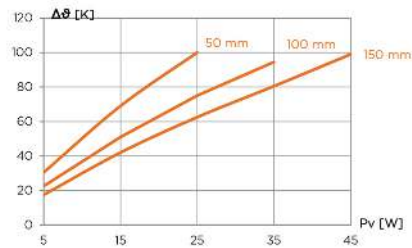
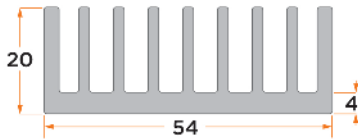
Pv [W]	RthK [K/W]		
10	3,6	2,7	2,2
20	3,4	2,4	1,9
30	3,3	2,3	1,8
40		2,1	1,7
50		2,0	1,6
mm	50	100	150
kg/m	2,68		

PR 151



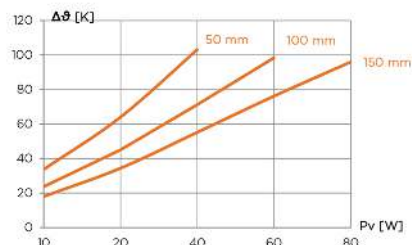
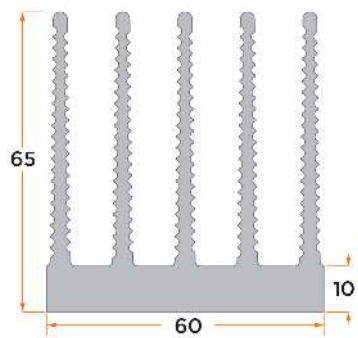
Pv [W]	RthK [K/W]		
10	6,4	4,8	4,0
15	5,9	4,4	3,8
20		4,2	3,6
25		4,0	3,4
30			3,3
mm	50	100	150
kg/m	1,05		

PR 159



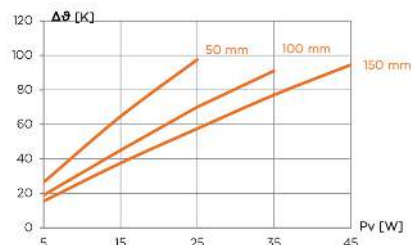
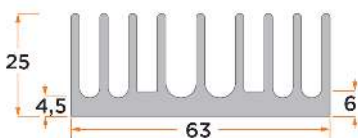
Pv [W]	RthK [K/W]		
5	6,1	4,5	3,5
15	4,6	3,4	2,8
25	4,0	3,0	2,5
35		2,7	2,3
45			2,2
mm	50	100	150
kg/m	1,49		

PR 398



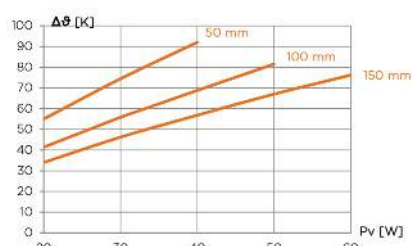
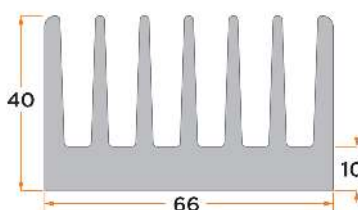
Pv [W]	RthK [K/W]		
10	3,37	2,37	1,80
20	3,20	2,25	1,72
40	2,58	1,78	1,38
60	2,40	1,64	1,27
80	2,28	1,56	1,20
mm	50	100	150
kg/m	3,65		

PR 296



Pv [W]	RthK [K/W]		
5	5,3	3,8	3,1
15	4,3	3,0	2,5
25	3,9	2,8	2,3
35		2,6	2,2
45			2,1
mm	50	100	150
kg/m	1,86		

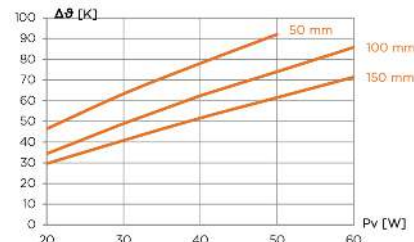
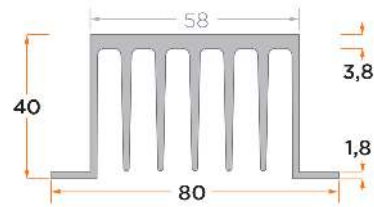
PR 168



Pv [W]	RthK [K/W]		
20	2,75	2,07	1,70
30	2,48	1,86	1,54
40	2,30	1,72	1,42
50		1,63	1,34
60		1,54	1,27
mm	50	100	150
kg/m	3,72		

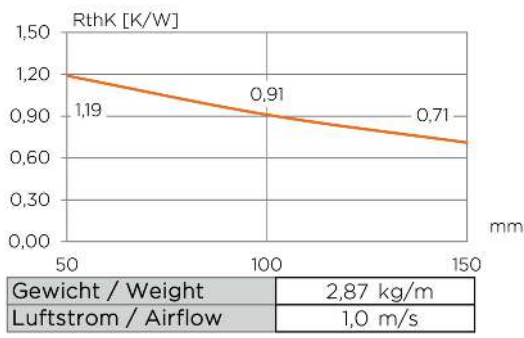
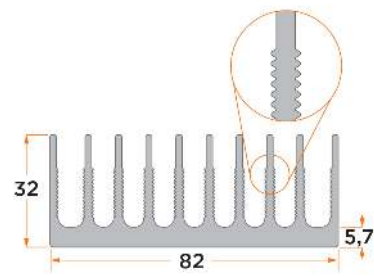
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PR 181

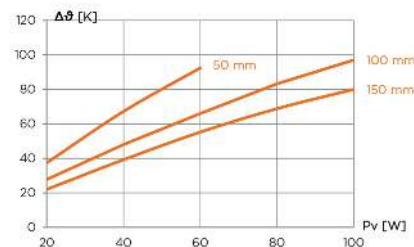
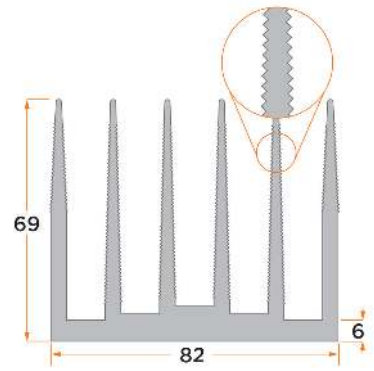


Pv [W]	RthK [K/W]		
20	2,32	1,72	1,48
30	2,11	1,63	1,36
40	1,95	1,56	1,29
50	1,84	1,48	1,23
60		1,43	1,19
mm	50	100	150
kg/m	1,99		

PR 367

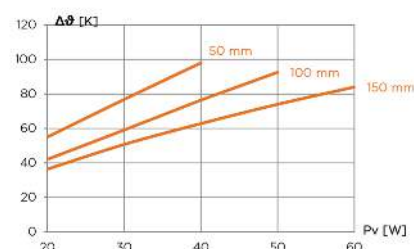
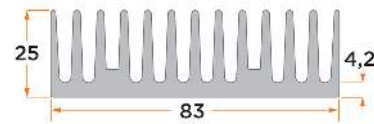


PR 314



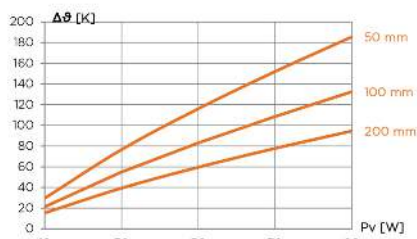
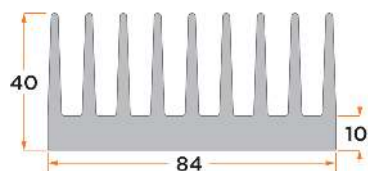
Pv [W]	RthK [K/W]		
20	1,87	1,39	1,10
40	1,68	1,20	0,98
60	1,54	1,10	0,92
80		1,04	0,86
100		0,97	0,80
mm	50	100	150
kg/m	4,95		

PR 193



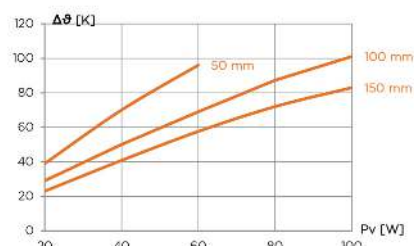
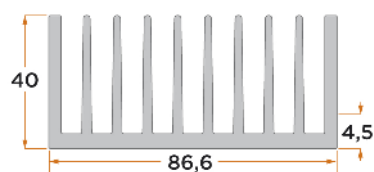
Pv [W]	RthK [K/W]		
20	2,75	2,10	1,82
30	2,56	1,97	1,69
40	2,45	1,91	1,57
50		1,85	1,48
60			1,40
mm	50	100	150
kg/m	2,92		

PR 388



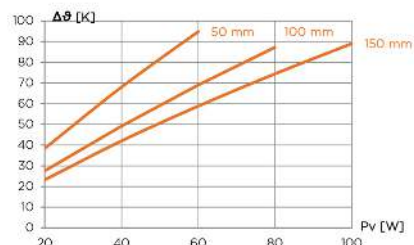
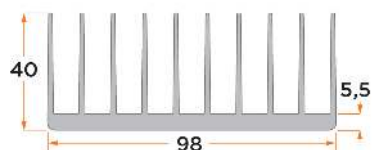
Pv [W]	RthK [K/W]		
10	2,96	2,14	1,54
30	2,55	1,83	1,31
50	2,32	1,66	1,19
70	2,17	1,55	1,11
90	2,06	1,47	1,05
mm	50	100	200
kg/m	4,43		

PR 244



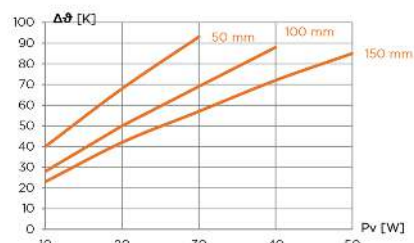
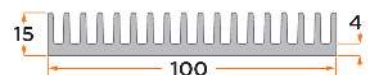
Pv [W]	RthK [K/W]		
20	1,95	1,45	1,15
40	1,75	1,25	1,02
60	1,60	1,15	0,96
80		1,09	0,90
100		1,01	0,83
mm	50	100	150
kg/m	3,66		

PR 182



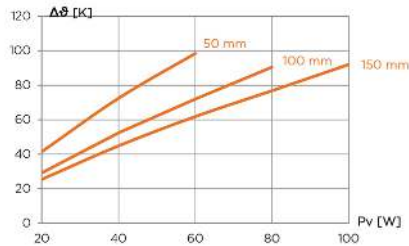
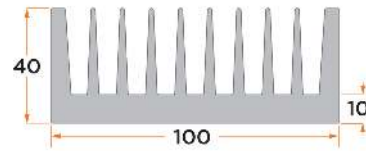
Pv [W]	RthK [K/W]		
20	1,92	1,38	1,16
40	1,70	1,23	1,05
60	1,58	1,15	0,98
80		1,09	0,93
100			0,89
mm	50	100	150
kg/m	3,04		

PR 161



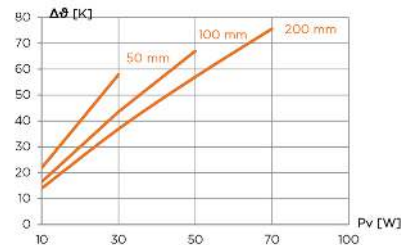
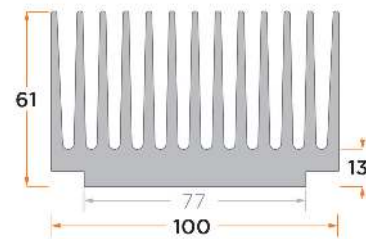
Pv [W]	RthK [K/W]		
10	4,0	2,8	2,3
20	3,4	2,5	2,1
30	3,1	2,3	1,9
40		2,2	1,8
50			1,7
mm	50	100	150
kg/m	2,15		

PR 173



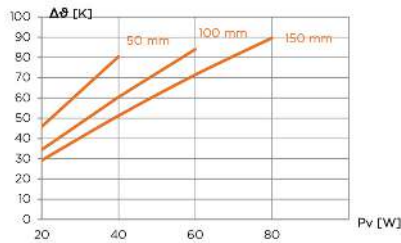
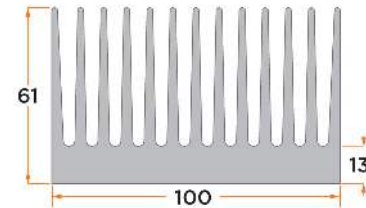
Pv [W]	RthK [K/W]		
20	2,07	1,46	1,27
40	1,81	1,31	1,12
60	1,64	1,20	1,03
80		1,13	0,96
100			0,92
mm	50	100	150
kg/m	5,77		

PR 400



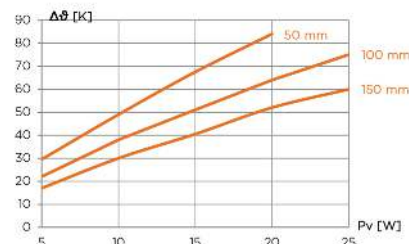
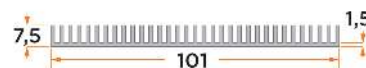
Pv [W]	RthK [K/W]		
10	2,19	1,65	1,40
30	1,93	1,45	1,23
50		1,34	1,14
70			1,08
100			
mm	50	100	200
kg/m	8,30		

PR 213



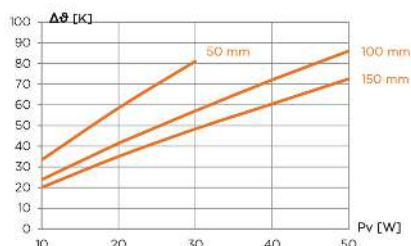
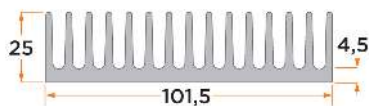
Pv [W]	RthK [K/W]		
20	2,29	1,72	1,46
40	2,01	1,51	1,28
60		1,40	1,19
80			1,12
mm	50	100	150
kg/m	8,43		

PR 167



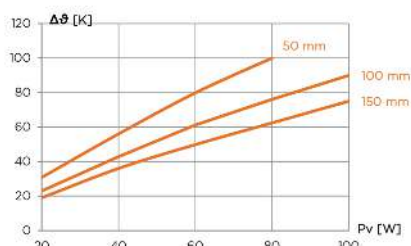
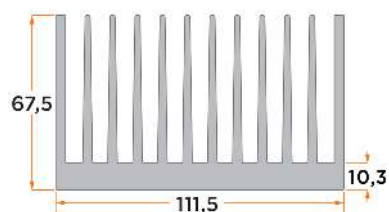
Pv [W]	RthK [K/W]		
5	5,9	4,4	3,4
10	4,9	3,8	3,0
15	4,5	3,4	2,7
20	4,2	3,2	2,6
25		3,0	2,4
mm	50	100	150
kg/m	1,09		

PR 297



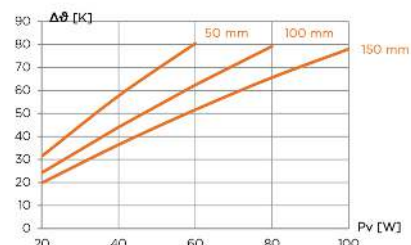
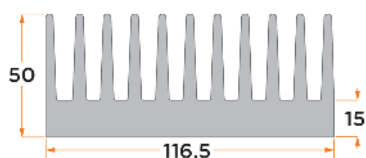
Pv [W]	RthK [K/W]		
10	3,34	2,39	2,01
20	2,92	2,07	1,75
30	2,70	1,90	1,61
40		1,80	1,51
50		1,72	1,45
mm	50	100	150
kg/m	3,37		

PR 211



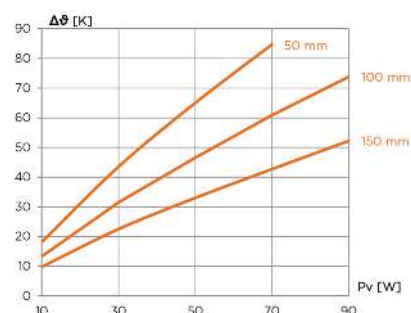
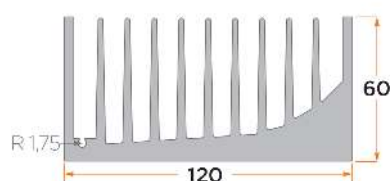
Pv [W]	RthK [K/W]		
20	1,54	1,15	0,95
40	1,40	1,07	0,90
60	1,33	1,02	0,83
80	1,25	0,95	0,78
100		0,90	0,75
mm	50	100	150
kg/m	9,16		

PR 176



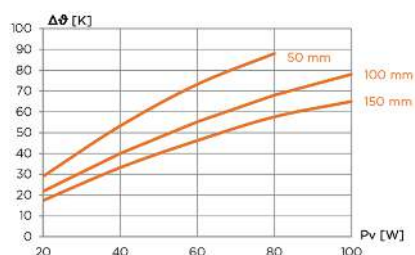
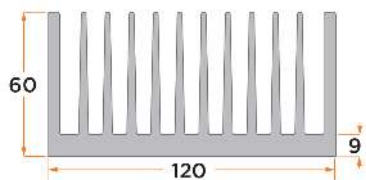
Pv [W]	RthK [K/W]		
20	1,57	1,21	0,99
40	1,44	1,10	0,91
60	1,34	1,04	0,86
80		0,99	0,82
100			0,78
mm	50	100	150
kg/m	8,65		

PR 373



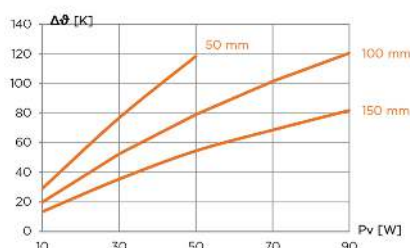
Pv [W]	RthK [K/W]		
10	1,81	1,33	0,98
30	1,45	1,05	0,75
50	1,30	0,93	0,66
70	1,21	0,87	0,61
90		0,82	0,58
mm	50	100	150
kg/m	8,43		

PR 403



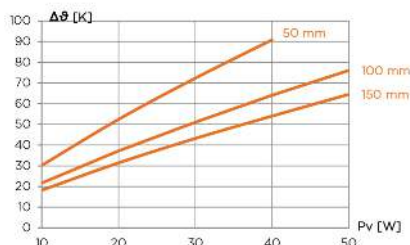
Pv [W]	RthK [K/W]		
20	1,45	1,09	0,87
40	1,33	1	0,83
60	1,22	0,92	0,77
80	1,1	0,85	0,72
100		0,78	0,65
mm	50	100	150
kg/m	8,40		

PR 331



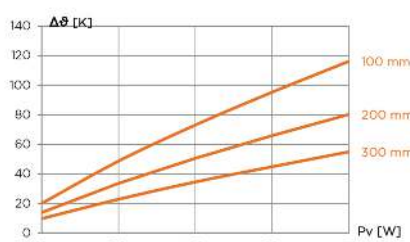
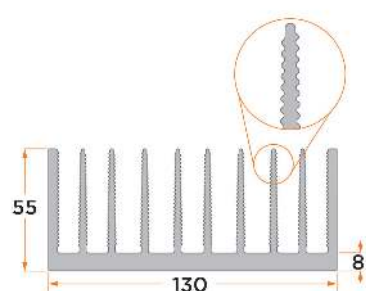
Pv [W]	RthK [K/W]		
10	2,91	1,99	1,34
30	2,56	1,75	1,18
50	2,37	1,58	1,09
70		1,45	0,98
90		1,34	0,91
mm	50	100	150
kg/m	3,07		

PR 228



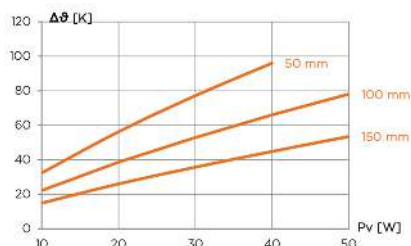
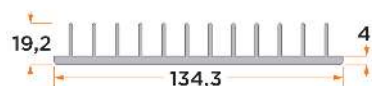
Pv [W]	RthK [K/W]		
10	3,02	2,17	1,82
20	2,62	1,86	1,57
30	2,41	1,70	1,44
40	2,27	1,60	1,35
50		1,52	1,29
mm	50	100	150
kg/m	4,22		

PR 377



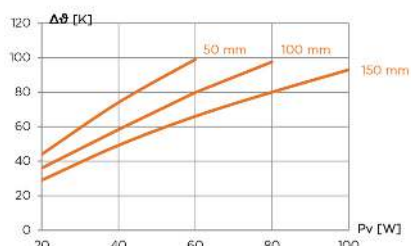
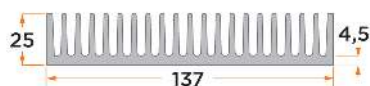
Pv [W]	RthK [K/W]		
10	2,00	1,39	0,97
30	1,62	1,12	0,76
50	1,46	1,01	0,69
70	1,36	0,94	0,64
90	1,29	0,89	0,61
mm	100	200	300
kg/m	6,63		

PR 378



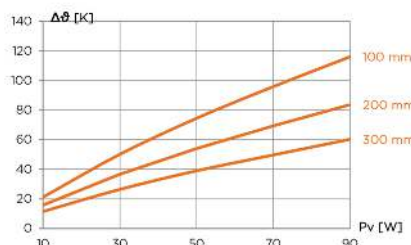
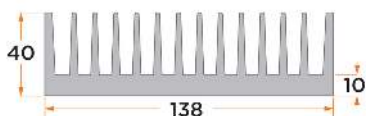
Pv [W]	RthK [K/W]		
10	3,24	2,22	1,49
20	2,81	1,93	1,30
30	2,57	1,76	1,19
40	2,40	1,65	1,12
50		1,56	1,07
mm	50	100	150
kg/m	2,22		

PR 287



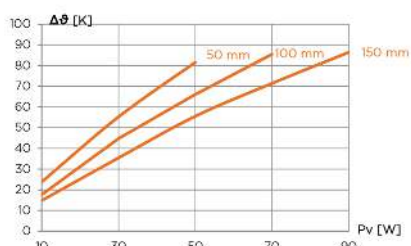
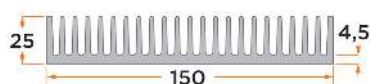
Pv [W]	RthK [K/W]		
20	2,20	1,80	1,45
40	1,85	1,46	1,23
60	1,65	1,33	1,10
80		1,22	1,00
100			0,93
mm	50	100	150
kg/m	4,68		

PR 381



Pv [W]	RthK [K/W]		
10	2,12	1,58	1,15
30	1,67	1,22	0,88
50	1,49	1,08	0,78
70	1,37	0,99	0,71
90	1,29	0,93	0,67
mm	100	200	300
kg/m	7,29		

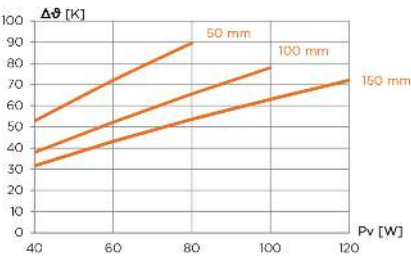
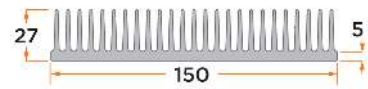
PR 148



Pv [W]	RthK [K/W]		
10	2,38	1,76	1,48
30	1,84	1,49	1,18
50	1,63	1,32	1,11
70		1,22	1,02
90			0,96
mm	50	100	150
kg/m	5,17		

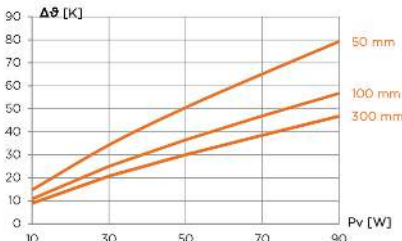
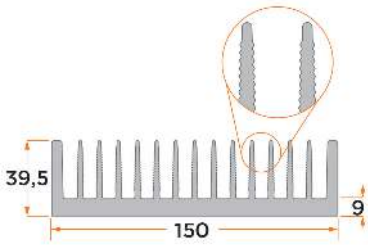
With Fins on One Side (Ridged Profile)

PR 160



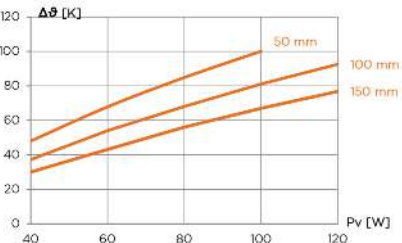
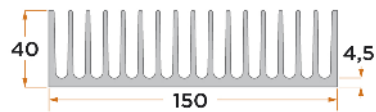
Pv [W]	RthK [K/W]		
40	1,32	0,95	0,79
60	1,20	0,87	0,72
80	1,12	0,82	0,67
100		0,78	0,63
120			0,60
mm	50	100	150
kg/m	8,01		

PR 369



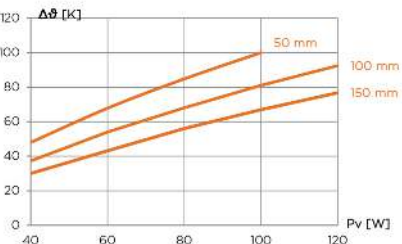
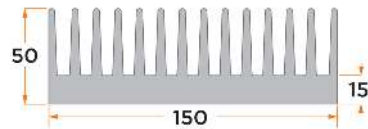
Pv [W]	RthK [K/W]		
10	1,47	1,08	0,89
30	1,14	0,83	0,69
50	1,01	0,73	0,60
70	0,93	0,67	0,55
90	0,88	0,63	0,52
mm	50	100	300
kg/m	7,27		

PR 242



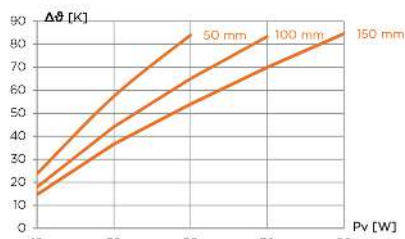
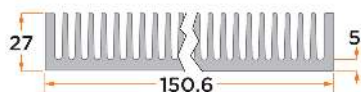
Pv [W]	RthK [K/W]		
40	1,20	0,93	0,75
60	1,13	0,90	0,72
80	1,06	0,85	0,70
100	1,00	0,81	0,67
120		0,77	0,64
mm	50	100	150
kg/m	6,28		

PR 172



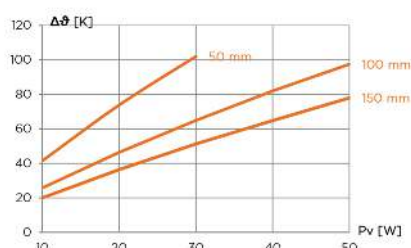
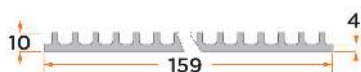
Pv [W]	RthK [K/W]		
40	1,19	0,97	0,80
60	1,10	0,90	0,74
80	1,05	0,84	0,70
100		0,80	0,66
120			0,63
mm	50	100	150
kg/m	11,97		

PR 162



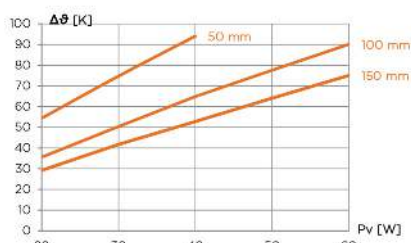
Pv [W]	RthK [K/W]		
10	2,37	1,79	1,46
30	1,91	1,47	1,22
50	1,68	1,30	1,08
70		1,19	1,00
90			0,94
mm	50	100	150
kg/m	6,11		

PR 310



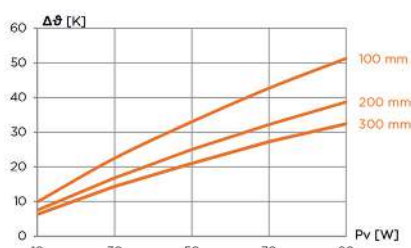
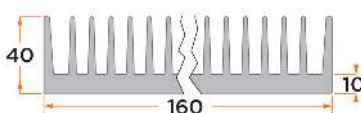
Pv [W]	RthK [K/W]		
10	4,15	2,58	2,00
20	3,69	2,32	1,82
30	3,40	2,16	1,71
40		2,05	1,62
50		1,95	1,56
mm	50	100	150
kg/m	2,51		

PR 158



Pv [W]	RthK [K/W]		
20	2,72	1,78	1,46
30	2,49	1,68	1,39
40	2,35	1,62	1,32
50		1,55	1,28
60		1,50	1,25
mm	50	100	150
kg/m	3,20		

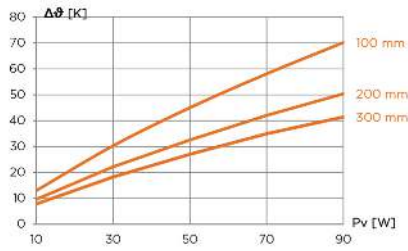
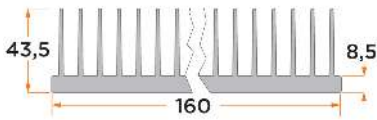
PR 169



Pv [W]	RthK [K/W]		
10	0,99	0,75	0,63
30	0,75	0,56	0,48
50	0,66	0,50	0,42
70	0,61	0,46	0,39
90	0,57	0,43	0,36
mm	100	200	300
kg/m	17,70		

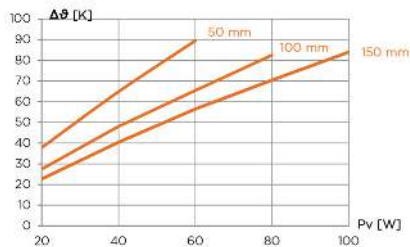
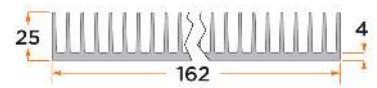
Alutronic in Short
Customised Extrusions
Standard Extrusions
Heat Sink PCB Mounting
Powerblobs
Heat Sink Systems
Insulation + Heat Conduction
Mounting
Information
Index

PR 384



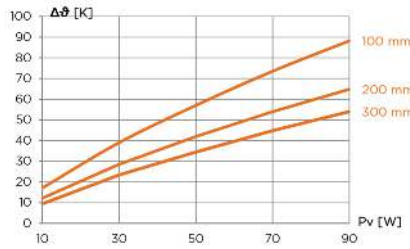
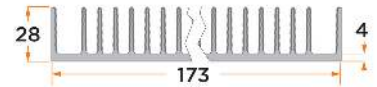
Pv [W]	RthK [K/W]		
10	1,30	0,96	0,78
30	1,01	0,74	0,61
50	0,90	0,65	0,54
70	0,83	0,60	0,50
90	0,78	0,56	0,46
mm	100	200	300
kg/m	6,75		

PR 174



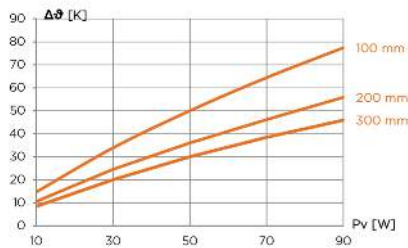
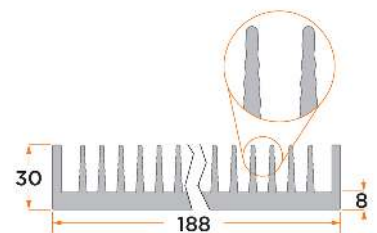
Pv [W]	RthK [K/W]		
20	1,89	1,37	1,13
40	1,62	1,20	1,01
60	1,49	1,09	0,94
80		1,03	0,88
100			0,84
mm	50	100	150
kg/m	4,01		

PR 385



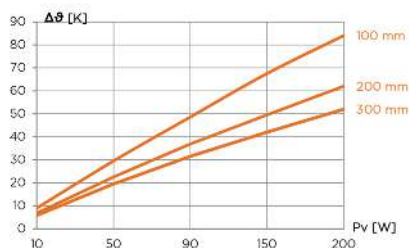
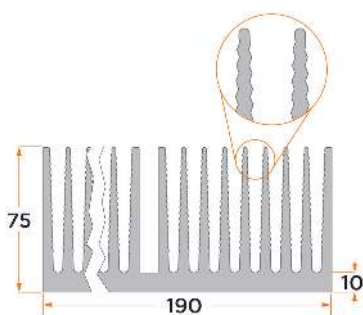
Pv [W]	RthK [K/W]		
10	1,71	1,22	0,94
30	1,30	0,95	0,78
50	1,14	0,84	0,69
70	1,05	0,77	0,64
90	0,98	0,72	0,60
mm	100	200	300
kg/m	4,22		

PR 371



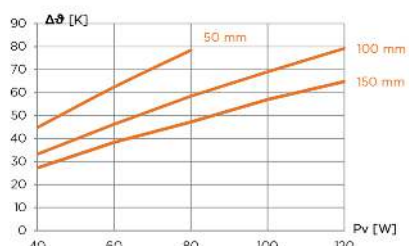
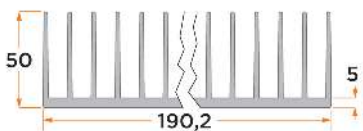
Pv [W]	RthK [K/W]		
10	1,47	1,06	0,84
30	1,13	0,82	0,67
50	1,00	0,72	0,60
70	0,92	0,66	0,55
90	0,86	0,62	0,51
mm	100	200	300
kg/m	7,38		

PR 379



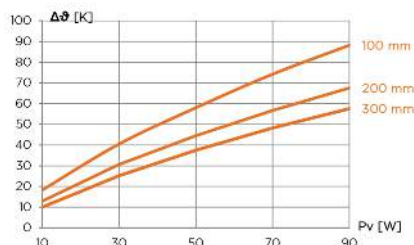
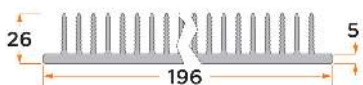
Pv [W]	RthK [K/W]		
10	0,90	0,68	0,58
50	0,59	0,45	0,39
90	0,54	0,41	0,35
150	0,45	0,33	0,28
200	0,42	0,31	0,26
mm	100	200	300
kg/m	17,89		

PR 163



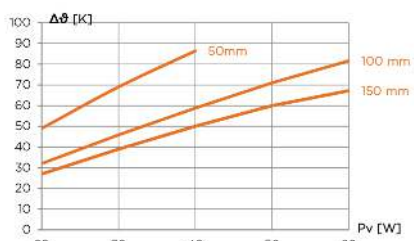
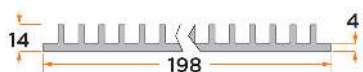
Pv [W]	RthK [K/W]		
40	1,12	0,83	0,68
60	1,04	0,77	0,64
80	0,98	0,73	0,59
100		0,69	0,57
120		0,66	0,54
mm	50	100	150
kg/m	6,92		

PR 387



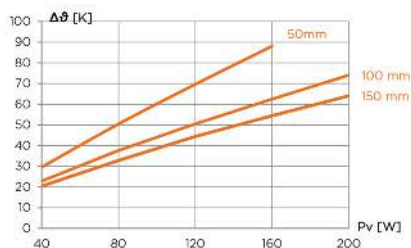
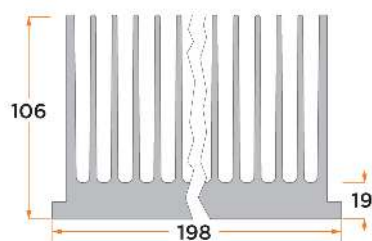
Pv [W]	RthK [K/W]		
10	1,83	1,30	1,00
30	1,35	1,02	0,84
50	1,16	0,89	0,75
70	1,06	0,81	0,69
90	0,98	0,75	0,64
mm	100	200	300
kg/m	5,63		

PR 199



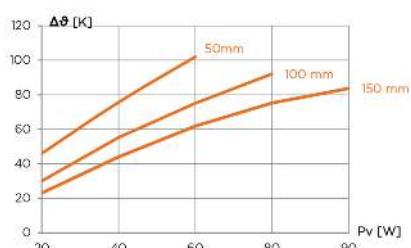
Pv [W]	RthK [K/W]		
20	2,45	1,60	1,35
30	2,30	1,53	1,30
40	2,16	1,47	1,25
50		1,42	1,20
60		1,36	1,12
mm	50	100	150
kg/m	3,50		

PR 392



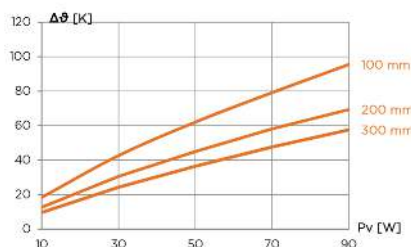
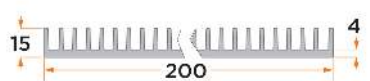
Pv [W]	RthK [K/W]		
40	0,74	0,57	0,51
80	0,63	0,47	0,41
120	0,58	0,42	0,37
160	0,55	0,39	0,34
200		0,37	0,32
mm	50	100	150
kg/m	22,30		

PR 240



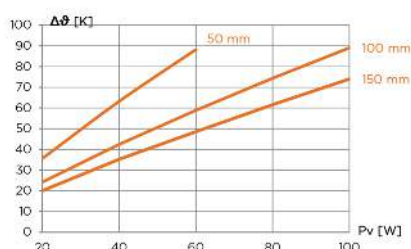
Pv [W]	RthK [K/W]		
20	2,30	1,50	1,15
40	1,89	1,38	1,10
60	1,70	1,25	1,03
80		1,15	0,94
90			0,93
mm	50	100	150
kg/m	3,45		

PR 382



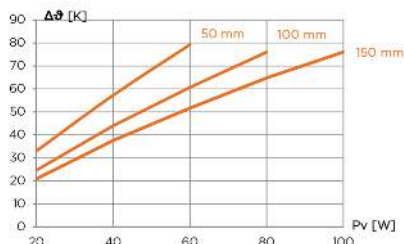
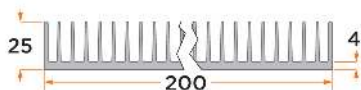
Pv [W]	RthK [K/W]		
10	1,84	1,27	0,97
30	1,42	1,02	0,81
50	1,24	0,90	0,73
70	1,13	0,83	0,68
90	1,06	0,77	0,64
mm	100	200	300
kg/m	3,90		

PR 103



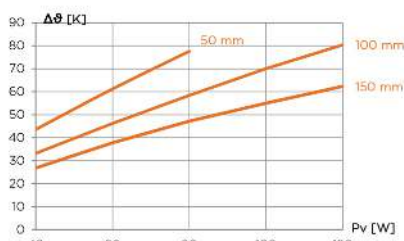
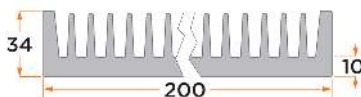
Pv [W]	RthK [K/W]		
20	1,78	1,21	1,00
40	1,58	1,06	0,88
60	1,47	0,98	0,81
80		0,93	0,77
100		0,89	0,74
mm	50	100	150
kg/m	4,25		

PR 165



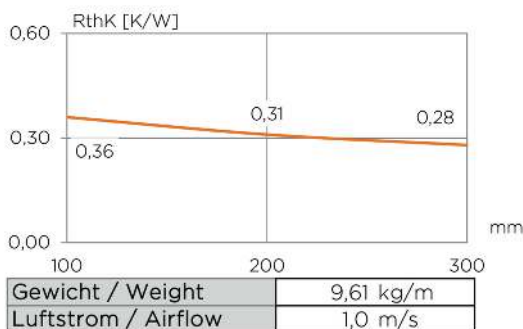
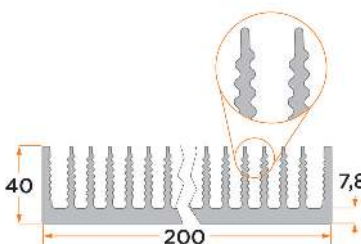
Pv [W]	RthK [K/W]		
20	1,65	1,23	1,04
40	1,43	1,10	0,94
60	1,32	1,01	0,86
80		0,95	0,81
100			0,76
mm	50	100	150
kg/m	4,76		

PR 328

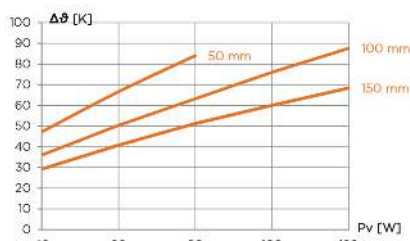
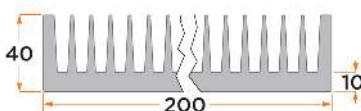


Pv [W]	RthK [K/W]		
40	1,09	0,83	0,67
60	1,02	0,77	0,63
80	0,97	0,73	0,59
100		0,70	0,55
120		0,67	0,52
mm	50	100	150
kg/m	10,03		

PR 370

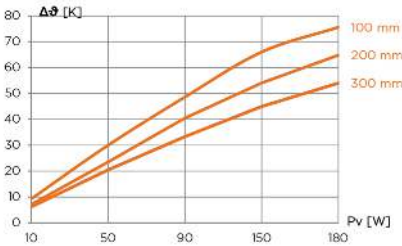
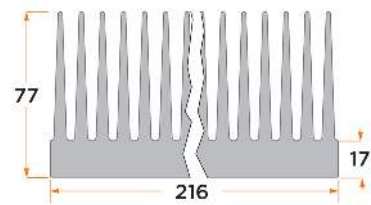


PR 170



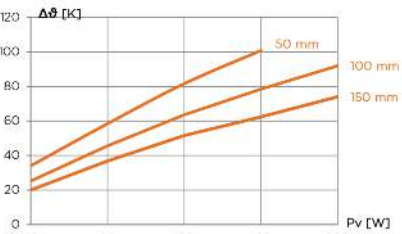
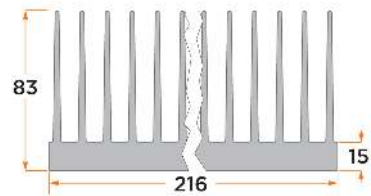
Pv [W]	RthK [K/W]		
40	1,18	0,90	0,73
60	1,11	0,84	0,68
80	1,05	0,79	0,64
100		0,76	0,60
120		0,73	0,57
mm	50	100	150
kg/m	10,68		

PR 375



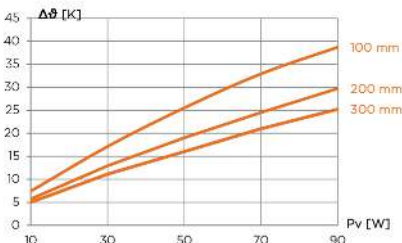
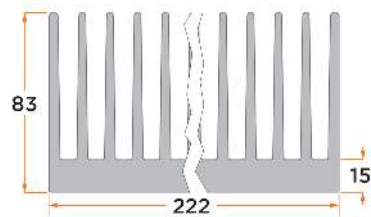
Pv [W]	RthK [K/W]		
10	0,93	0,71	0,62
50	0,60	0,47	0,41
90	0,54	0,45	0,37
150	0,44	0,36	0,30
180	0,42	0,36	0,30
mm	100	200	300
kg/m	23,96		

PR 236



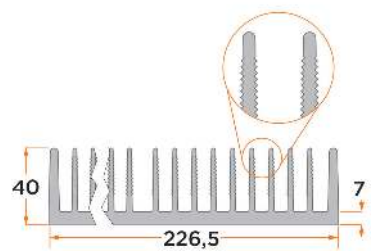
Pv [W]	RthK [K/W]		
40	0,85	0,63	0,50
80	0,73	0,57	0,46
120	0,68	0,53	0,43
160	0,63	0,49	0,39
200		0,46	0,37
mm	50	100	150
kg/m	18,69		

PR 391

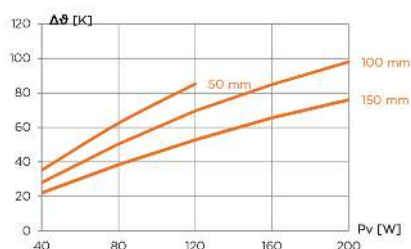
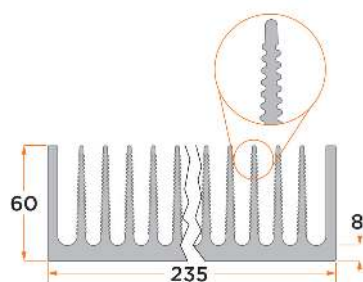


Pv [W]	RthK [K/W]		
10	0,74	0,57	0,50
30	0,57	0,43	0,37
50	0,51	0,38	0,32
70	0,47	0,35	0,30
90	0,43	0,33	0,28
mm	100	200	300
kg/m	22,35		

PR 149

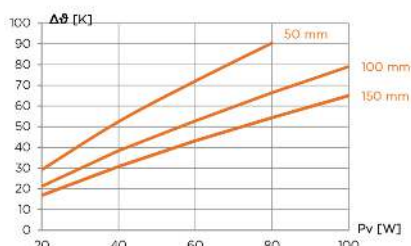
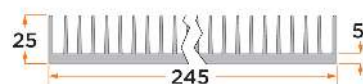


PR 235



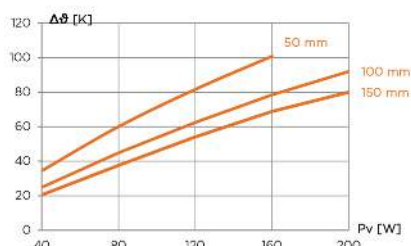
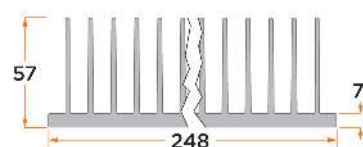
Pv [W]	RthK [K/W]		
40	0,88	0,70	0,55
80	0,78	0,63	0,48
120	0,71	0,58	0,44
160		0,53	0,41
200		0,49	0,38
mm	50	100	150
kg/m	15,23		

PR 166



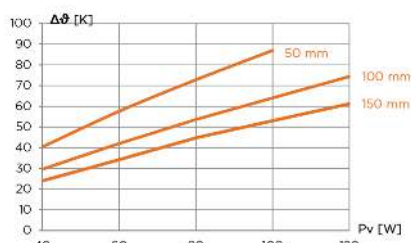
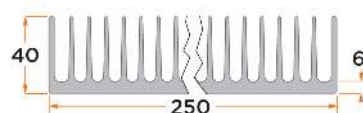
Pv [W]	RthK [K/W]		
20	1,46	1,06	0,84
40	1,31	0,96	0,77
60	1,20	0,88	0,72
80	1,13	0,83	0,68
100		0,79	0,65
mm	50	100	150
kg/m	6,12		

PR 189



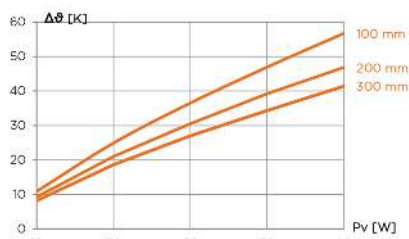
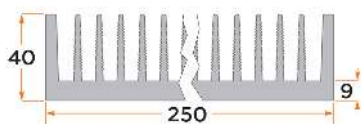
Pv [W]	RthK [K/W]		
40	0,86	0,62	0,51
80	0,75	0,56	0,47
120	0,68	0,52	0,45
160	0,63	0,49	0,43
200		0,46	0,40
mm	50	100	150
kg/m	11,47		

PR 175



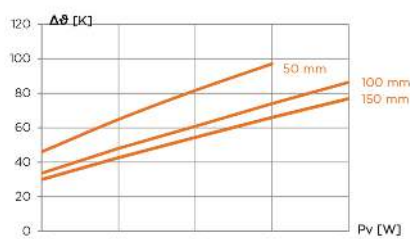
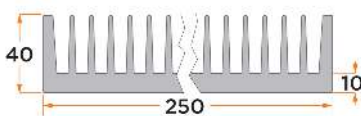
Pv [W]	RthK [K/W]		
40	1,01	0,74	0,60
60	0,96	0,70	0,57
80	0,91	0,67	0,56
100	0,87	0,64	0,53
120		0,62	0,51
mm	50	100	150
kg/m	10,21		

PR 396



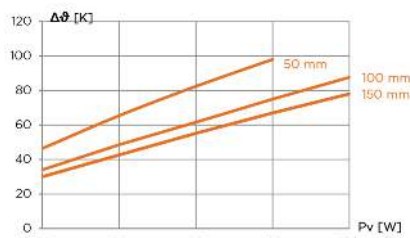
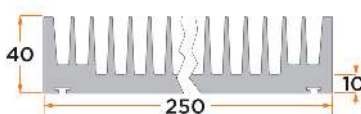
Pv [W]	RthK [K/W]		
10	1,09	0,93	0,82
30	0,83	0,70	0,62
50	0,73	0,61	0,54
70	0,67	0,56	0,49
90	0,63	0,52	0,46
mm	100	200	300
kg/m	12,27		

PR 325



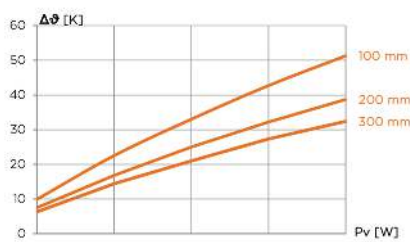
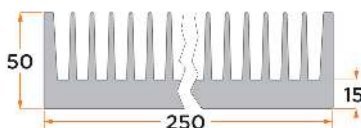
Pv [W]	RthK [K/W]		
40	1,15	0,84	0,75
60	1,08	0,80	0,71
80	1,02	0,76	0,68
100	0,97	0,74	0,66
120		0,72	0,64
mm	50	100	150
kg/m	13,22		

PR 201



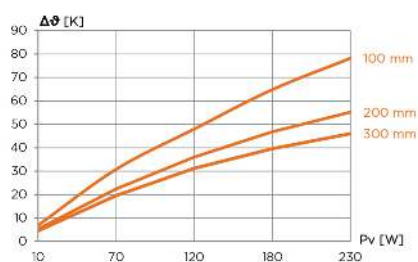
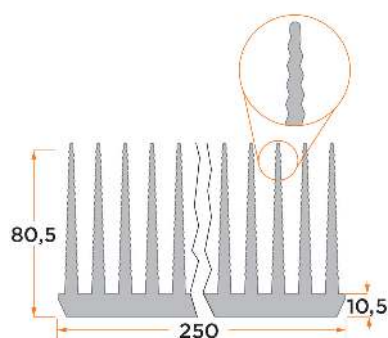
Pv [W]	RthK [K/W]		
40	1,16	0,85	0,75
60	1,09	0,81	0,71
80	1,03	0,77	0,69
100	0,98	0,75	0,67
120		0,73	0,65
mm	50	100	150
kg/m	13,58		

PR 372



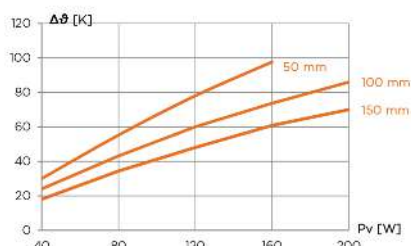
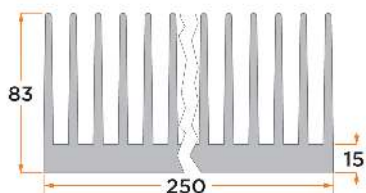
Pv [W]	RthK [K/W]		
10	0,99	0,75	0,63
30	0,75	0,56	0,48
50	0,66	0,50	0,42
70	0,61	0,46	0,39
90	0,57	0,43	0,36
mm	100	200	300
kg/m	17,70		

PR 380



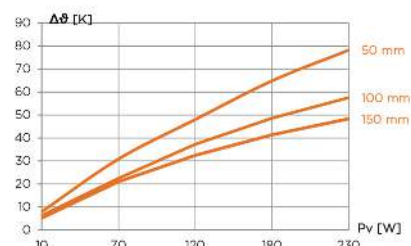
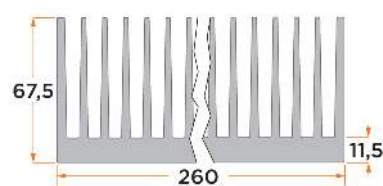
Pv [W]	RthK [K/W]		
10	0,69	0,53	0,45
70	0,44	0,32	0,28
120	0,40	0,30	0,26
180	0,36	0,26	0,22
230	0,34	0,24	0,20
mm	100	200	300
kg/m	21,34		

PR 237



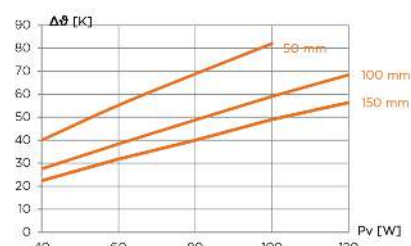
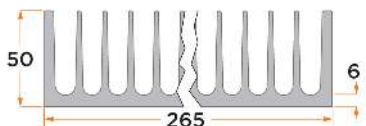
Pv [W]	RthK [K/W]		
40	0,75	0,60	0,45
80	0,69	0,54	0,43
120	0,65	0,50	0,40
160	0,61	0,46	0,38
200		0,43	0,35
mm	50	100	150
kg/m	24,68		

PR 374



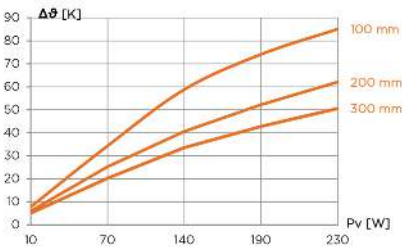
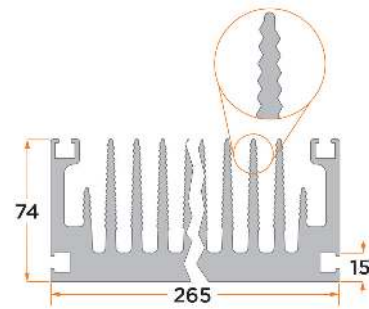
Pv [W]	RthK [K/W]		
10	0,79	0,62	0,52
70	0,44	0,32	0,30
120	0,40	0,31	0,27
180	0,36	0,27	0,23
230	0,34	0,25	0,21
mm	50	100	150
kg/m	20,62		

PR 164



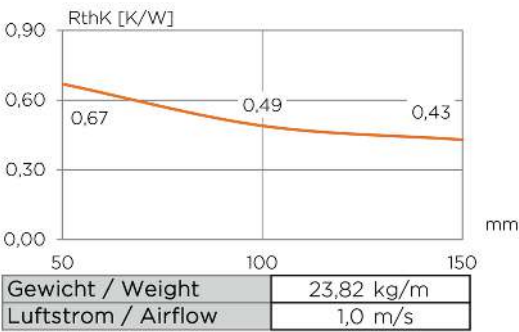
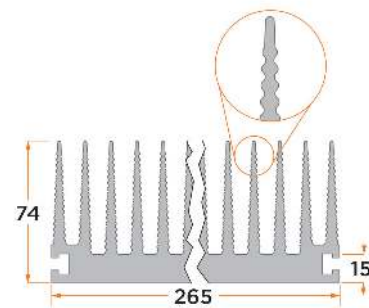
Pv [W]	RthK [K/W]		
40	1,00	0,69	0,56
60	0,92	0,64	0,53
80	0,86	0,61	0,50
100	0,82	0,59	0,49
120		0,57	0,47
mm	50	100	150
kg/m	12,70		

PR 376

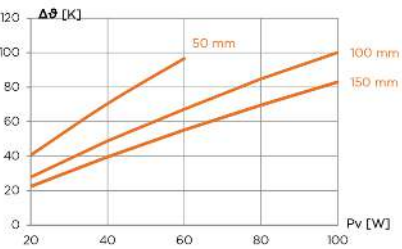
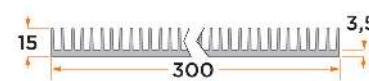


Pv [W]	RthK [K/W]		
10	0,78	0,60	0,51
70	0,49	0,36	0,29
140	0,42	0,29	0,24
190	0,39	0,28	0,23
230	0,37	0,27	0,22
mm	100	200	300
kg/m	25,04		

PR 186

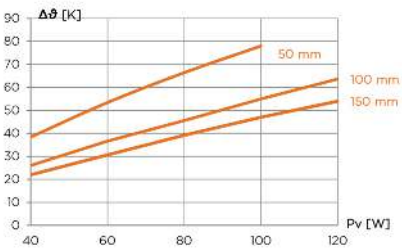
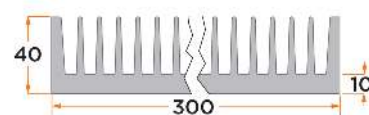


PR 247



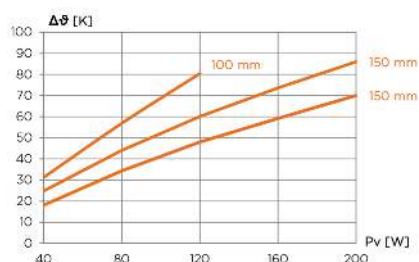
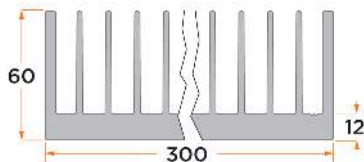
Pv [W]	RthK [K/W]		
20	2,03	1,39	1,12
40	1,76	1,22	0,99
60	1,61	1,12	0,92
80		1,06	0,87
100		1,00	0,83
mm	50	100	150
kg/m	5,43		

PR 171



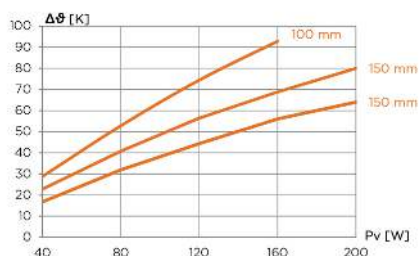
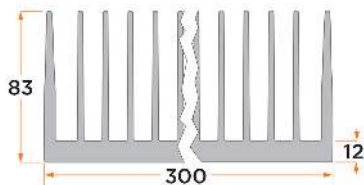
Pv [W]	RthK [K/W]		
40	0,96	0,65	0,55
60	0,89	0,61	0,51
80	0,83	0,57	0,49
100	0,78	0,55	0,47
120		0,53	0,45
mm	50	100	150
kg/m	15,45		

PR 360



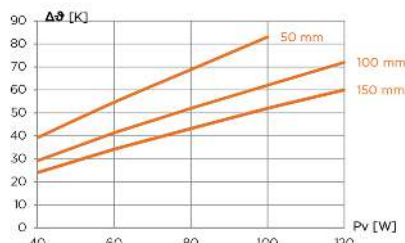
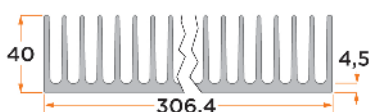
Pv [W]	RthK [K/W]		
40	0,78	0,62	0,45
80	0,71	0,55	0,43
120	0,67	0,50	0,40
160		0,46	0,37
200		0,43	0,35
mm	100	150	200
kg/m	18,33		

PR 304



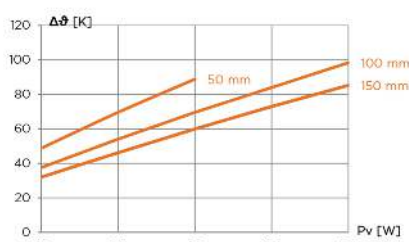
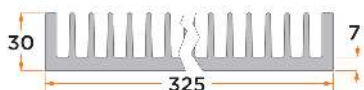
Pv [W]	RthK [K/W]		
40	0,72	0,57	0,42
80	0,66	0,51	0,40
120	0,62	0,47	0,37
160	0,58	0,43	0,35
200		0,40	0,32
mm	100	150	200
kg/m	23,88		

PR 177



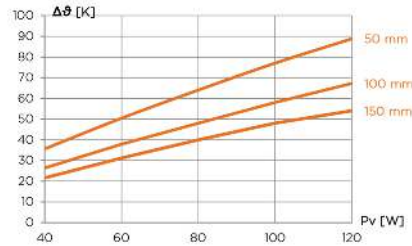
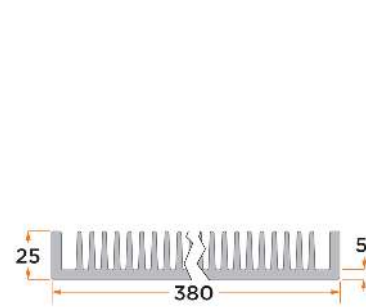
Pv [W]	RthK [K/W]		
40	0,98	0,73	0,60
60	0,91	0,69	0,57
80	0,86	0,65	0,54
100	0,83	0,62	0,52
120		0,60	0,50
mm	50	100	150
kg/m	12,38		

PR 298



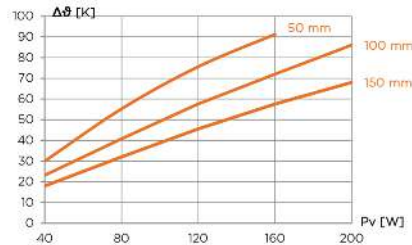
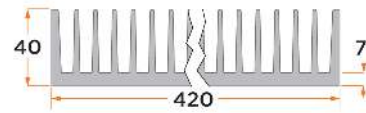
Pv [W]	RthK [K/W]		
40	1,22	0,94	0,80
60	1,16	0,90	0,77
80	1,11	0,87	0,75
100		0,84	0,73
120		0,82	0,71
mm	50	100	150
kg/m	12,44		

PR 178



Pv [W]	RthK [K/W]		
40	0,89	0,66	0,54
60	0,84	0,63	0,52
80	0,80	0,60	0,50
100	0,77	0,58	0,48
120	0,74	0,56	0,45
mm	50	100	150
kg/m	12,45		

PR 300



Pv [W]	RthK [K/W]		
40	0,75	0,58	0,45
80	0,69	0,51	0,40
120	0,63	0,48	0,38
160	0,57	0,45	0,36
200		0,43	0,34
mm	50	100	150
kg/m	19,32		

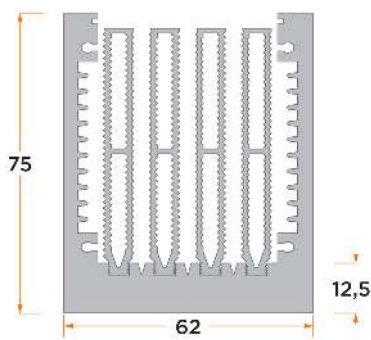
ALUTRONIC EXTRUSION-FILTER

NUMBER OF FILTERED PROFILES: 55

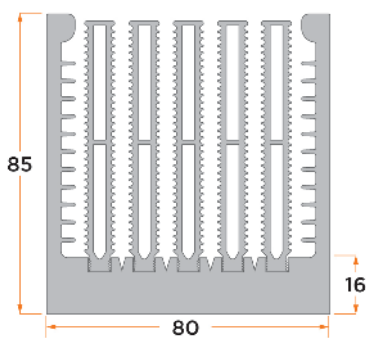


Use our extrusion filter online to select the best fitting profile for your application- quick and easy. You can filter by width, height and base thickness!

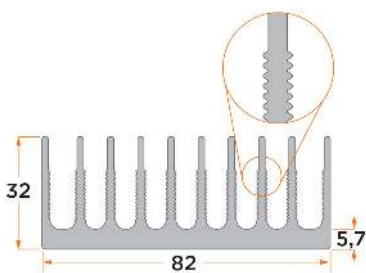
PR 715



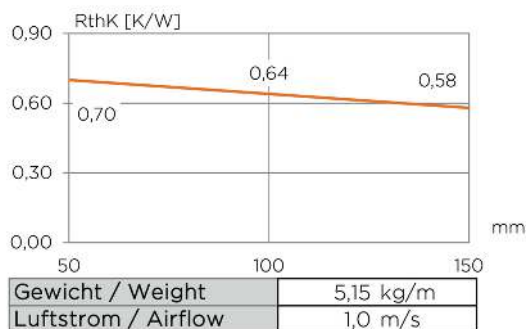
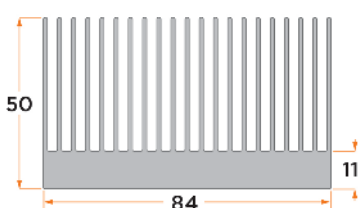
PR 716



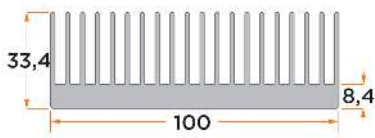
PR 367



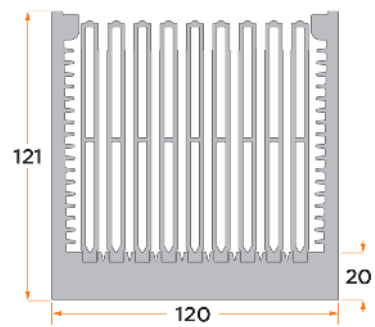
PR 393



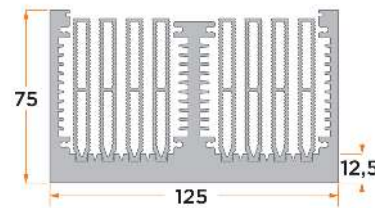
PR 399



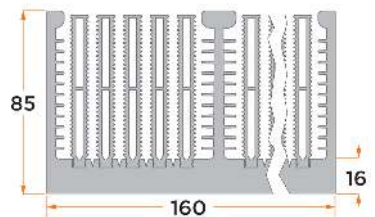
PR 717



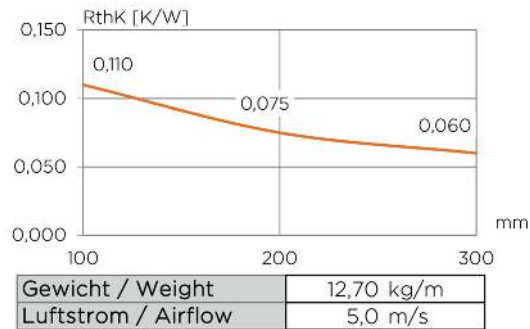
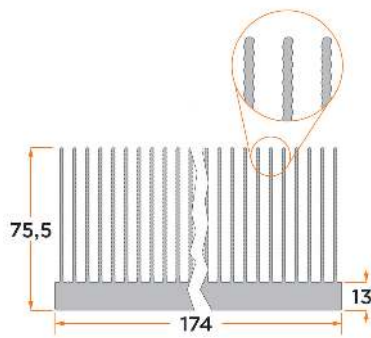
PR 718



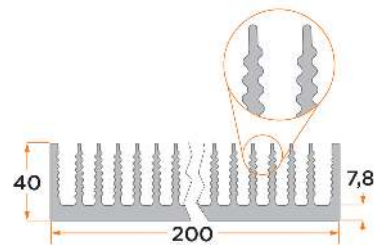
PR 719



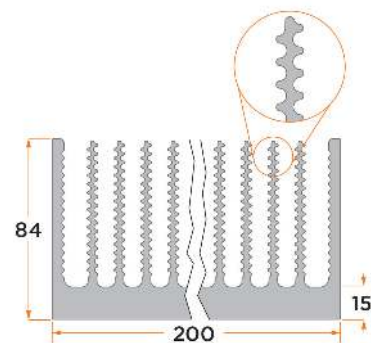
PR 395



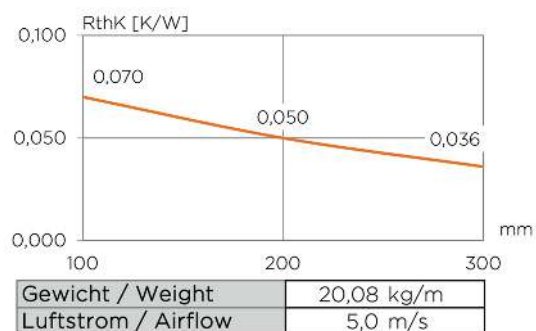
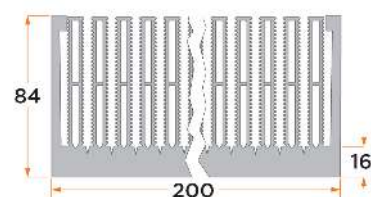
PR 370



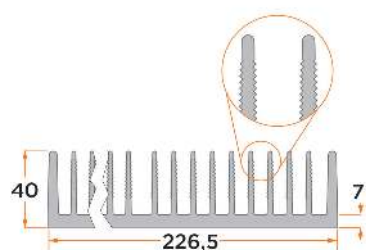
PR 327



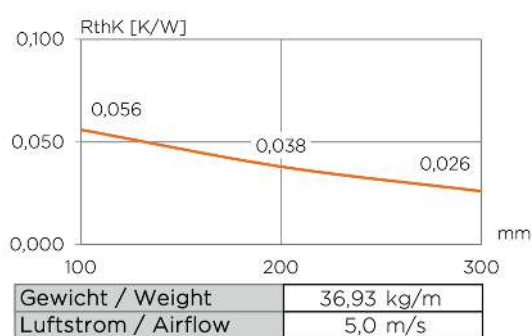
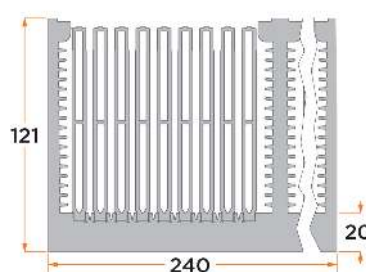
PR 253



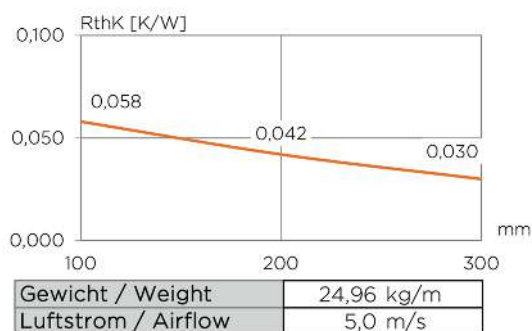
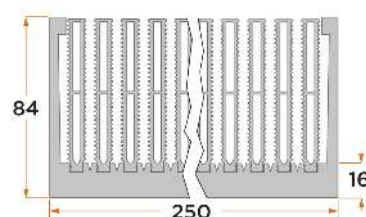
PR 149



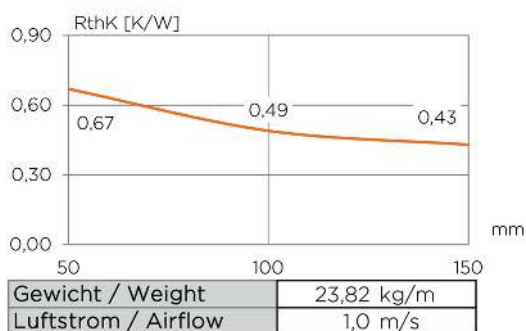
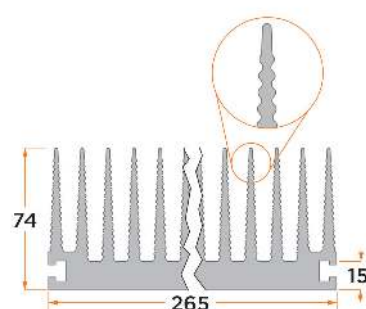
PR 720



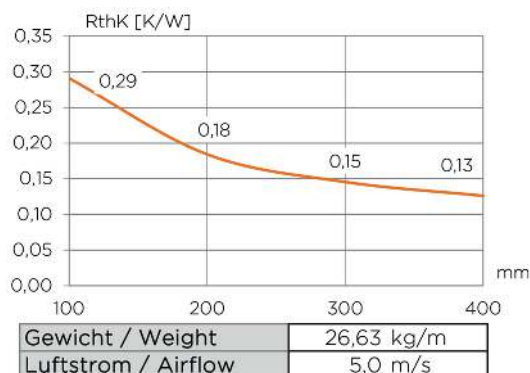
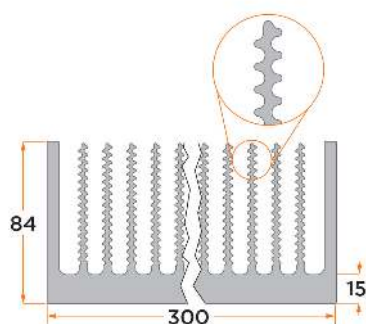
PR 252



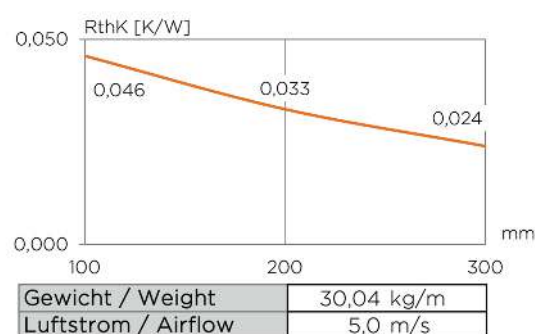
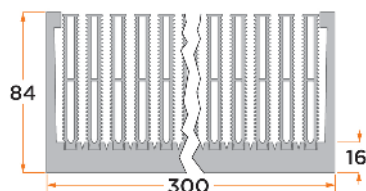
PR 186



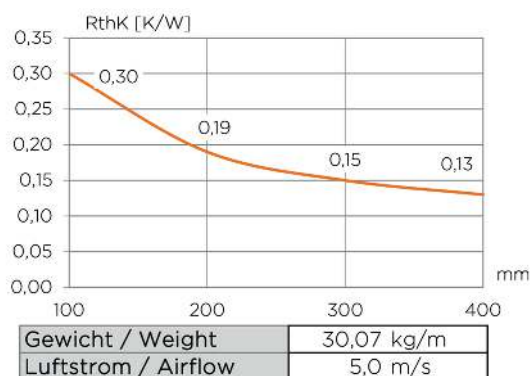
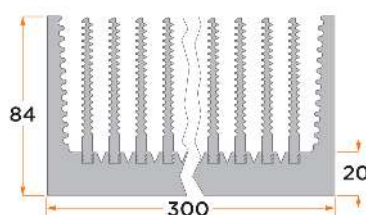
PR 368



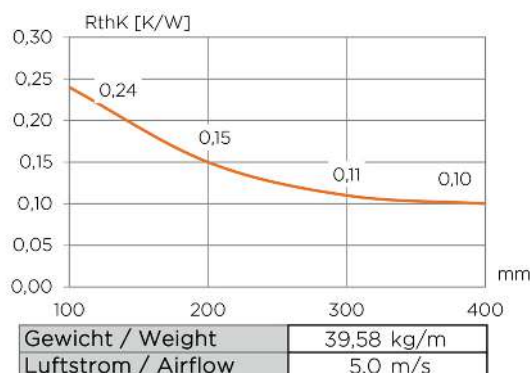
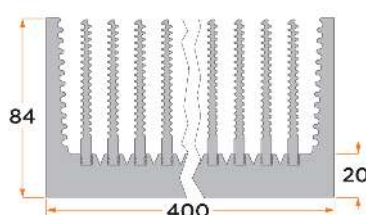
PR 254



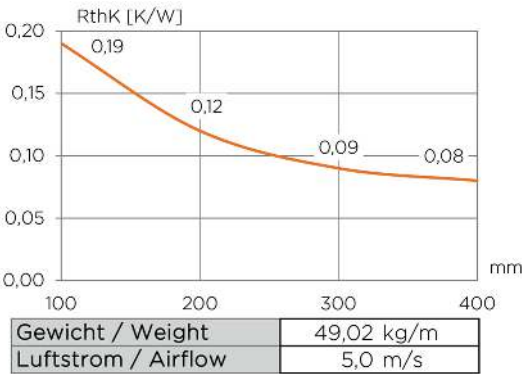
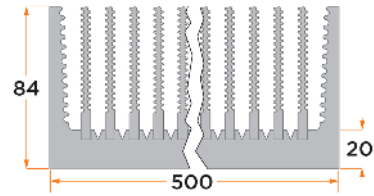
PR 255



PR 256

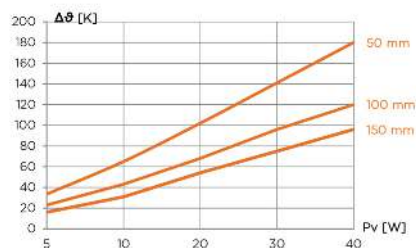
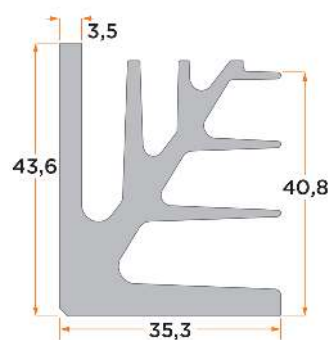


PR 257



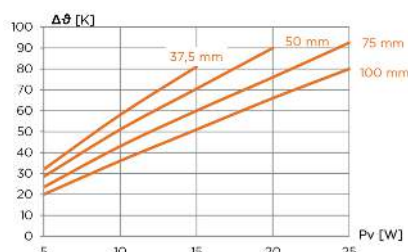
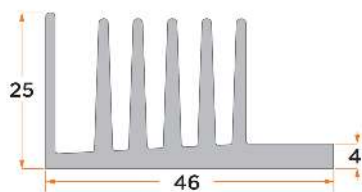
Burr at the profile's cut ends is always brushed off, leaving no sharp edges!

PR 394



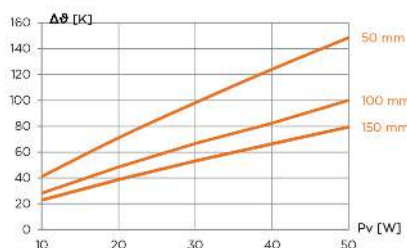
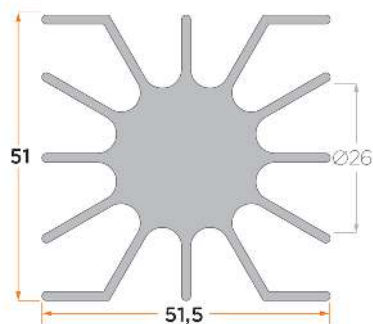
Pv [W]	RthK [K/W]		
5	6,70	4,60	3,20
10	6,50	4,30	3,10
20	5,10	3,40	2,70
30	4,70	3,20	2,50
40	4,50	3,00	2,40
mm	50	100	150
kg/m	1,79		

PR 113



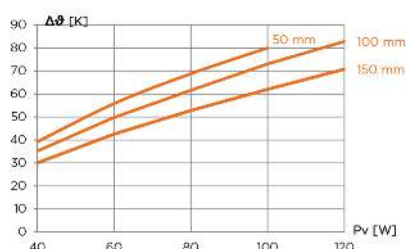
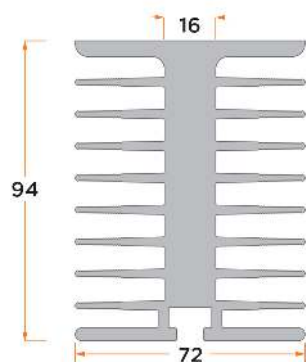
Pv [W]	RthK [K/W]			
5	6,4	5,7	4,7	4,0
10	5,8	5,1	4,3	3,6
15	5,4	4,7	4,0	3,4
20		4,5	3,8	3,3
25			3,7	3,2
mm	37,5	50	75	100
kg/m	1,10			

PR 365



Pv [W]	RthK [K/W]		
10	4,11	2,83	2,29
20	3,55	2,42	1,94
30	3,27	2,22	1,77
40	3,10	2,06	1,66
50	2,97	2,00	1,59
mm	50	100	150
kg/m	2,50		

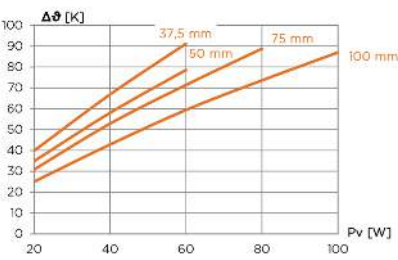
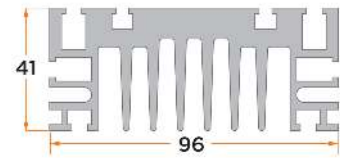
PR 227



Pv [W]	RthK [K/W]		
40	0,98	0,88	0,75
60	0,93	0,83	0,71
80	0,86	0,77	0,66
100	0,80	0,73	0,62
120		0,69	0,59
mm	50	100	150
kg/m	7,79		

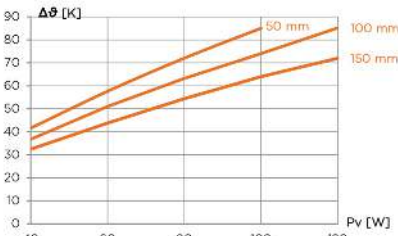
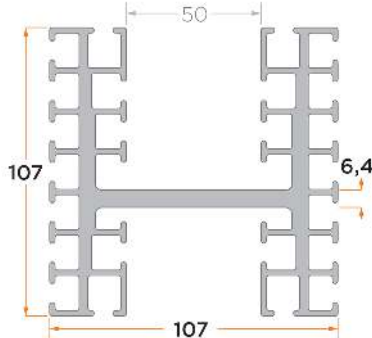
Alutronic in Short
Customised Extrusions
Standard Extrusions
Heat Sink PCB Mounting
Powerblobs
Heat Sink Systems
Insulation + Heat Conduction
Mounting
Information
Index

PR 221



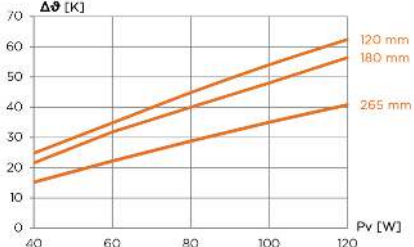
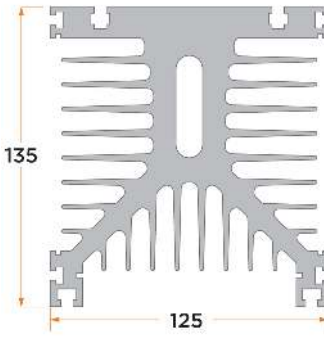
Pv [W]	RthK [K/W]			
20	1,99	1,74	1,54	1,25
40	1,67	1,45	1,32	1,07
60	1,52	1,31	1,19	0,99
80			1,11	0,92
100				0,87
mm	37,5	50	75	100
kg/m	4,88			

PR 210



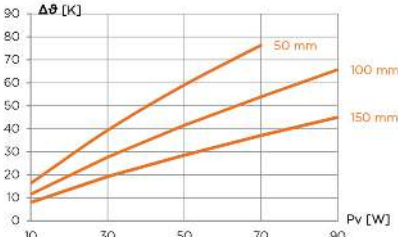
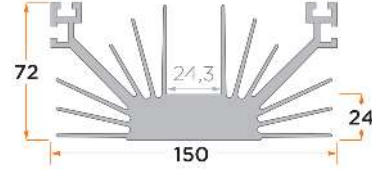
Pv [W]	RthK [K/W]		
40	1,04	0,92	0,81
60	0,96	0,85	0,73
80	0,90	0,79	0,68
100	0,85	0,74	0,64
120		0,71	0,60
mm	50	100	150
kg/m	7,17		

PR 223



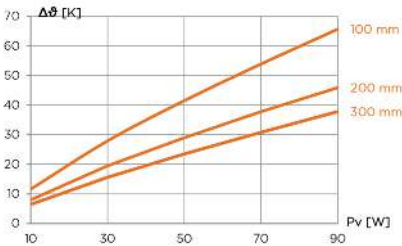
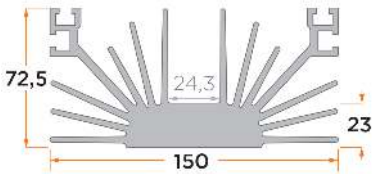
Pv [W]	RthK [K/W]		
40	0,62	0,54	0,38
60	0,58	0,53	0,37
80	0,56	0,50	0,36
100	0,54	0,48	0,35
120	0,52	0,47	0,34
mm	120	180	265
kg/m	17,88		

PR 386



Pv [W]	RthK [K/W]		
10	1,63	1,15	0,80
30	1,31	0,92	0,64
50	1,18	0,83	0,57
70	1,09	0,77	0,53
90		0,73	0,50
mm	50	100	150
kg/m	8,86		

PR 383



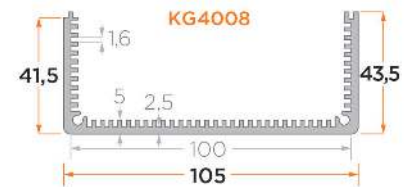
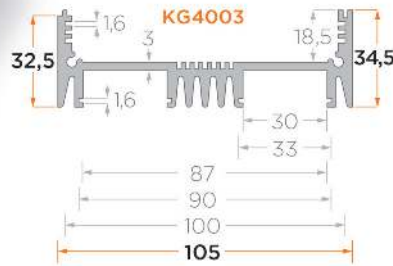
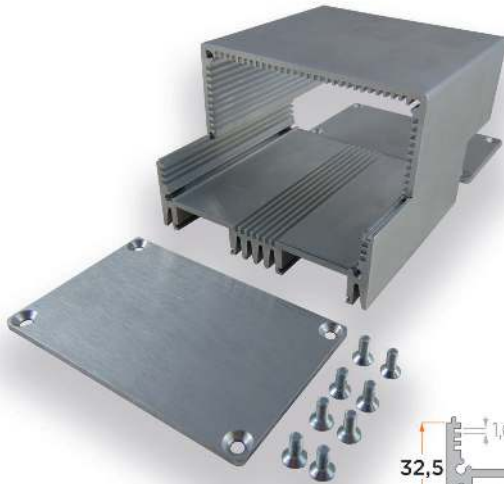
Pv [W]	RthK [K/W]		
	100 mm	200 mm	300 mm
10	1,16	0,80	0,64
30	0,93	0,65	0,52
50	0,83	0,58	0,47
70	0,77	0,54	0,44
90	0,73	0,51	0,42
mm	100	200	300
kg/m	10,15		



Alutronic also offers standard extrusions without further metal work - only cut to length with surface treatment on request!

Combination Casing KG 4003 - KG 4008 - KG4009

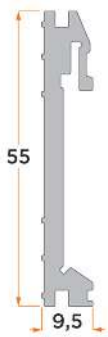
- Robust profile casing made from AlMgSi 0.5 F 22 with integrated cooling fins on the base
- Inside with integrated guiding grooves
- Integrated core holes for threaded bore holes $\varnothing$ 3,7 mm
- for holding non-standard components or Euro pcb boards
- Supplied as disassembled kit
- on request with compatible front plates and installation materials
- Special dimensions, machining and surfaces on request



Rail Mounting SB35

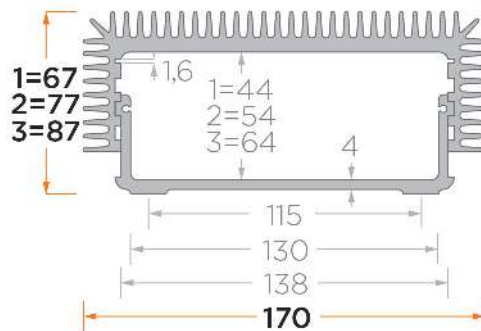
Universal clamp fixture compatible for all 35 mm DIN mounting rails

- Quick and easy installation of heat sinks and housings by snapping on the DIN mounting rail
- Secure hold by robust extruded profile with integrated wire-shaped spring made of stainless steel
- Any lengths as well as fixing bore holes as required by the customer (Length of fixing clamps up to 41 mm)



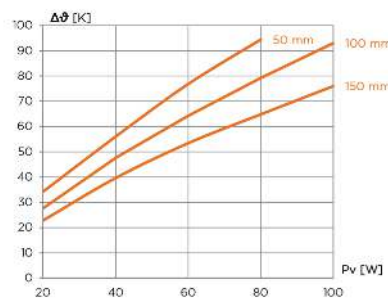
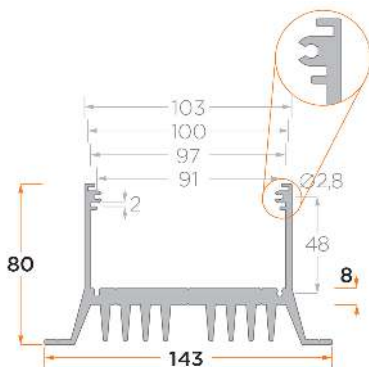
Heat Sink Casing WG 4291 - WG 4292 - WG 4293

- Robust profile casing made of AlMgSi 0.5 F 22 with integrated cooling fins
- Side wall with integrated guide grooves
- For holding non-standard components or Euro boards
- In 3 versions of height that can be pushed inside/outside
 - WG 4291 = 44 mm 67 mm
 - WG 4292 = 54 mm 77 mm
 - WG 4293 = 64 mm 87 mm
- Integrated core holes for threaded bore holes $\varnothing$ 3,1 mm
- With matching front plates on request, M4 threaded bore holes and countersunk screws
- Supplied as disassembled kit
- Special dimensions, machining and surfaces on request



PR 250

- Housing heat sink with integrated cooling fins
- With standing or fixing feet on the side
- With slide-in grooves for cover plate or printed circuit boards (e.g Euro pcb boards)
- Integrated core holes for threaded bore holes for fixing front plates
- Special dimensions, machining and surfaces on request

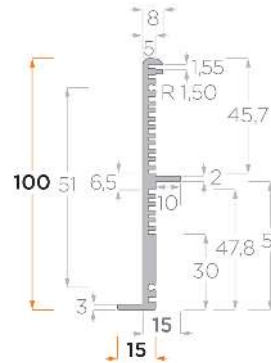


Pv [W]	RthK [K/W]		
20	1,71	1,38	1,14
40	1,4	1,19	0,99
60	1,28	1,07	0,89
80	1,18	0,99	0,81
100		0,93	0,76
mm	50	100	150
g	390	530	790

Universal Side Profile UP 285

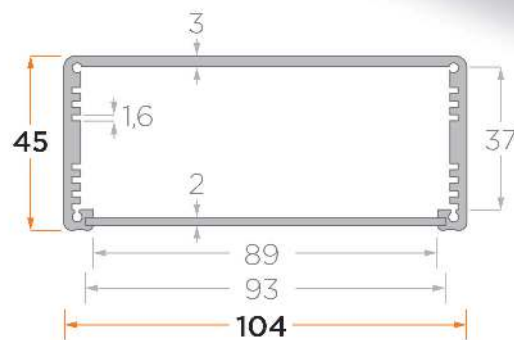
Universal side profile made from aluminium e.g. for construction of a heat dissipating housing with cooling profiles. Especially with flatback profiles, cooling housings of any desired width and length can be constructed.

- Slide-in grooves for printed circuit boards of different thickness
- Screw channels for self-tapping screws for fixing front plates
- Particularly suitable for small quantities
- Fixing to the heat sink with the help of internal bridge (not visible) or on the side at any position of the side profile
- Special dimensions, machining and surfaces on request



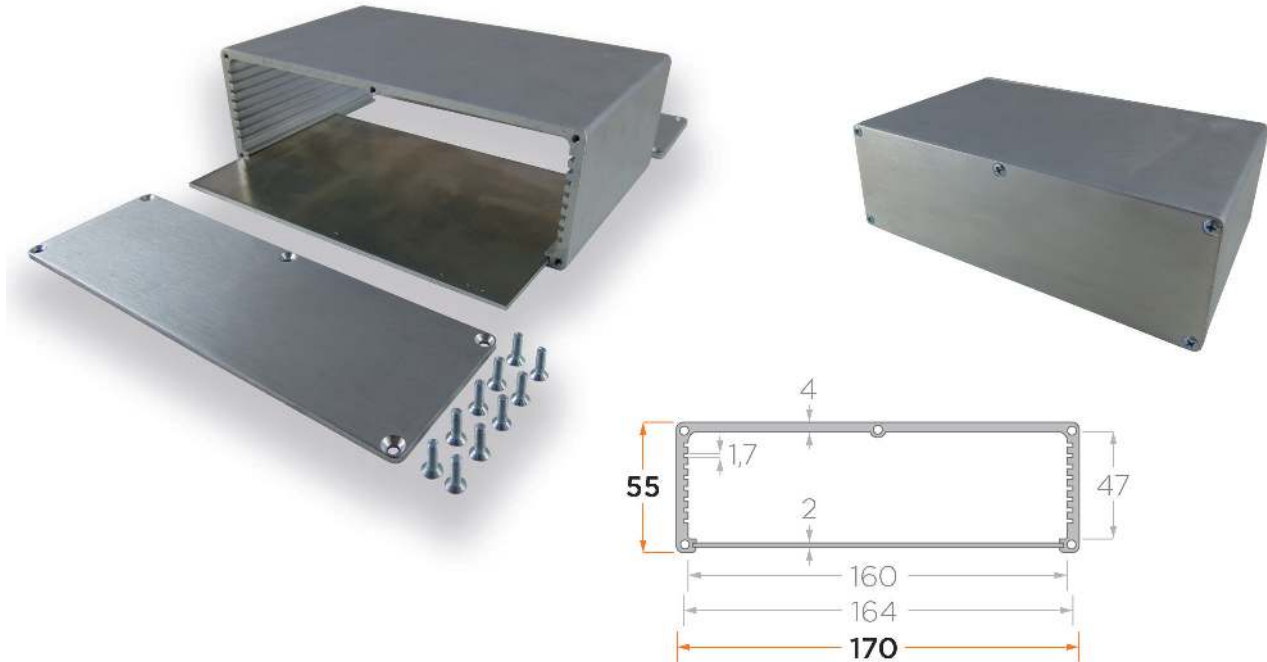
Shell Casing SG 3400

- Robust shell housing made from AlMgSi 0.5 F 22 with slide-in base (or cover)
- Side wall with integrated guiding grooves
- For holding non-standard components or Euro pcb boards
- With integrated core holes for threaded bore holes $\varnothing$ 2,5 mm
- On request with M3 thread for compatible front plates and installation materials
- Supplied as disassembled kit
- Special dimensions, machining and surfaces on request



Shell Casing SG 3500

- Robust shell housing made from AlMgSi 0.5 F 22 with slide-in base (or cover)
- Side wall with integrated guiding grooves
- For holding non-standard components or Euro pcb boards
- On request with M3 thread for compatible front plates and installation materials
- Supplied as disassembled kit
- Special dimensions, machining and surfaces on request



Alutronic offers complete sub-assemblies such as casings!



We like to have your cooling problems!
 Determine the thermal resistance requirement to your heat sink solution
 quick and easy- online with our RthK Calculator at
www.alutronic.com/service/rthk-calculator

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Screw on Heat Sinks for Single Mounting.....	71
Solderable Heat Sinks for Single Mounting.....	76
Plug-on Heat Sinks for Single Mounting.....	86
Adhesive Heat Sinks for Single Mounting.....	92



You will find your specific solution here from about 200 specific heat sinks for all prevalent semiconductor housing types, such as, e.g. TO 220, TO 3, TO 66, TO 9, SOT 32 and many more.

Our offer is divided into various types of assembly: Screwing, soldering, plug-in and adhesion.

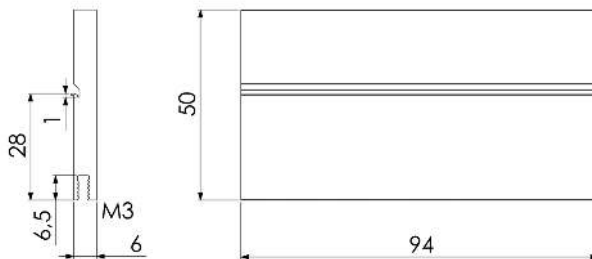
We modify standards for you or we create these based on your technical perceptions or ideas. We are pleased to advise you.

If you are unable to find the solution you are looking for in this catalogue, please call us up.

We are constantly expanding our range of products, and you can also get the latest information by visiting our website at www.alutronic.de

Appropriate clips can be found in the chapter Mounting / Mounting Clips

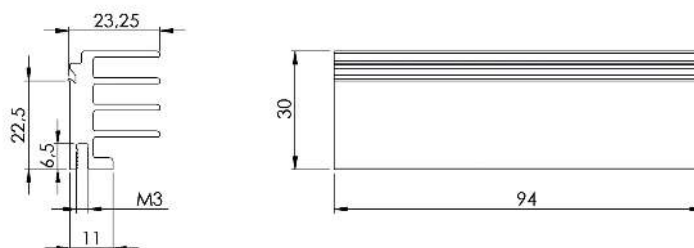
PR 101/94/SE/M3



For Casing: **TO 220, TO 218 (TOP 3)** Rthk: [K/W]: **7**

Device mounted by: **Mounting Clip**

PR 290/94/SE

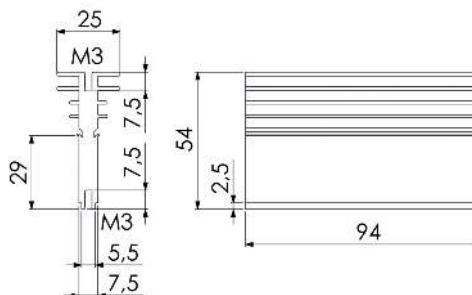


For Casing: **TO 220**

Rthk: [K/W]: **6.3**

Device mounted by: **Mounting Clip**

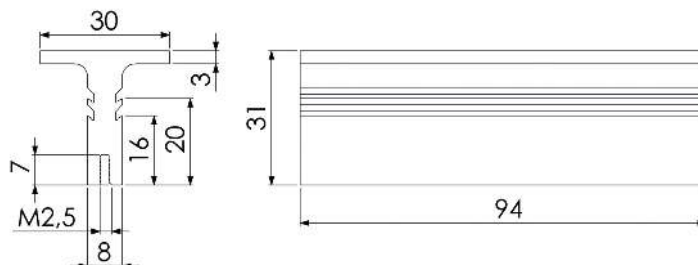
PR 118/94/SE/M3



For Casing: **TO 220, TO 218 (TOP 3)** Rthk: [K/W]: **3.2**

Device mounted by: **Mounting Clip**

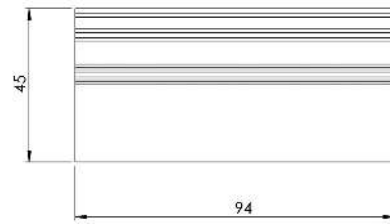
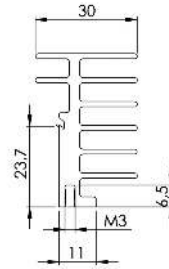
PR 116/94/SE/M2,5



For Casing: **TO 220, TO 218 (TOP 3)** Rthk: [K/W]: **4.8**

Device mounted by: **Mounting Clip**

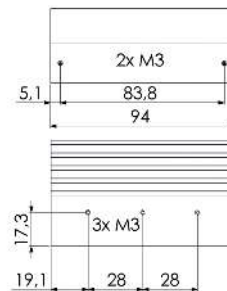
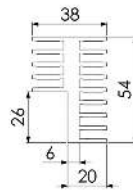
PR 127/94/SE



For Casing: **TO 220, TO 218 (TOP 3)** Rthk: [K/W]: **4**

Device mounted by: **Mounting Clip**

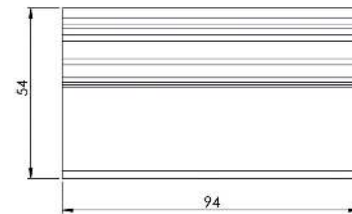
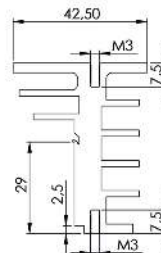
PR 136/94/SE/M3



For Casing: **TO 220, TO 218 (TOP 3)** Rthk: [K/W]: **2.6**

Device mounted by: **Screw**

PR 119/94/SE

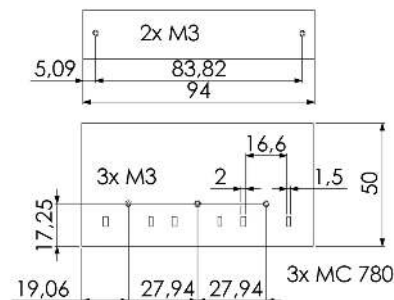
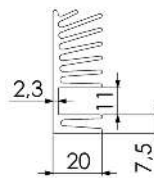


For Casing: **TO 220**

Rthk: [K/W]: **3.4**

Device mounted by: **Mounting Clip**

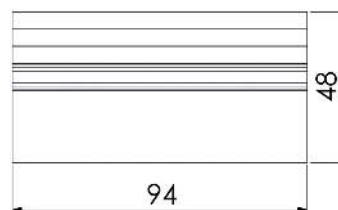
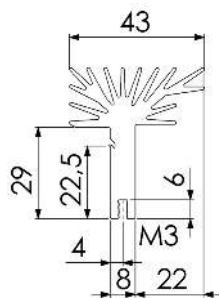
PR 139/94/SE/M3



For Casing: **TO 220**

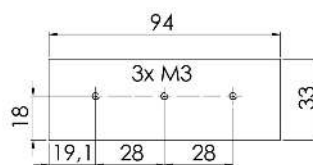
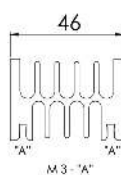
Rthk: [K/W]: **3.9**

Device mounted by: **Mounting Clip**

PR 292/94/SE/M3

 For Casing: **TO 220, TO 218 (TOP 3)** Rthk: [K/W]: **3.2**

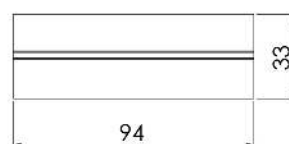
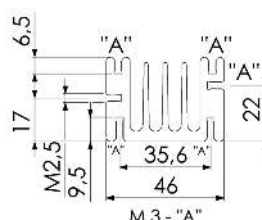
 Device mounted by: **Mounting Clip**
PR 137/94/SE/M3

with integrated standard holes for fixing the semiconductor


 For Casing: **TO 220, TO 218 (TOP 3)** Rthk: [K/W]: **3**

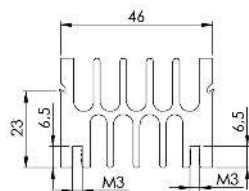
 Device mounted by: **Screw**
PR 138/94/SE/M3

with integrated screw channel for fixing the semiconductor


 For Casing: **TO 220, TO 218 (TOP 3)** Rthk: [K/W]: **3.2**

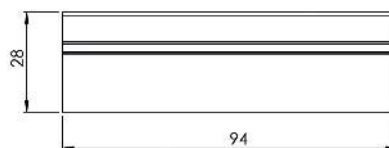
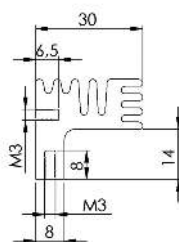
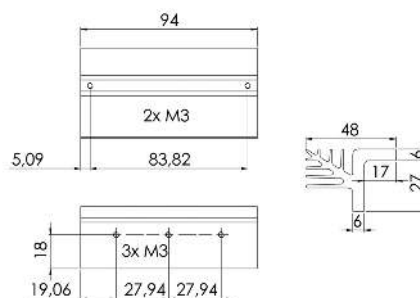
 Device mounted by: **Screw**
PR 293/94/SE

with integrated clip groove for fixing the semiconductor

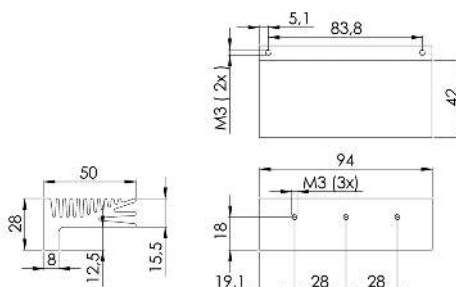

 For Casing: **TO 220**

 Rthk: [K/W]: **3.2**

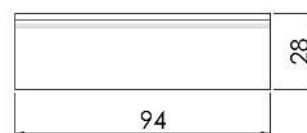
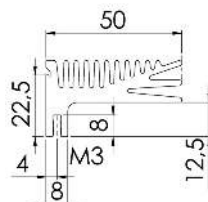
 Device mounted by: **Mounting Clip**

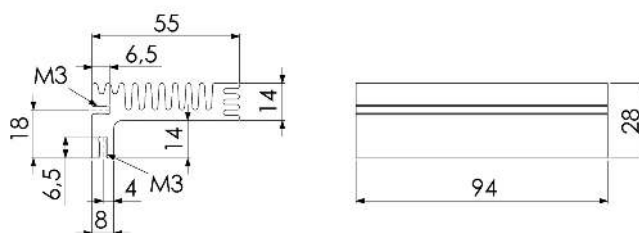
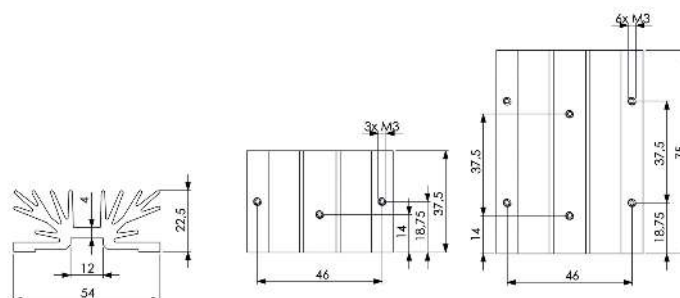
PR 234/94/SE
For Casing: **TO 220**Rthk: [K/W]: **4.5**Device mounted by: **Screw**
PR 143/94/SE/M3
For Casing: **TO 220, TO 218 (TOP 3)** Rthk: [K/W]: **3.7**Device mounted by: **Screw**
PR 133/94/SE/M3

with integrated standard holes for fixing the semiconductor

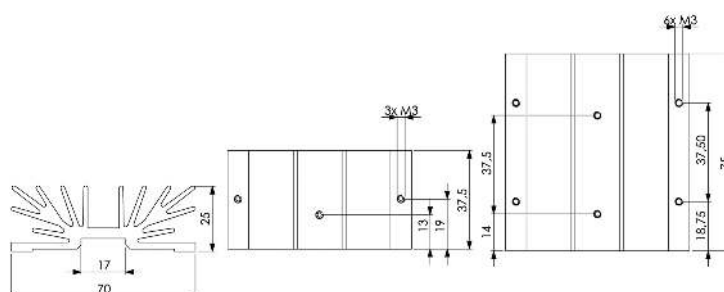
For Casing: **TO 220, TO 218 (TOP 3)** Rthk: [K/W]: **3.6**Device mounted by: **Screw**
PR 233/94/SE

with integrated clip groove for fixing the semiconductor

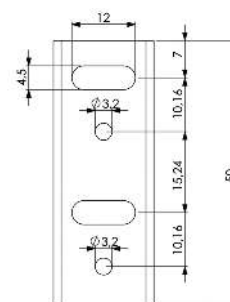
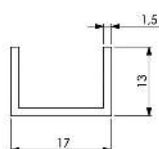
For Casing: **TO 220, TO 218 (TOP 3)** Rthk: [K/W]: **3.6**Device mounted by: **Mounting Clip**

Device mounted by: **Screw**

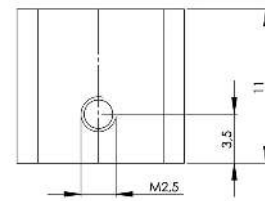
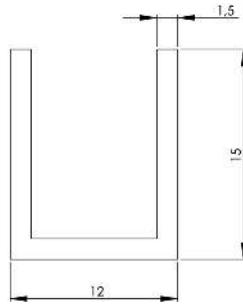
Device mounted by: **Screw**



Device mounted by: **Screw**

Device mounted by: **Screw**

PR 10/11/SE

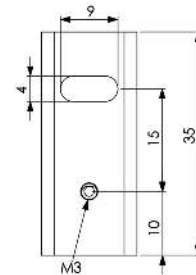
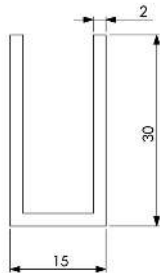


For Casing: **SOT 32, TO 126**

Rthk: [K/W]: **45**

Device mounted by: **Screw**

PR 15/35/SE

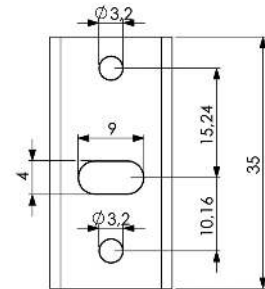
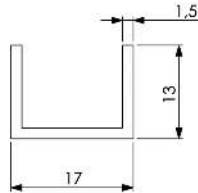


For Casing: **TO 220**

Rthk: [K/W]: **9**

Device mounted by: **Screw**

PR 17/35/II/SE

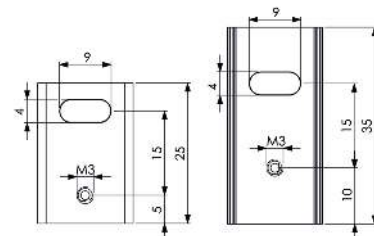
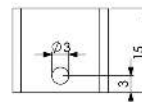
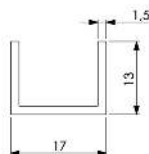


For Casing: **TO 220**

Rthk: [K/W]: **21**

Device mounted by: **Screw**

PR 17 with standard perforation

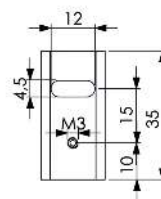
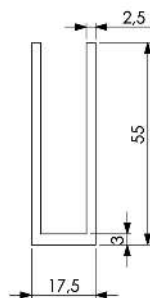


For Casing: **TO 220**

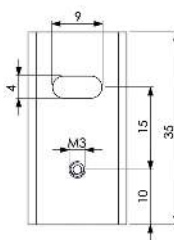
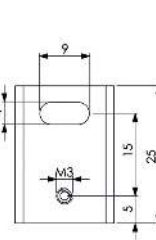
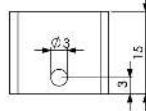
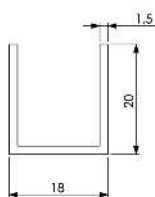
Device mounted by: **Screw**

article	Rthk [K/W]	Width [mm]
PR17/15/SE	28	15
PR17/25/SE	24	25
PR17/35/SE	21	35

PR 16/35/SE

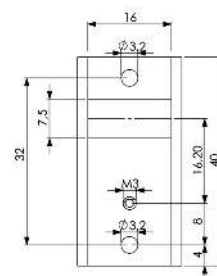
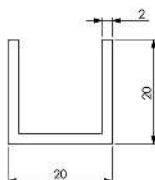
For Casing: **TO 220**Rthk: [K/W]: **7**Device mounted by: **Screw**

PR 18 with standard perforation

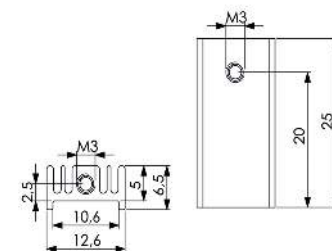
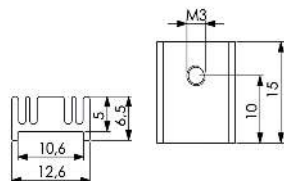
For Casing: **TO 220**Device mounted by: **Screw**

article	Rthk [K/W]	Width [mm]
PR 18/15/SE	20	15
PR 18/25/SE	17	25
PR 18/35/SE	13	35

PR 13/40/SE

For Casing: **TO 220**Rthk: [K/W]: **11**Device mounted by: **Screw**

PR 5 with M3 thread

For Casing: **TO 220**Device mounted by: **Screw**

article	Rthk [K/W]	Height [mm]
PR5/15/SE/M3	36	15
PR5/25/SE/M3	32	25

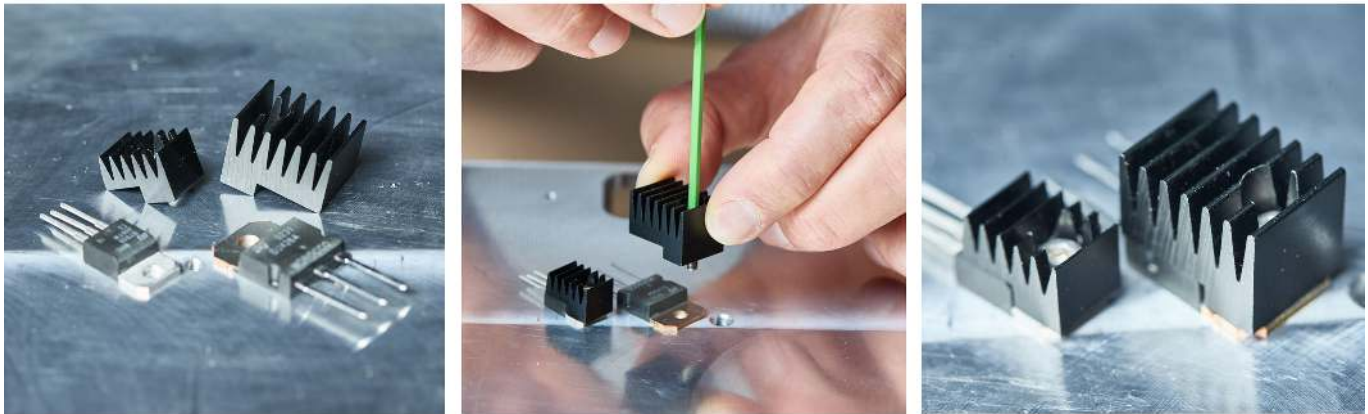
Shell and Pressure Heat Sink

for contact optimisation and additional convection surface.

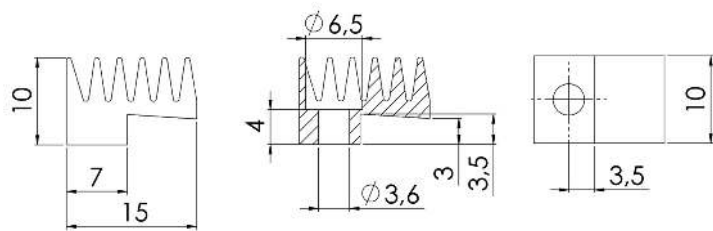
- Reducing the transfer resistance (R_{thGK}) to the main heat sink and improving the heat flow by full area contact pressure
- Reducing the total heat resistance (R_{th}) by additional heat dissipation

Standard article AK350/10/SE and AK352/15/SE

Special dimensions, e.g. for multiple installation on request



AK 350/10/SE

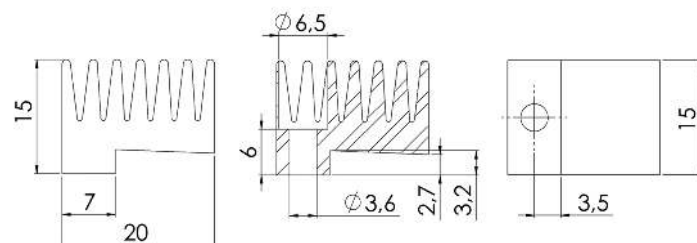
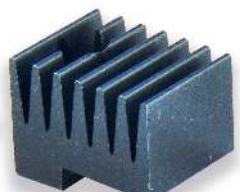


For Casing: **TO 220**

R_{thk} : [K/W]: **64**

Device mounted by: **Screw**

AK 352/15/SE



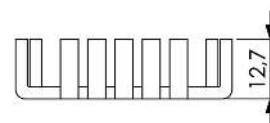
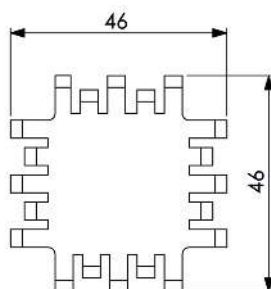
For Casing: **TO 218, TOP 3**

R_{thk} : [K/W]: **28**

Device mounted by: **Screw**

FI 310/SE

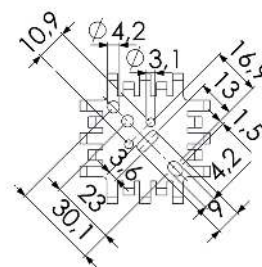
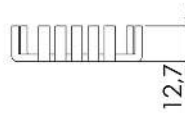
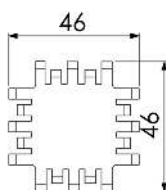
for Custom Perforation



Rthk: [K/W]: **7**

Device mounted by: **adhesive**

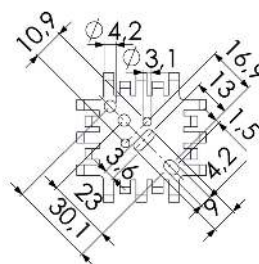
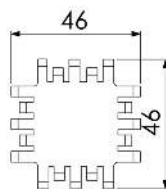
FI 311/SE



For Casing: **TO3, TO66, TO9, SOT32, TO220**, Rthk: [K/W]: **7**

Device mounted by: **Screw**

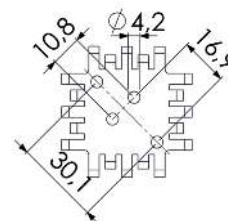
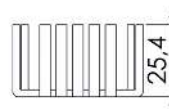
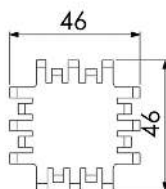
FI 321/SE



For Casing: **TO3, TO66, TO9, SOT32, TO220**, Rthk: [K/W]: **6**

Device mounted by: **Screw**

FI 322/SE



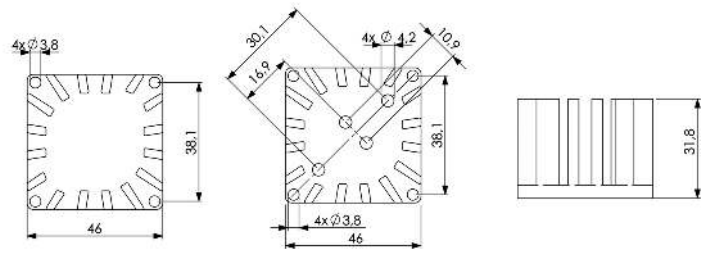
For Casing: **TO 3**

Rthk: [K/W]: **6**

Device mounted by: **Screw**

FI 340/31,8/SL/TO3

Also available in Press Blank as Article FI340 / 31.8 / TO3.



For Casing: **TO 3**

R_{thk}: [K/W]: **4.8**

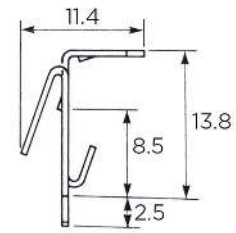
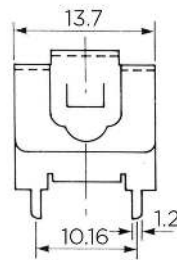
Device mounted by: **Screw**



Use our interactive R_{thK}-calculator online to determine the needed heat resistance of your heat sink!

CK 970

out of Brass.



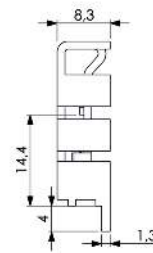
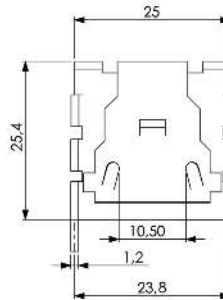
For Casing: **TO 92**

Rthk: [K/W]: **40**

Device mounted by: **Clip on**

FI 353/SN

Full Tinned



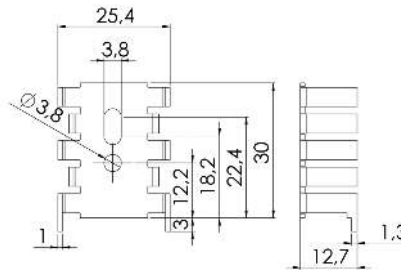
For Casing: **TO 220**

Rthk: [K/W]: **20**

Device mounted by: **Clip on**

FI 351/30/SN

Full Tinned

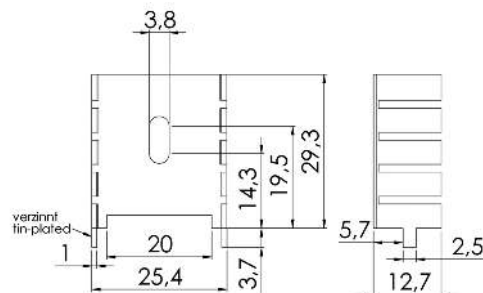


For Casing: **TO 126, (SOT32), TO 220** Rthk: [K/W]: **17**

Device mounted by: **Screw**

FI 306/SN

Full Tinned



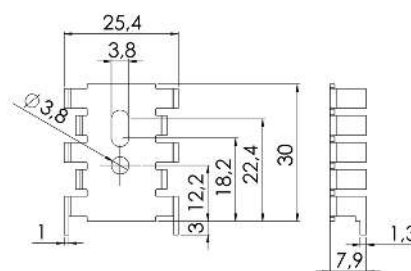
For Casing: **TO 220**

Rthk: [K/W]: **22.5**

Device mounted by: **Screw**

FI 347/30/SN

Full Tinned

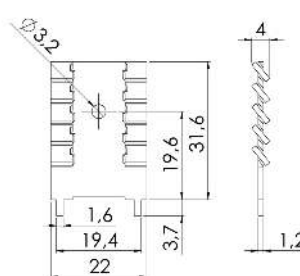


For Casing: **TO220, TO126, (SOT32)** Rthk: [K/W]: **20**

Device mounted by: **Screw**

FI 300/SN

Full Tinned



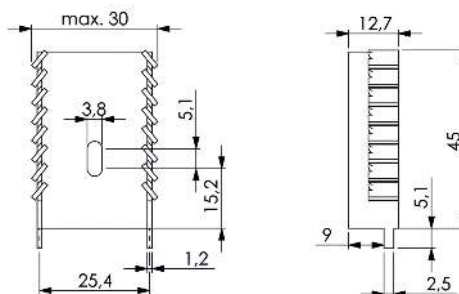
For Casing: **TO 220**

Rthk: [K/W]: **29.5**

Device mounted by: **Screw**

FI 307/SN

Full Tinned



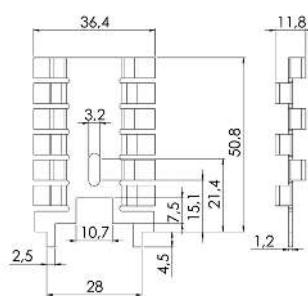
For Casing: **TO 220**

Rthk: [K/W]: **15.5**

Device mounted by: **Screw**

FI 308/SN

Full Tinned



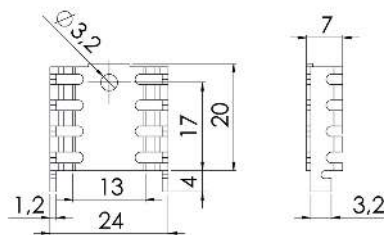
For Casing: **TO 220, TO 202**

Rthk: [K/W]: **16.5**

Device mounted by: **Screw**

FI 302/SN

Full Tinned



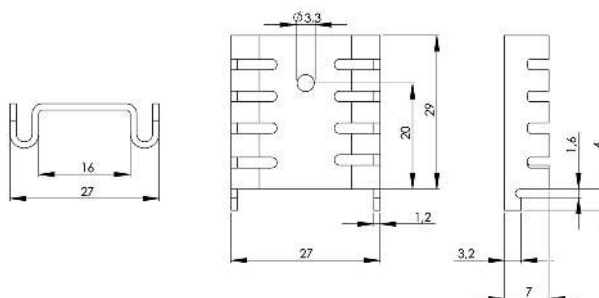
For Casing: **TO 220**

Rthk: [K/W]: **23.5**

Device mounted by: **Screw**

FI 303/SN

Full Tinned



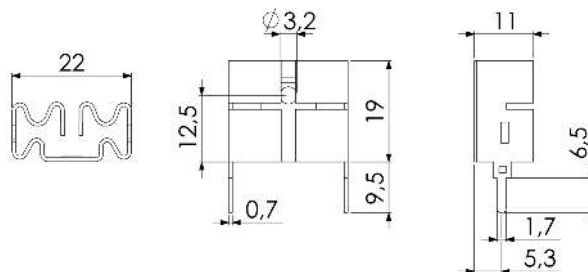
For Casing: **TO 220**

Rthk: [K/W]: **22.5**

Device mounted by: **Screw**

CK 985/SN

Full Tinned



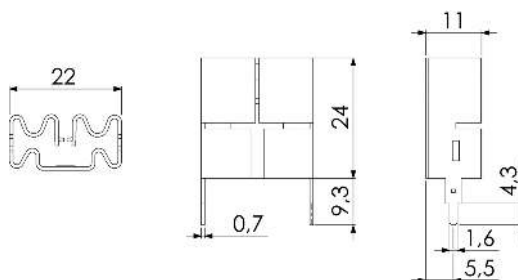
For Casing: **TO 220**

Rthk: [K/W]: **20**

Device mounted by: **Clip on**

CK 990/SN

Full Tinned

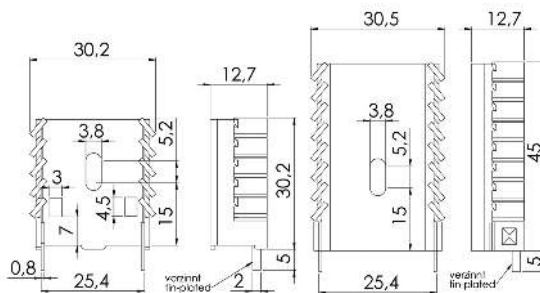


For Casing: **TO 220**

Rthk: [K/W]: **19.5**

Device mounted by: **Clip on**

FI 309



For Casing: **TO 220**

Device mounted by: **Screw**

article	Rthk [K/W]	Height [mm]
FI 309/30,2/SE	17	30.2
FI 309/45/SE	13	45

FI 343/SE

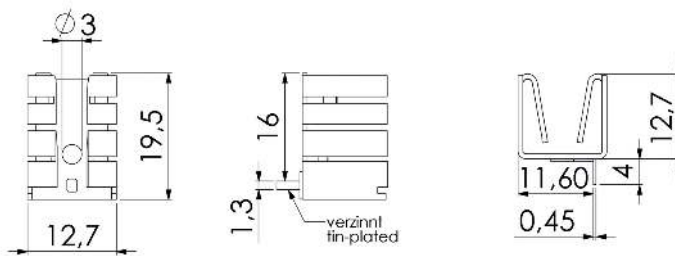


For Casing: **TO 220**

Rthk: [K/W]: **25**

Device mounted by: **Clip on**

FI 342/SE

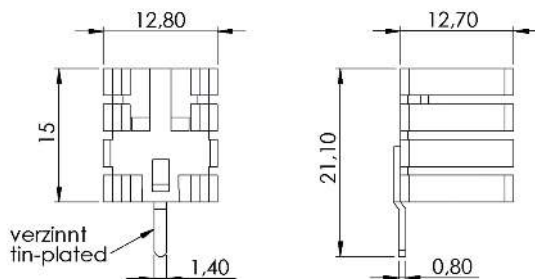


For Casing: **TO 220**

Rthk: [K/W]: **25**

Device mounted by: **Clip on**

FI 326/SE

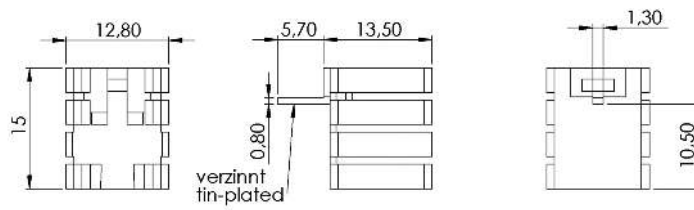


For Casing: **TO 220**

Rthk: [K/W]: **26**

Device mounted by: **Clip on**

FI 327/SE

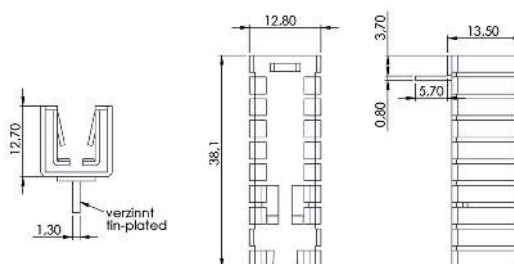


For Casing: **TO 220**

Rthk: [K/W]: **26**

Device mounted by: **Clip on**

FI 330/SE



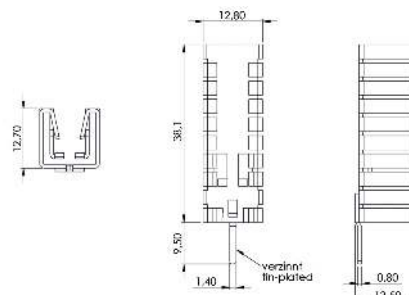
For Casing: **TO 220**

Rthk: [K/W]: **16**

Device mounted by: **Clip on**

FI 331/SE

Soldering pin length 9.5



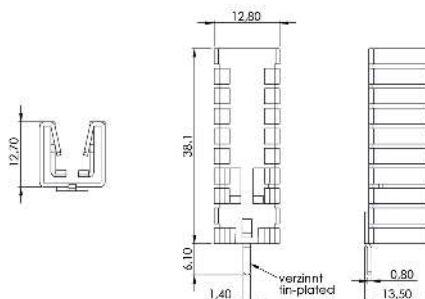
For Casing: **TO 220**

Rthk: [K/W]: **16**

Device mounted by: **Clip on**

FI 329/SE

Soldering pin length 6.1

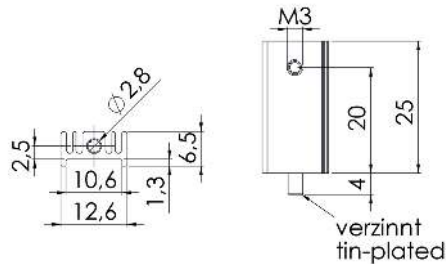


For Casing: **TO 220**

Rthk: [K/W]: **16**

Device mounted by: **Clip on**

PR 5/25/SE/LS

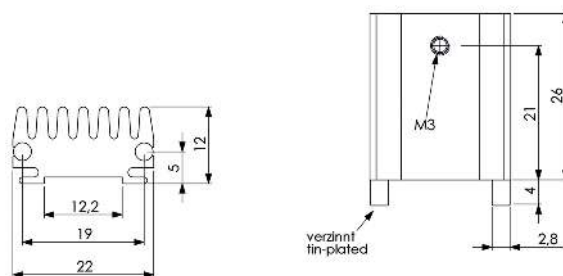


For Casing: **TO 220**

Rthk: [K/W]: **32**

Device mounted by: **Screw**

PR 6/26/SE/LS

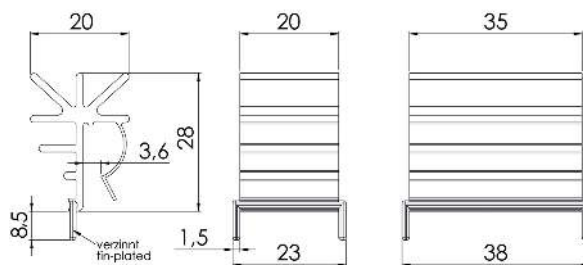


For Casing: **TO 220**

Rthk: [K/W]: **14**

Device mounted by: **Screw**

CK 960

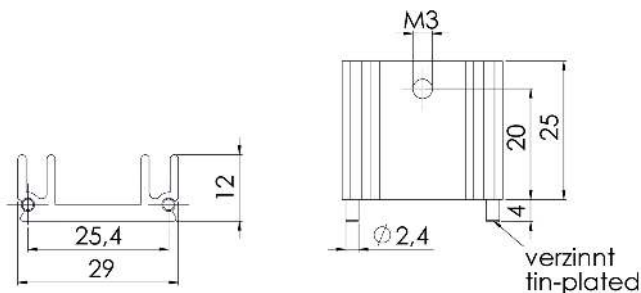


For Casing: **TO 220**

Device mounted by: **Clip on**

article	Rthk [K/W]	Width [mm]
CK 960/20/SE	13	20
CK 960/35/SE	11	35

PR 29/25/SE/LS

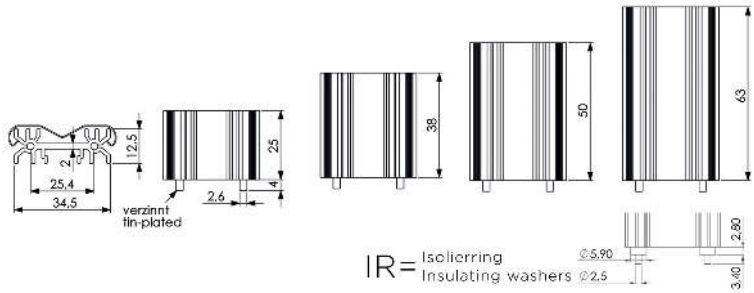


For Casing: **TO 220**

Rthk: [K/W]: **14**

Device mounted by: **Screw**

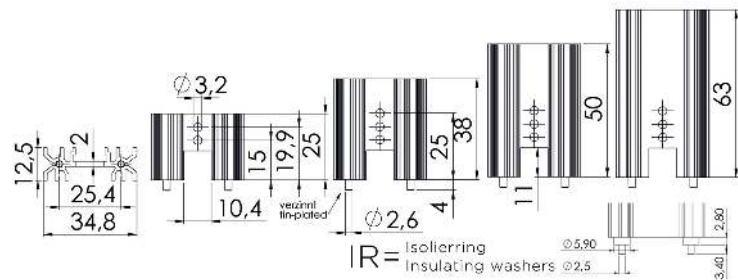
PR 28 for clip mounting



For Casing: **TO220, TO202, TO218 (TOP 3)** Device mounted by: **Mounting Clip** For Mounting Clip: **MC 28**

article	Rthk [K/W]	Height [mm]
PR 28/25/MC	13	25
PR 28/38/MC	10	38
PR 28/50/MC	8.6	50
PR 28/63/MC	6.8	63
PR 28/25/MC/IR	13	25
PR 28/38/MC/IR	10	38
PR 28/50/MC/IR	8.6	50
PR 28/63/MC/IR	6.8	63

PR 28 for screw mounting



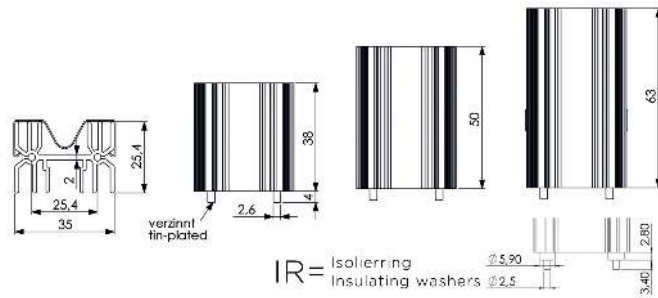
For Casing: **TO220, TO202, TO218 (TOP 3)** Device mounted by: **Screw**

article	Rthk [K/W]	Height [mm]
PR 28/25/SE	13	25
PR 28/38/SE	10	38
PR 28/50/SE	8.6	50
PR 28/63/SE	6.8	63
PR28/25/SE/IR	13	25
PR 28/38/SE/IR	10	38
PR 28/50/SE/IR	8.6	50
PR 28/63/SE/IR	6.8	63



Alutronic delivers custom-cut silicone foils to fit you application - starting with lot size 1!

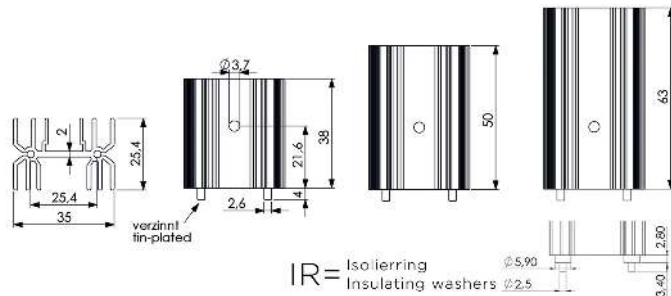
PR 31 for clip mounting



For Casing: **TO220, TO218 (TOP 3)** Device mounted by: **Mounting Clip** For Mounting Clip: **MC 31**

article	Rthk [K/W]	Height [mm]
PR 31/38/MC	7.2	38
PR 31/50/MC	5.8	50
PR 31/63/MC	4.7	63
PR 31/38/MC/IR	7.2	38
PR 31/50/MC/IR	5.8	50
PR 31/63/MC/IR	4.7	63

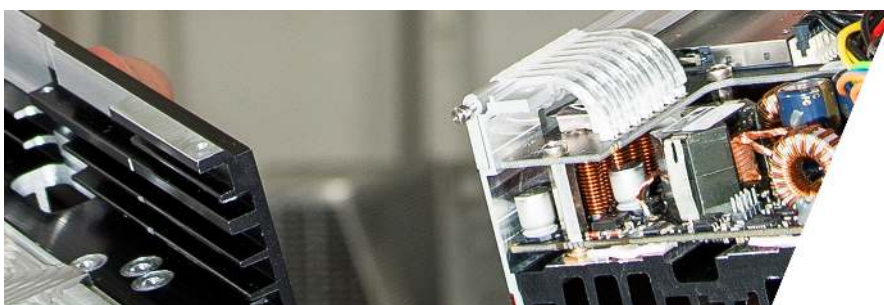
PR 31 for screw mounting



For Casing: **TO 220, TO 218, (TOP 3)**

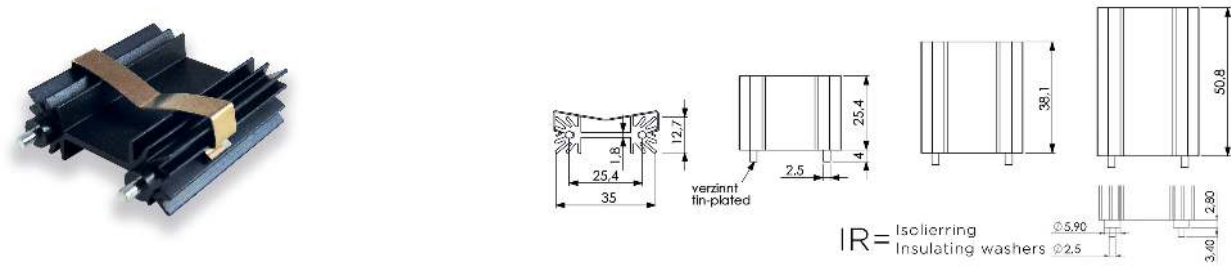
Device mounted by: **Screw**

article	Rthk [K/W]	Height [mm]
PR 31/38/SE	7.2	38
PR 31/50/SE	5.8	50
PR 31/63/SE	4.7	63
PR 31/38/SE/IR	7.2	38
PR 31/50/SE/IR	5.8	50
PR 31/63/SE/IR	4.7	63



Alutronic offers pre-assembly of standard and customized distant bolts!

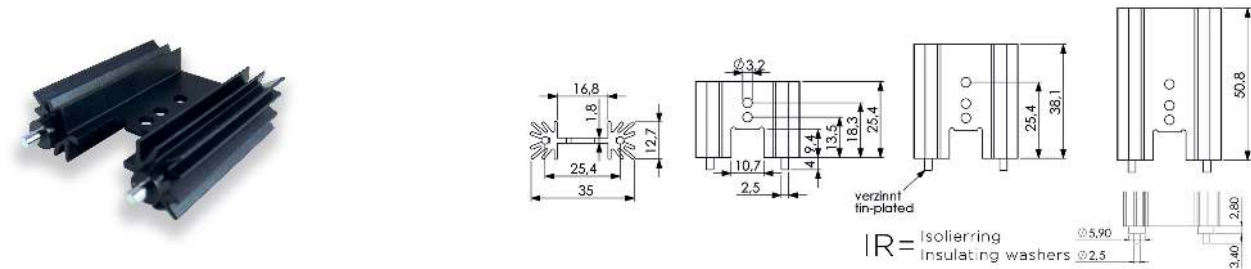
PR 32 for clip mounting



For Casing: **TO 220, TO 218, TOP 3, TO 202** Device mounted by: **Mounting Clip** For Mounting Clip: **MC 32**

article	Rthk [K/W]	Height [mm]
PR 32/25,4/MC	14	25.4
PR 32/38,1/MC	11	38.1
PR 32/50,8/MC	9	50.8
PR 32/25,4/MC/IR	14	25.4
PR 32/38,1/MC/IR	11	38.1
PR 32/50,8/MC/IR	9	50.8

PR 32 for screw mounting

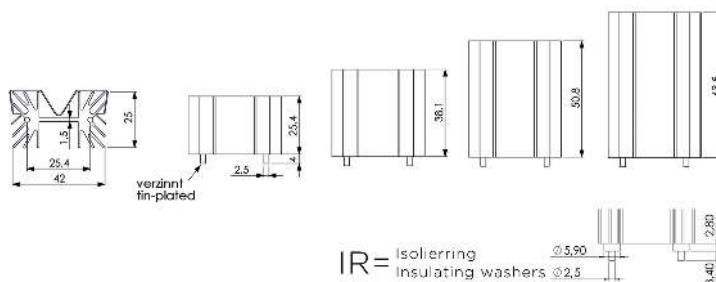
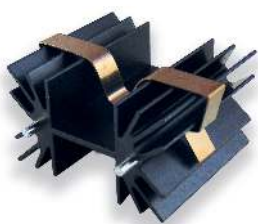


For Casing: **TO 220, TO202, TO218 (TOP 3)**

Device mounted by: **Screw**

article	Rthk [K/W]	Height [mm]
PR 32/25,4/SE	14	25.4
PR 32/38,1/SE	11	38.1
PR 32/50,8/SE	9	50.8
PR 32/25,4/SE/IR	14	25.4
PR 32/38,1/SE/IR	11	38.1
PR 32/50,8/SE/IR	9	50.8

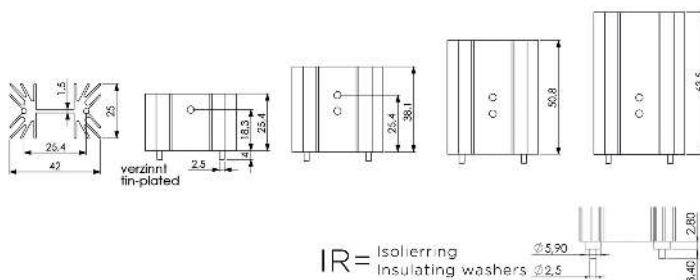
PR 33 for clip mounting



For Casing: **TO220, TO 218 (TOP 3)** Device mounted by: **Mounting Clip** For Mounting Clip: **MC 33**

article	Rthk [K/W]	Height [mm]
PR 33/25,4/MC	6.2	25.4
PR 33/38,1/MC	5	38.1
PR 33/50,8/MC	4.2	50.8
PR 33/63,5/MC	3.6	63.5
PR 33/25,4/MC/IR	6.2	25.4
PR 33/38,1/MC/IR	5	38.1
PR 33/50,8/MC/IR	4.2	50.8
PR 33/63,5/MC/IR	3.6	63.5

PR 33 for screw mounting



For Casing: **TO 220, TO 218, (TOP 3)**

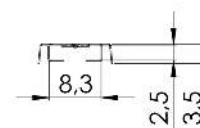
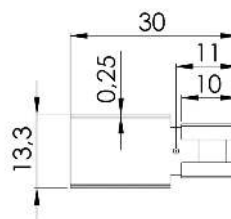
Device mounted by: **Screw**

article	Rthk [K/W]	Height [mm]
PR 33/25,4/SE	6.2	25.4
PR 33/38,1/SE	5	38.1
PR 33/50,8/SE	4.2	50.8
PR 33/63,5/SE	3.6	63.5
PR 33/25,4/SE/IR	6.2	25.4
PR 33/38,1/SE/IR	5	38.1
PR 33/50,8/SE/IR	4.2	50.8
PR 33/63,5/SE/IR	3.6	63.5



Alutronic offers the "ClipTool" as a easy manual mounting of clip-on semiconductors- simple and efficient!

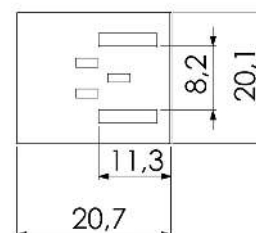
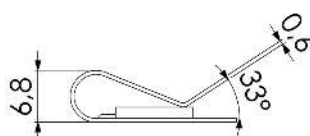
CK 932



For Casing: **TO126, (SOT32), SOT82** Rthk: [K/W]: **60**

Device mounted by: **Clip on**

CK 632/SE

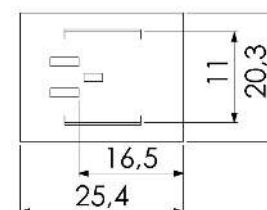
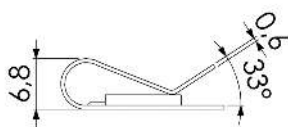


For Casing: **TO126 (SOT32)**

Rthk: [K/W]: **22**

Device mounted by: **Clip on**

CK 633/SE

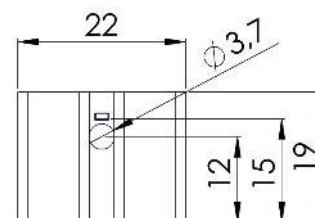
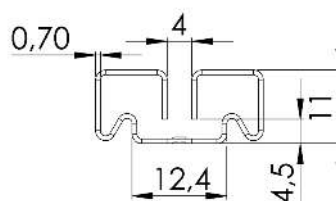


For Casing: **TO 220**

Rthk: [K/W]: **21**

Device mounted by: **Clip on**

CK 980

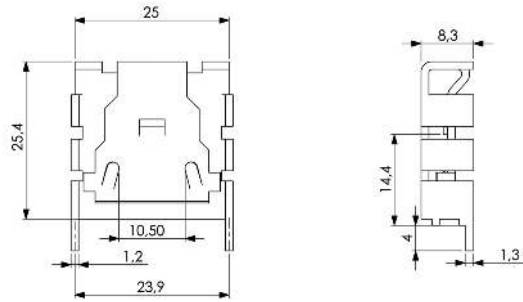


For Casing: **TO 220**

Rthk: [K/W]: **21**

Device mounted by: **Clip on**

FI 353/SE

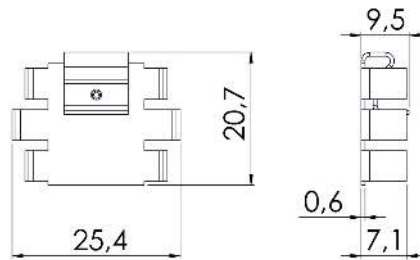


For Casing: **TO 220**

Rthk: [K/W]: **18**

Device mounted by: **Clip on**

FI 344/SE

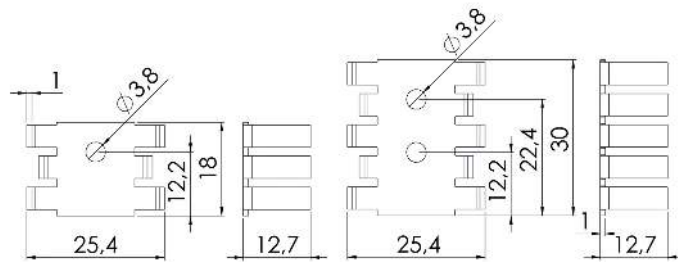


For Casing: **TO 220**

Rthk: [K/W]: **27**

Device mounted by: **Clip on**

FI 349

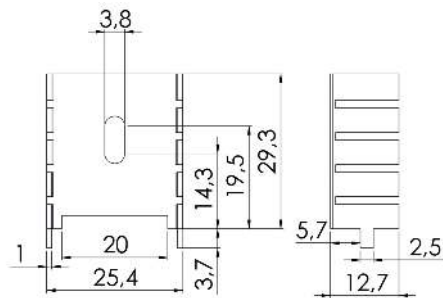


For Casing: **SOT32 (TO126), TO220**

Device mounted by: **Screw**

article	Rthk [K/W]	Height [mm]
FI 349/18/SE	21	18
FI 349/30/SE	15	30

FI 306/SE

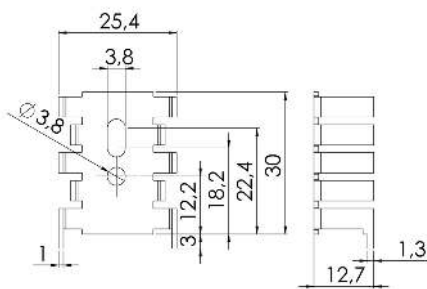


For Casing: **TO 220**

Rthk: [K/W]: **20**

Device mounted by: **Screw**

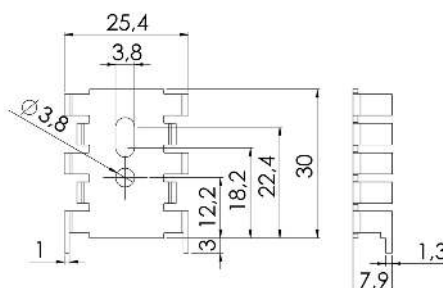
FI 351/30/SE



For Casing: **TO 126, (SOT32), TO 220** Rthk: [K/W]: **15**

Device mounted by: **Screw**

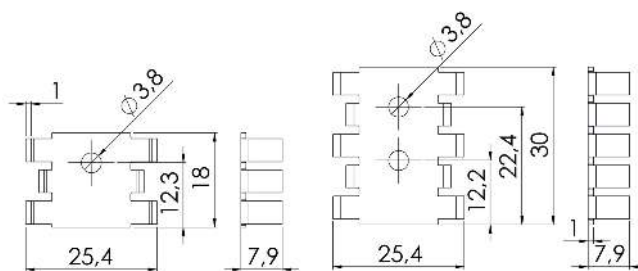
FI 347/30/SE



For Casing: **TO 126, (SOT32), TO 220** Rthk: [K/W]: **18**

Device mounted by: **Screw**

FI 345

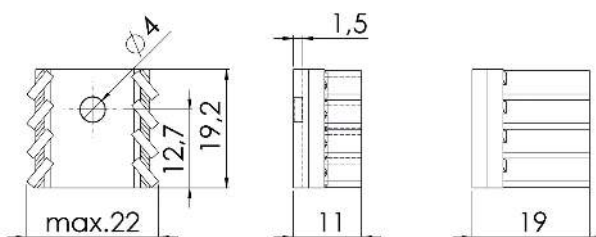


For Casing: **SOT32 (TO126), TO220**

Device mounted by: **Screw**

article	Rthk [K/W]	Height [mm]
FI 345/18/SE	25	18
FI 345/30/SE	18	30

FI 355

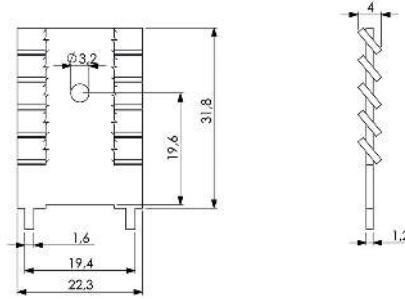


For Casing: **TO 220**

Device mounted by: **Screw**

article	Rthk [K/W]	Height [mm]
FI 355/11/SE	30	11
FI 355/19/SE	21	19

FI 300/SE

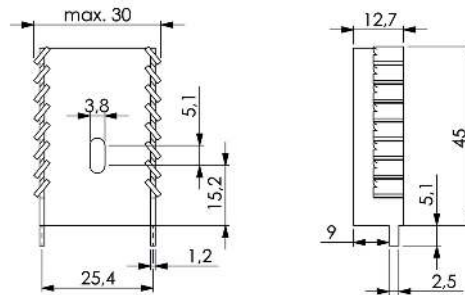


For Casing: **TO 220**

Rthk: [K/W]: **27**

Device mounted by: **Screw**

FI 307/SE

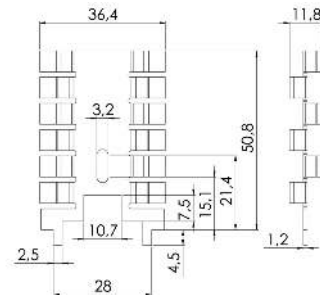


For Casing: **TO 220**

Rthk: [K/W]: **13**

Device mounted by: **Screw**

FI 308/SE

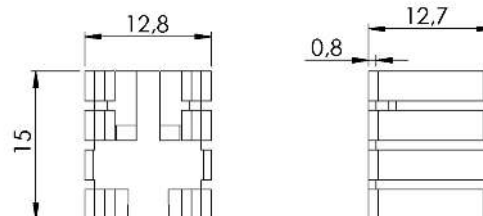


For Casing: **TO 220, TO 202**

Rthk: [K/W]: **14**

Device mounted by: **Screw**

FI 328/SE

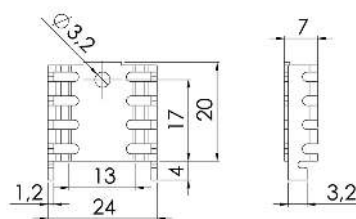


For Casing: **TO 220**

Rthk: [K/W]: **26**

Device mounted by: **Clip on**

FI 302/SE

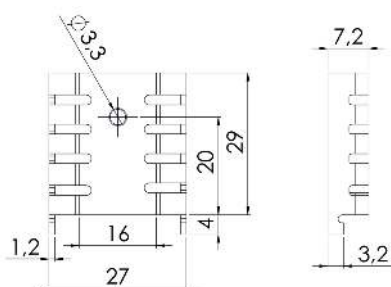


For Casing: **TO 220**

Rthk: [K/W]: **21**

Device mounted by: **Screw**

FI 303/SE

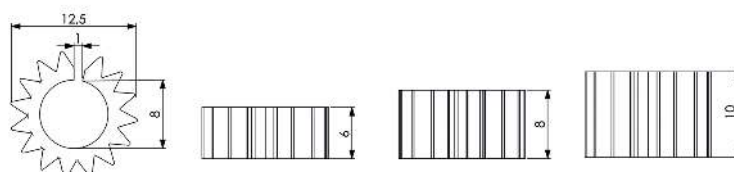


For Casing: **TO 220**

Rthk: [K/W]: **20**

Device mounted by: **Screw**

FE 372



For Casing: **TO5, TO 39**

Device mounted by: **Clip on**

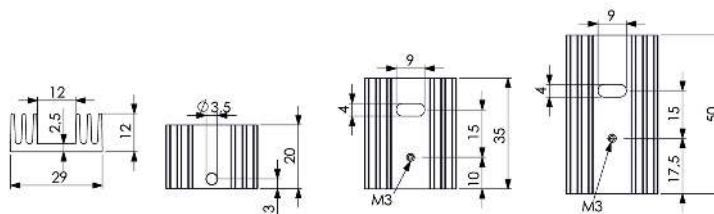
article	Rthk [K/W]	Height [mm]
FE372/6/AL	63	6
FE372/8/AL	54	8
FE372/10/AL	44	10



Questions?
We like to help out!
Call us at +49-2353-915-5

PR 19 with standard perforation

You will find the basic profile PR 20 in the section Heat Sink Extrusions with Gap on Fin Side



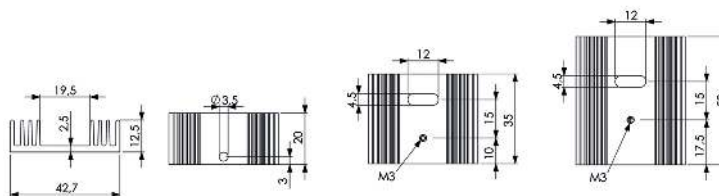
For Casing: **TO 220**

Device mounted by: **Screw**

article	Rthk [K/W]	Length [mm]
PR 19/20/SE	13.5	20
PR19/35/SE	12	35
PR 19/50/SE	9.5	50

PR 21 with standard perforation

You will find the basic profile PR 22 in the section Heat Sink Extrusions with Gap on Fin Side

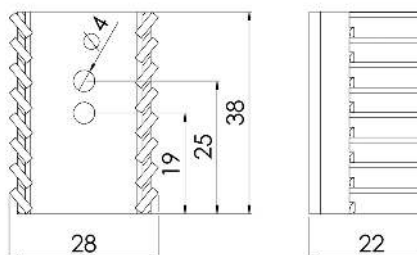


For Casing: **TO 220**

Device mounted by: **Screw**

article	Rthk [K/W]	Length [mm]
PR21/20/SE	11	20
PR21/35/SE	9.5	35
PR21/50/SE	8	50

FI 356/SE



For Casing: **TO 220**

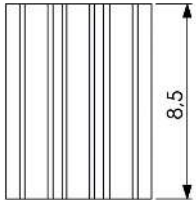
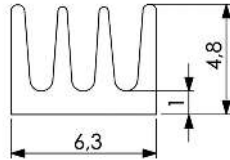
Rthk: [K/W]: **9.9**

Device mounted by: **Screw**

Adhesive Heat Sinks for Single Mounting

The attachment method of the following heat sinks is by double-sided adhesive, thermally conducting film, e.g. SI 0,13-DS.
Technical specifications for the SI 0,13-DS are given in the chapter Insulation + Heat Conduction / Silicone Washers.

PR 7/8,5/SE

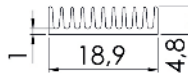


For Casing: **DIL 6/8 polig**

Rthk: [K/W]: **80**

Device mounted by: **adhesive**

PR8



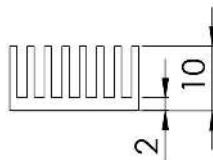
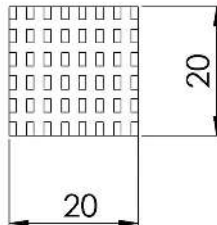
For Casing: **DIL**

Device mounted by: **adhesive**

article	Rthk [K/W]	Length [mm]
PR 8/6,3/SE	50	6,3
PR 8/33/SE	13	33
PR 8/37/SE	11	37
PR 8/47/SE	9,5	47
PR 8/51/SE	8,5	51

PG 2020/10/SE/SF

with already pre-mounted, double-sided adhesive foil



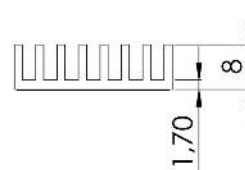
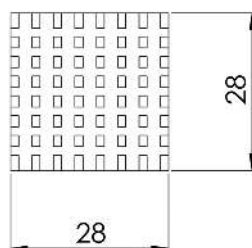
For Casing: **PGA, BGA, IC**

Rthk: [K/W]: **18**

Device mounted by: **adhesive**

PG 2828/8/SE/SF

with already pre-mounted, double-sided adhesive foil



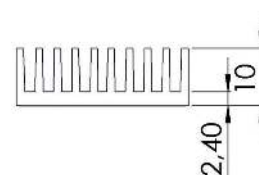
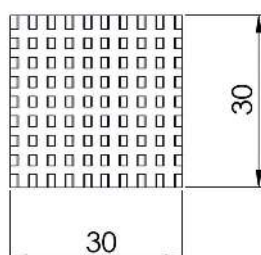
For Casing: **PGA, BGA, IC**

Rthk: [K/W]: **11**

Device mounted by: **adhesive**

PG 3030/10/SE/SF

with already pre-mounted, double-sided adhesive foil



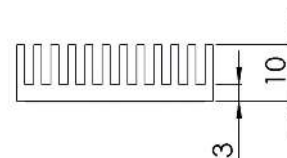
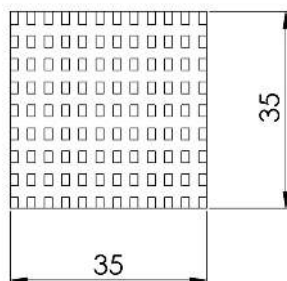
For Casing: **PGA, BGA, IC**

Rthk: [K/W]: **9.6**

Device mounted by: **adhesive**

PG 3535/10/SE/SF

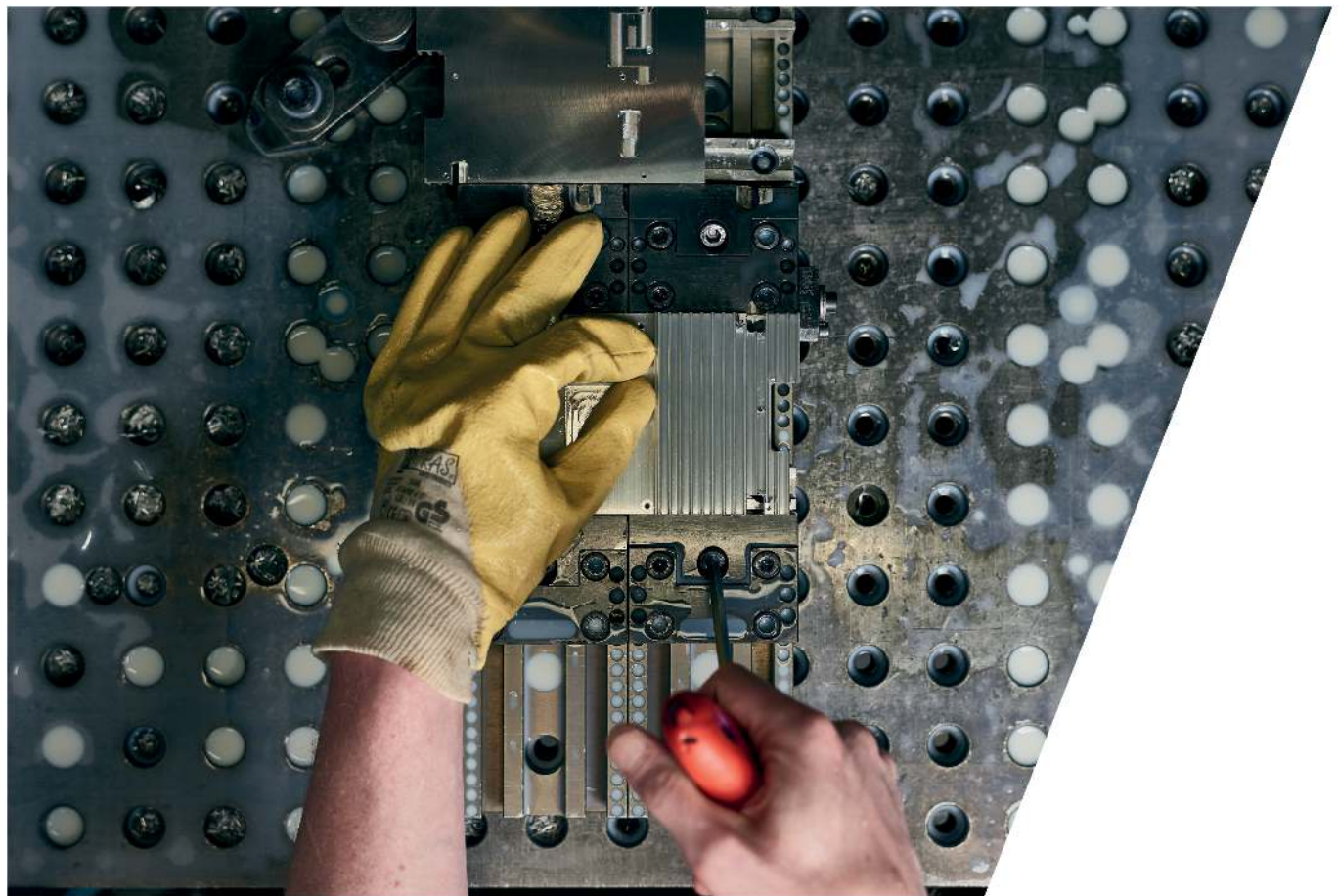
with already pre-mounted, double-sided adhesive foil



For Casing: **PGA, BGA, IC**

Rthk: [K/W]: **7.8**

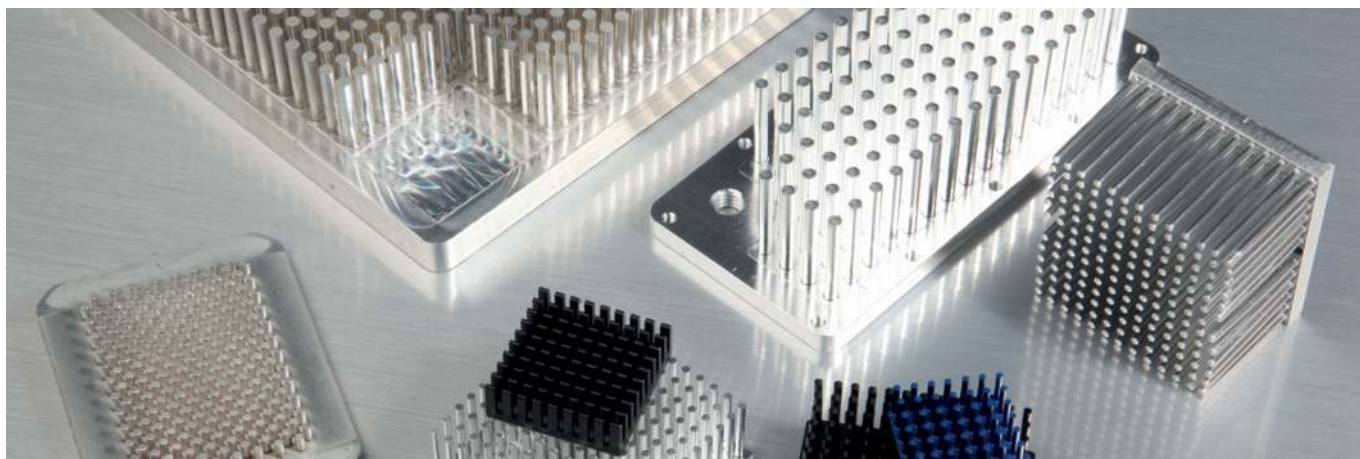
Device mounted by: **adhesive**



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Our pin heat sinks are forged piece by piece from almost pure aluminum alloy (99.5%).

This ensures very low tolerances and excellent thermal conductivity.

You will also find the right solution from a large variety of versions.

Be it with thermally conducting foils or mechanically machined (with boreholes / threads):

You will get your ready-to-assemble solution quickly, economically and reliably.

If you are unable to find solution you are looking for in this catalogue, please call us up.

We are constantly expanding our range of products, and you can also get the latest information by visiting our website at www.alutronic.de

The thermal values specified have been determined with passive or active lateral ventilation.

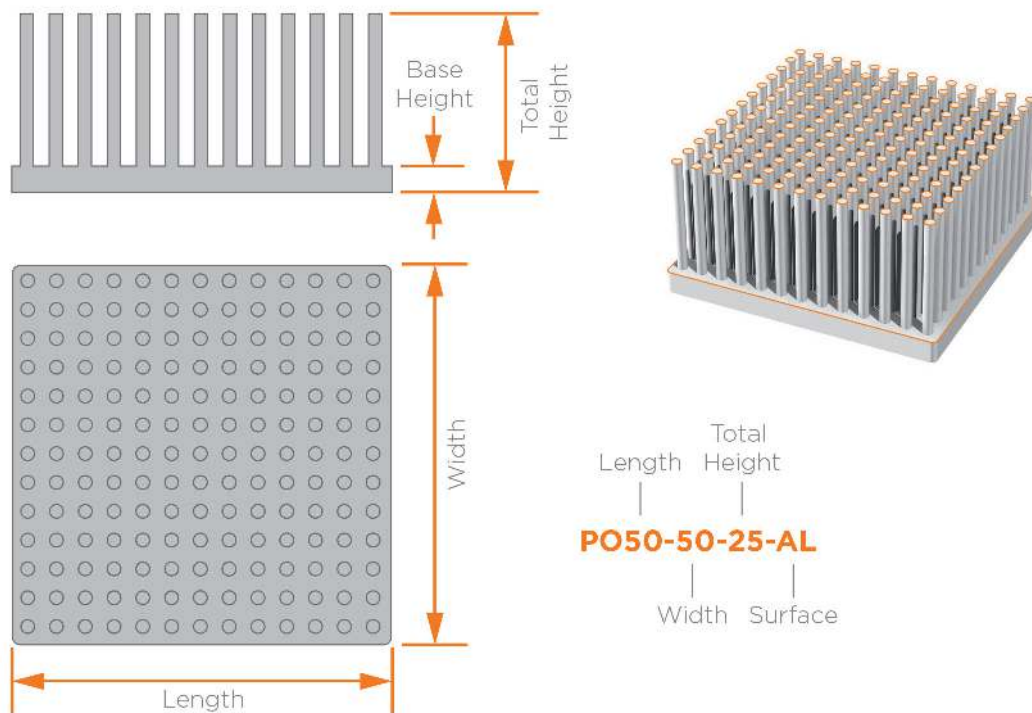
Please request from us other thermal data such as for free convection or other flow directions (from above).

Apart from our standard designs, customised dimensions (floor thickness, number of pins etc.) and mechanical machining are possible.

All Powerblocs can be supplied with the surfaces AL = aluminium blank, CR = chrome-plated, NE = natural colours anodised, SE = black anodised or BL = blue anodised.

Similarly, we supply thermally conductive film adhesive on both sides on request, pre-assembled or for your own assembly and packaging.

This is how easily the article names of the power blocks are composed:

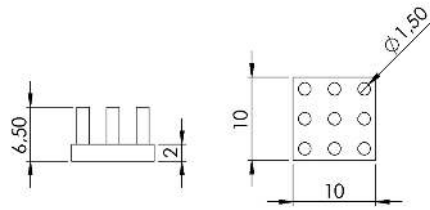


Overview Standard Shapes

Mounting surface - rectangular	Length x Width [mm]	Base height [mm]	Total height [mm]	RthK [K/W]	Powerloss [W]	Pins
PO 10-10	10x10	2	6,5 / 12,5	112,5 / 84,5	0,5	9
PO 14-14	14x14	2	6 / 10	72,5 / 58,3	0,75	16
PO 17-17	17x17	3,5	15 / 25	7,2 / 5,3	5	25
PO 18-18	18x18	2	6,5 / 12,5	6,8 / 4,8	8	49
PO 25-25	25x25	2	6,5 / 10 / 12,5 / 18,5	6,1 - 3,2	9	49
PO 30-30	30x30	3	13 / 33	2,5 / 1,6	20	64
PO 36-36	36x36	3,5	10 / 20	2,2 / 1,4	25	100
PO 40-40	40x40	3,5	10 / 20	1,5 / 1,1	40	121
PO 45-45	45x45	3,5	10 / 20	1,9 / 1,1	30	144
PO 50-50	50x50	3,5	25 / 45	0,9 / 0,7	65	81
	50x50	3,5	20 / 25	0,9 / 0,8	65	169
PO 75-50	75x50	5	15 / 35	1 / 0,6	55	96
PO 98-98	98x98	5	20 / 40	0,6 / 0,3	100 / 170	256
PO 100-75	100x75	5	15 / 35	0,4 / 0,3	80 / 120	255
PO 100-100	100x100	5	15 / 35	0,6 / 0,4	100	340
PO 120-60	120x60	5	25 / 45	0,4 / 0,3	120	240
PO 130-100	130x100	5	35	0,3	190	300
	130x100	5	35	0,3	200	638
PO 200-120	200x120	10	40	0,2	400	589
	200x120	10	40	0,1	550	1215
Mounting surface - round	Diameter [mm]	Base height [mm]	Total height [mm]	RthK [K/W]	Powerloss [W]	Pins
POR 28,5	28,5	2	6,5 / 18,5	48,3 / 26,5	1,2	44
POR 32,5	32,5	3	10 / 20	20,6 / 14,4	2,8	61
POR 36,5	36,5	3,5	10 / 20	18,6 / 13,1	3	68
POR 40	40	3	10 / 20	3,5 / 2,5	15	91
POR 50	50	3	10 / 20	2,2 / 1,5	25	127

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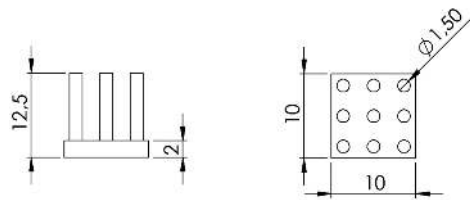
PO 10-10-6,5-AL



Rthk: [K/W]: **112.5**

Maximum Power Dissipation: [W]: **0.5** Convection type: **Passive**

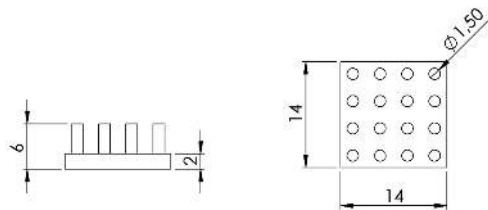
PO 10-10-12,5-AL



Rthk: [K/W]: **84.5**

Maximum Power Dissipation: [W]: **0.5** Convection type: **Passive**

PO 14-14-6-AL

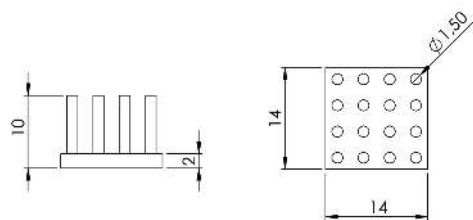


Rthk: [K/W]: **72.5**

Maximum Power Dissipation: [W]: **0.75**

Convection type: **Passive**

PO 14-14-10-AL

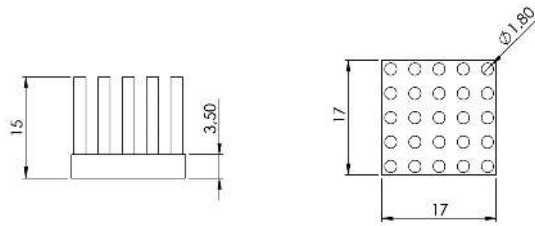


Rthk: [K/W]: **58.3**

Maximum Power Dissipation: [W]: **0.75**

Convection type: **Passive**

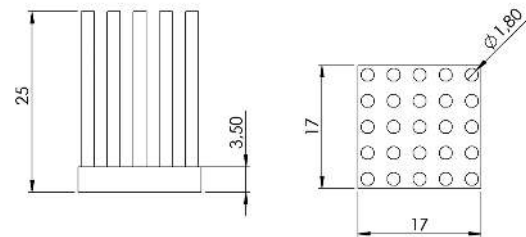
PO 17-17-15-AL



Rthk: [K/W]: **7.2**

Maximum Power Dissipation: [W]: **5** Convection type: **Active (1 m/sec)**

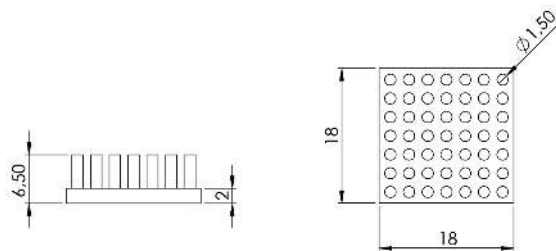
PO 17-17-25-AL



Rthk: [K/W]: **5.3**

Maximum Power Dissipation: [W]: **5** Convection type: **Active (1 m/sec)**

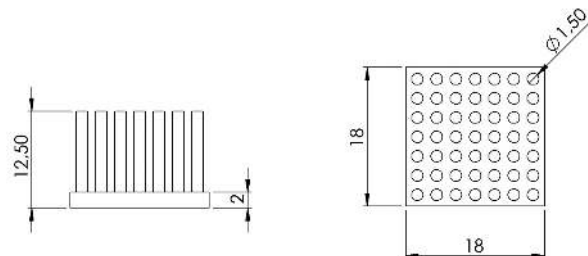
PO 18-18-6,5-AL



Rthk: [K/W]: **6.8**

Maximum Power Dissipation: [W]: **8** Convection type: **Active (1 m/sec)**

PO 18-18-12,5-AL

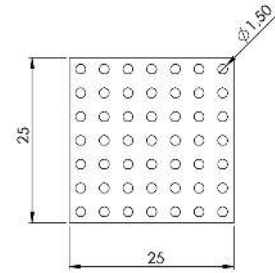
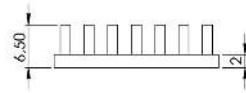


Rthk: [K/W]: **4.8**

Maximum Power Dissipation: [W]: **8** Convection type: **Active (1 m/sec)**

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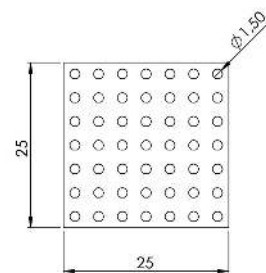
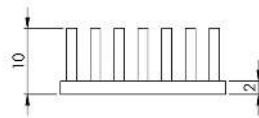
PO 25-25-6,5-AL



Rthk: [K/W]: **6.1**

Maximum Power Dissipation: [W]: **9** Convection type: **Active (1 m/sec)**

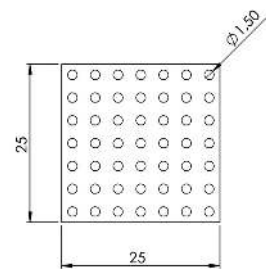
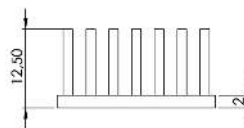
PO 25-25-10-AL



Rthk: [K/W]: **5.4**

Maximum Power Dissipation: [W]: **9** Convection type: **Active (1 m/sec)**

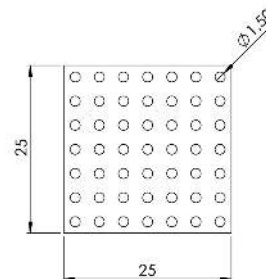
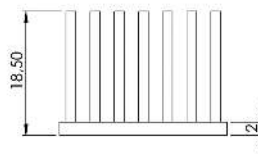
PO 25-25-12,5-AL



Rthk: [K/W]: **3.9**

Maximum Power Dissipation: [W]: **9** Convection type: **Active (1 m/sec)**

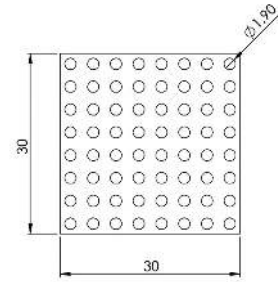
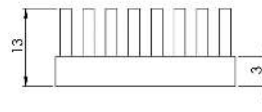
PO 25-25-18,5-AL



Rthk: [K/W]: **3.2**

Maximum Power Dissipation: [W]: **9** Convection type: **Active (1 m/sec)**

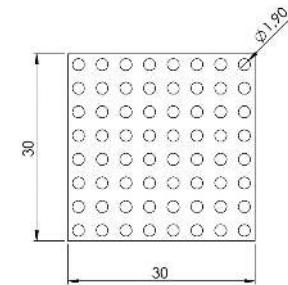
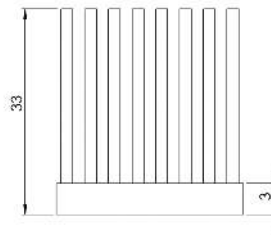
PO 30-30-13-AL



Rthk: [K/W]: **2.5**

Maximum Power Dissipation: [W]: **20** Convection type: **Active (2 m/sec)**

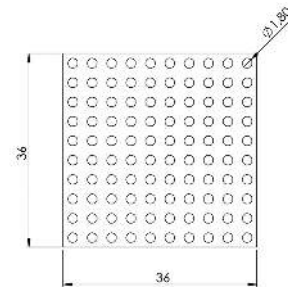
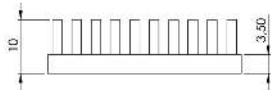
PO 30-30-33-AL



Rthk: [K/W]: **1.6**

Maximum Power Dissipation: [W]: **20** Convection type: **Active (2 m/sec)**

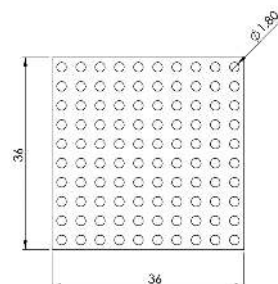
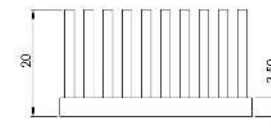
PO 36-36-10-AL



Rthk: [K/W]: **2.2**

Maximum Power Dissipation: [W]: **25** Convection type: **Active (2 m/sec)**

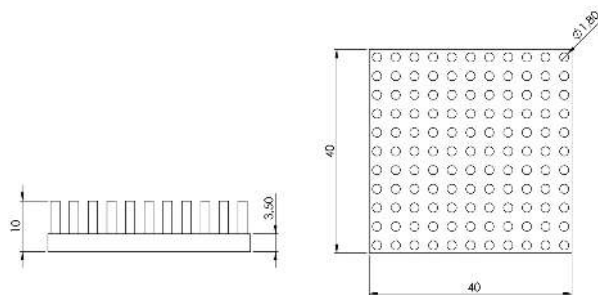
PO 36-36-20-AL



Rthk: [K/W]: **1.4**

Maximum Power Dissipation: [W]: **25** Convection type: **Active (2 m/sec)**

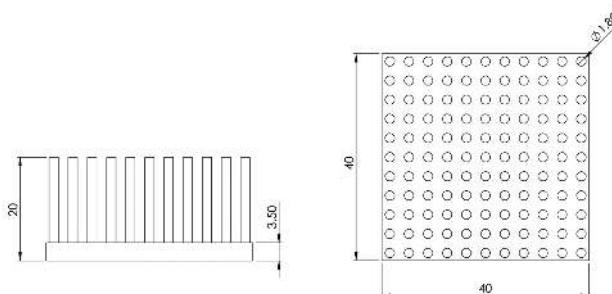
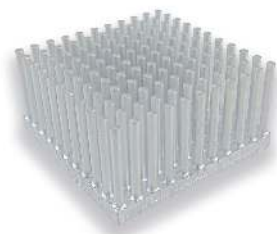
PO 40-40-10-AL



Rthk: [K/W]: **1.5**

Maximum Power Dissipation: [W]: **40** Convection type: **Active (2 m/sec)**

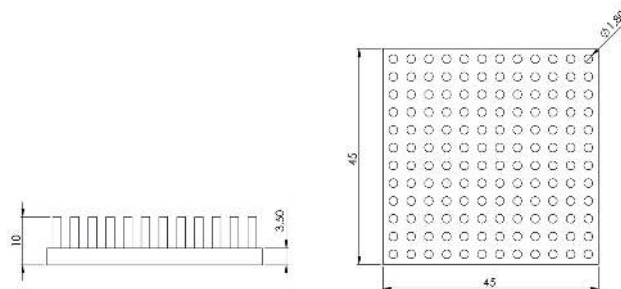
PO 40-40-20-AL



Rthk: [K/W]: **1.1**

Maximum Power Dissipation: [W]: **40** Convection type: **Active (2 m/sec)**

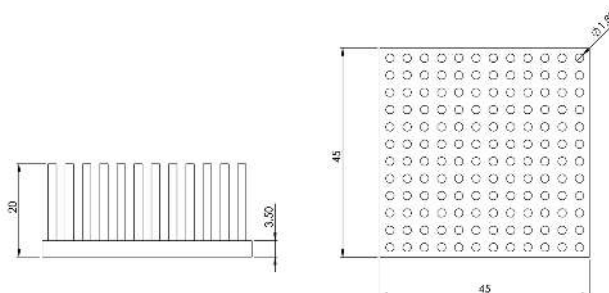
PO 45-45-10-AL



Rthk: [K/W]: **1.9**

Maximum Power Dissipation: [W]: **30** Convection type: **Active (2 m/sec)**

PO 45-45-20-AL

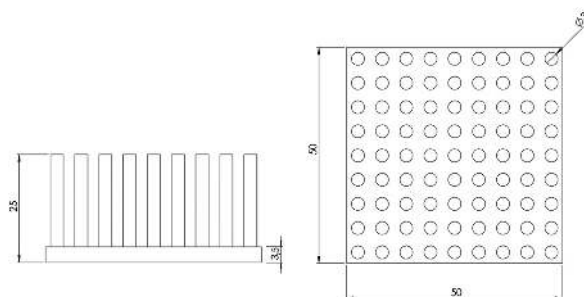


Rthk: [K/W]: **1.1**

Maximum Power Dissipation: [W]: **30** Convection type: **Active (2 m/sec)**

PO 50-50-25-AL

Features 81 pins

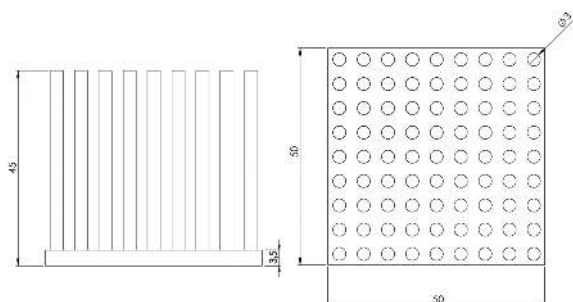


Rthk: [K/W]: **0.87**

Maximum Power Dissipation: [W]: **65** Convection type: **Active (2 m/sec)**

PO 50-50-45-AL

Features 81 pins

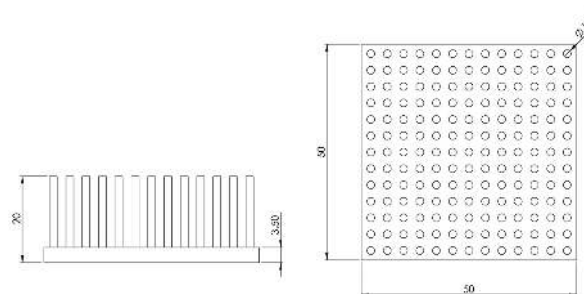


Rthk: [K/W]: **0.7**

Maximum Power Dissipation: [W]: **65** Convection type: **Active (2 m/sec)**

PO50-50-20-AL

Features 169 pins

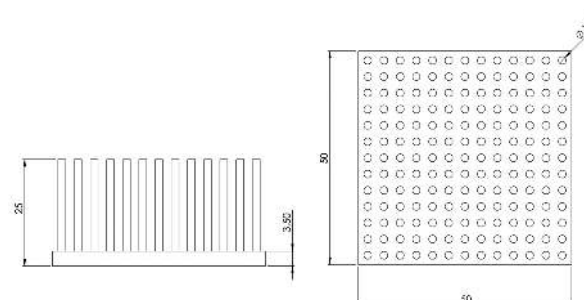


Rthk: [K/W]: **0.87**

Maximum Power Dissipation: [W]: **65** Convection type: **Active (2 m/sec)**

PO 50-50-25-AL-1

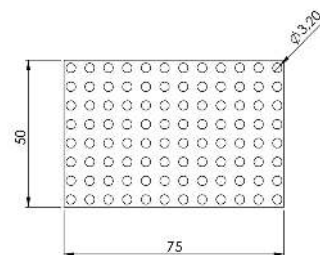
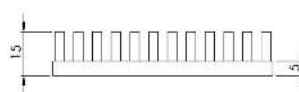
Features 169 pins



Rthk: [K/W]: **0.8**

Maximum Power Dissipation: [W]: **65** Convection type: **Active (2 m/sec)**

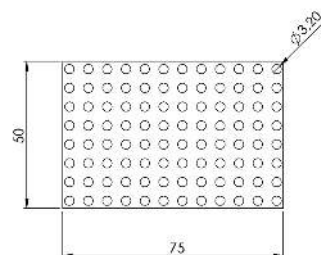
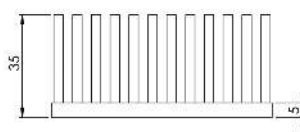
PO 75-50-15-AL



Rthk: [K/W]: **1**

Maximum Power Dissipation: [W]: **55** Convection type: **Active (2 m/sec)**

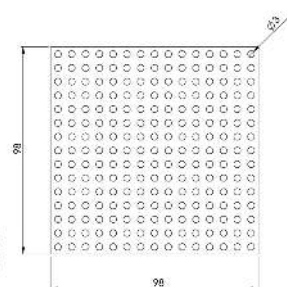
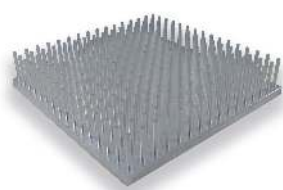
PO75-50-35-AL



Rthk: [K/W]: **0.6**

Maximum Power Dissipation: [W]: **55** Convection type: **Active (2 m/sec)**

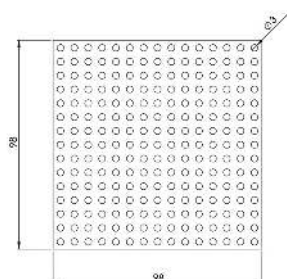
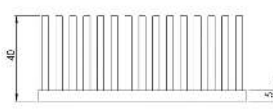
PO 98-98-20-AL



Rthk: [K/W]: **0.55**

Maximum Power Dissipation: [W]: **100** Convection type: **Active (2 m/sec)**

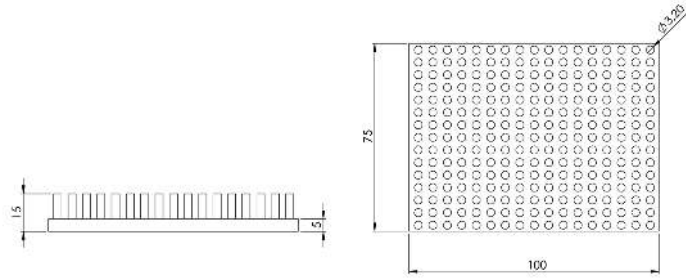
PO 98-98-40-AL



Rthk: [K/W]: **0.3**

Maximum Power Dissipation: [W]: **170** Convection type: **Active (2 m/sec)**

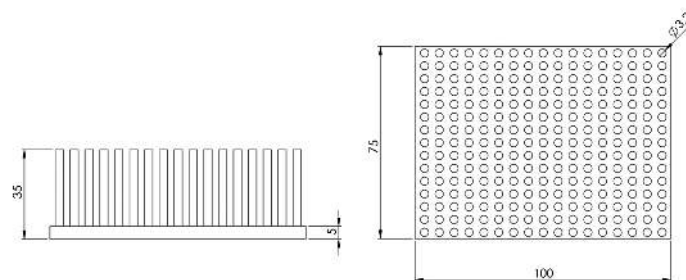
PO 100-75-15-AL



Rthk: [K/W]: **0.4**

Maximum Power Dissipation: [W]: **80** Convection type: **Active (2 m/sec)**

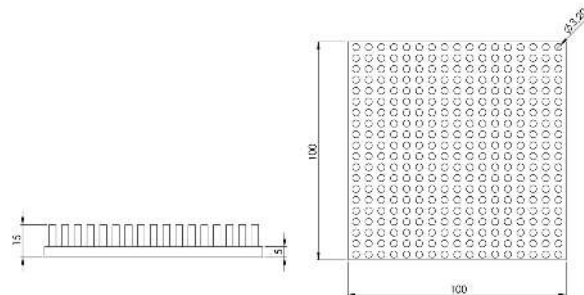
PO 100-75-35-AL



Rthk: [K/W]: **0.25**

Maximum Power Dissipation: [W]: **120** Convection type: **Active (2 m/sec)**

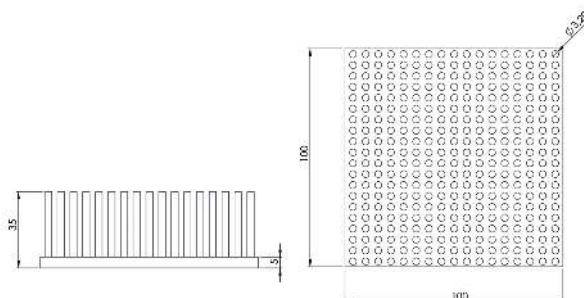
PO 100-100-15-AL



Rthk: [K/W]: **0.57**

Maximum Power Dissipation: [W]: **100** Convection type: **Active (2 m/sec)**

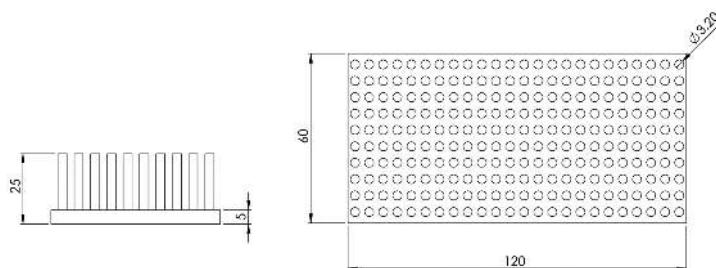
PO 100-100-35-AL



Rthk: [K/W]: **0.37**

Maximum Power Dissipation: [W]: **100** Convection type: **Active (2 m/sec)**

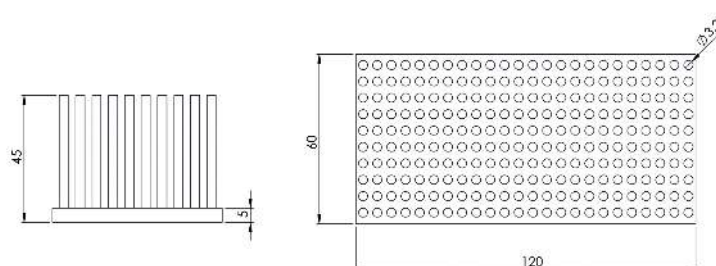
PO 120-60-25-AL



Rthk: [K/W]: **0.35**

Maximum Power Dissipation: [W]: **120** Convection type: **Active (2 m/sec)**

PO 120-60-45-AL

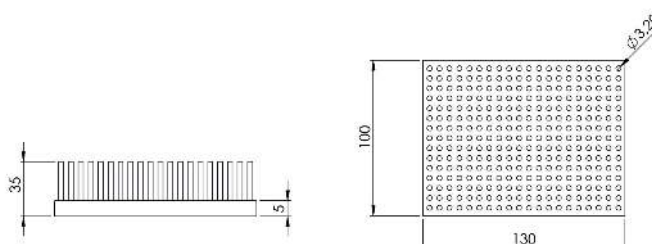


Rthk: [K/W]: **0.3**

Maximum Power Dissipation: [W]: **120** Convection type: **Active (2 m/sec)**

PO 130-100-35-AL

Features 300 pins

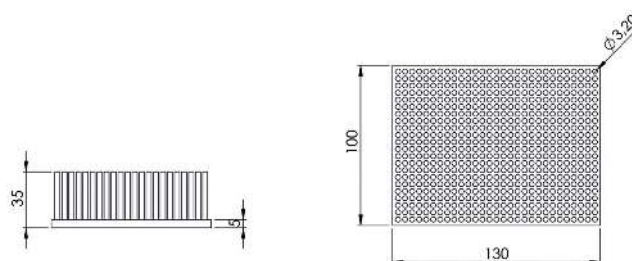


Rthk: [K/W]: **0.3**

Maximum Power Dissipation: [W]: **190** Convection type: **Active (2 m/sec)**

PO130-100-35-AL-1

Features 638 pins



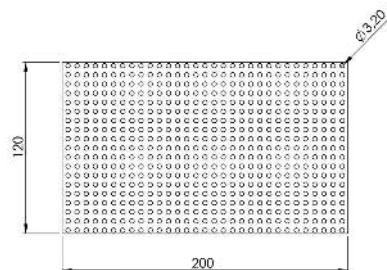
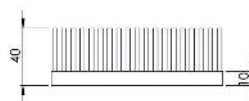
Rthk: [K/W]: **0.3**

Maximum Power Dissipation: [W]: **200**

Convection type: **Active (2 m/sec)**

PO 200-120-40-AL

Design with 689 pins
Power values with lateral ventilation



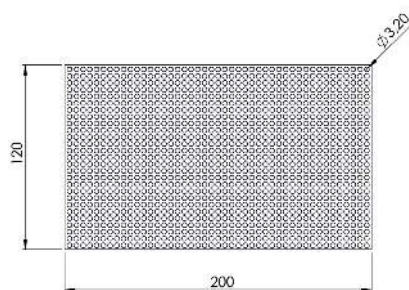
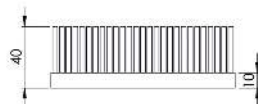
Rthk: [K/W]: **0.15**

Maximum Power Dissipation: [W]:
400

Convection type: **Active (2 m/sec)**

PO 200-120-40-AL-1

Design with 1.215 pins
Power values with lateral ventilation



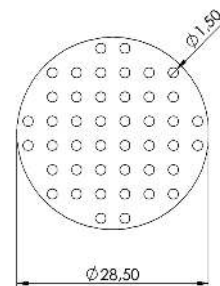
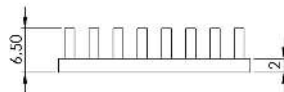
Rthk: [K/W]: **0.12**

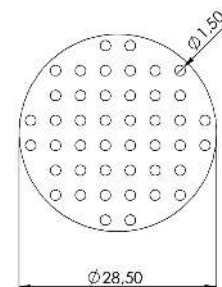
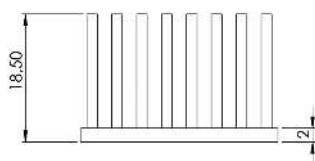
Maximum Power Dissipation: [W]:
550

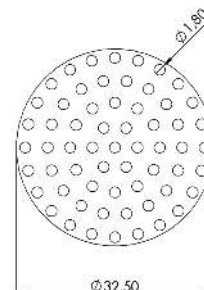
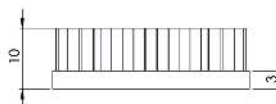
Convection type: **Active (2 m/sec)**

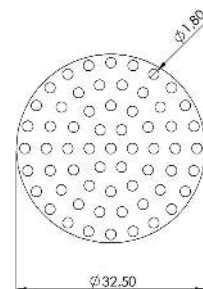
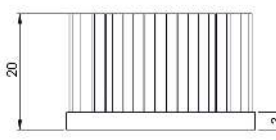


Alutronic offers thermal simulations to support your project!

POR 28,5-6,5-AL

 Rthk: [K/W]: **48.3**

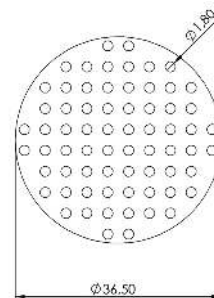
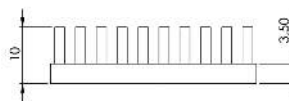
 Maximum Power Dissipation: [W]: **1.2** Convection type: **Passive**
POR 28,5-18,5-AL

 Rthk: [K/W]: **26.5**

 Maximum Power Dissipation: [W]: **1.2** Convection type: **Passive**
POR 32,5-10-AL

 Rthk: [K/W]: **20.6**

 Maximum Power Dissipation: [W]: **2.8** Convection type: **Passive**
POR 32,5-20-AL

 Rthk: [K/W]: **14.4**

 Maximum Power Dissipation: [W]: **2.8** Convection type: **Passive**

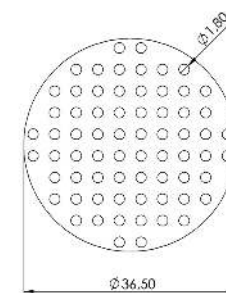
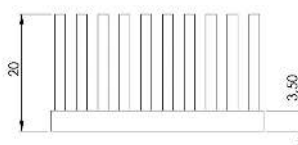
POR 36,5-10-AL



Rthk: [K/W]: **18.6**

Maximum Power Dissipation: [W]: **3** Convection type: **Passive**

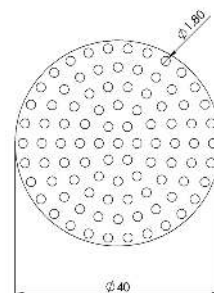
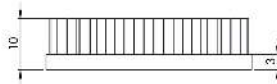
POR 36,5-20-AL



Rthk: [K/W]: **13.1**

Maximum Power Dissipation: [W]: **3** Convection type: **Passive**

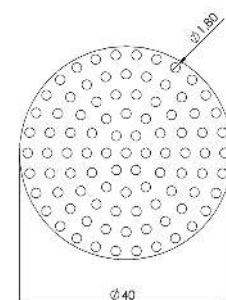
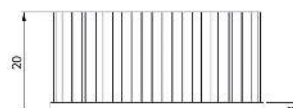
POR 40-10-AL



Rthk: [K/W]: **3.5**

Maximum Power Dissipation: [W]: **15** Convection type: **Active (2 m/sec)**

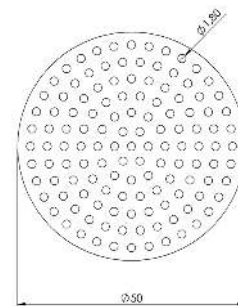
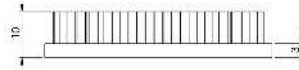
POR 40-20-AL



Rthk: [K/W]: **2.5**

Maximum Power Dissipation: [W]: **15** Convection type: **Active (2 m/sec)**

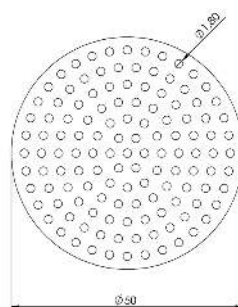
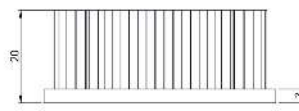
POR 50-10-AL



Rthk: [K/W]: **2.2**

Maximum Power Dissipation: [W]: **25** Convection type: **Active (2 m/sec)**

POR 50-20-AL



Rthk: [K/W]: **1.5**

Maximum Power Dissipation: [W]: **25** Convection type: **Active (2 m/sec)**



Alutronic is certified since 2004 according to ISO 9001

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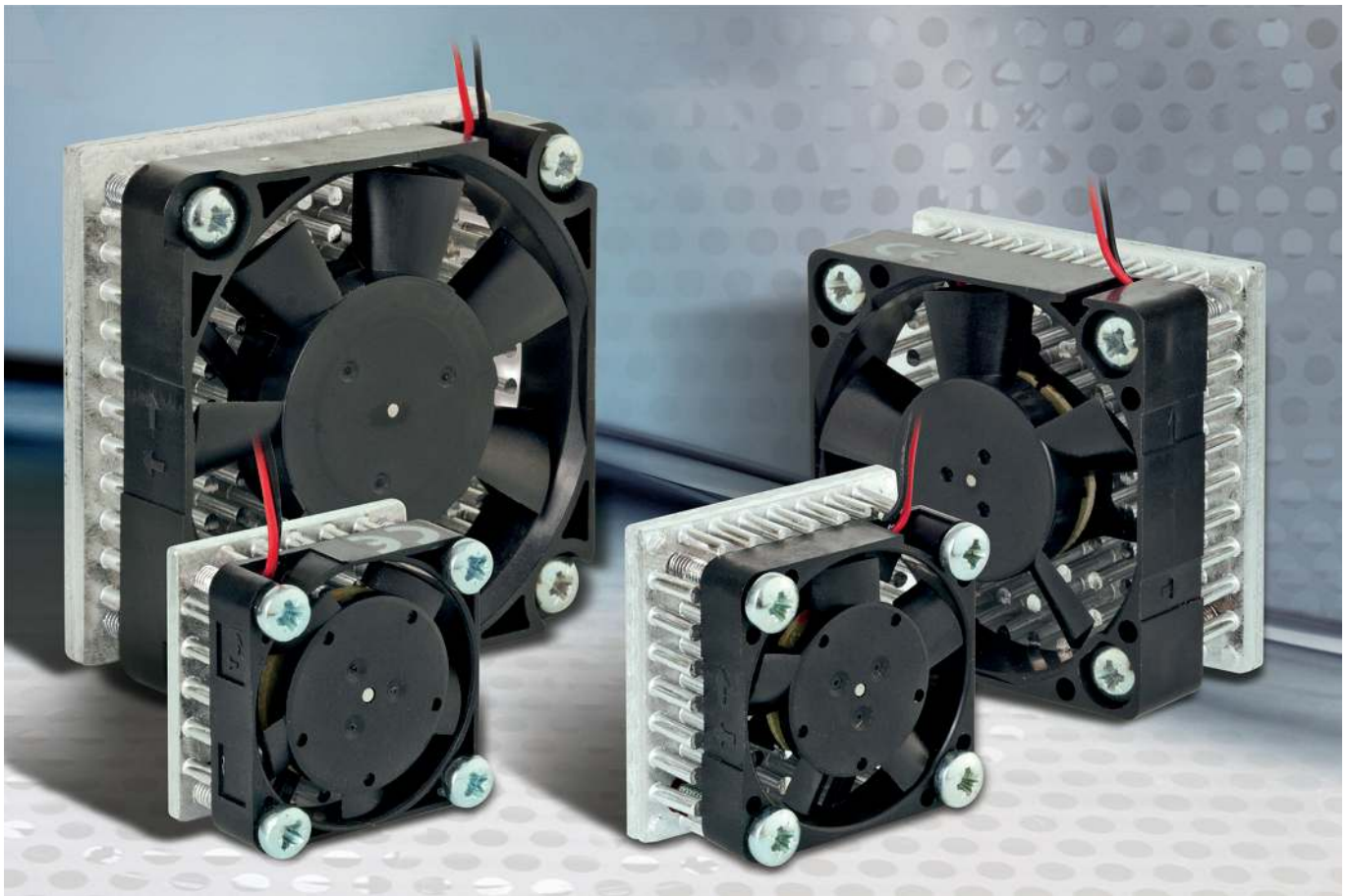
Pin Heat Sink Systems.....	112
Lamella Heat Sink Systems.....	115



- Complete solutions for compact applications
- Individually adaptable to your technical requirements
- Economical thanks to standardised components

If you are unable to find solution you are looking for in this catalogue, please call us up.

We are constantly expanding our range of products, and you can also get the latest information by visiting our website at www.alutronic.de



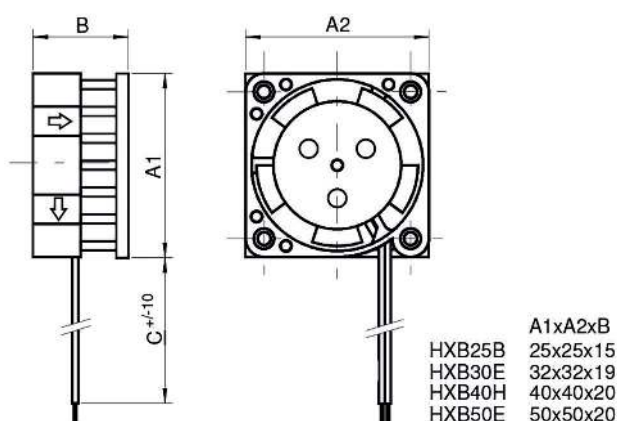
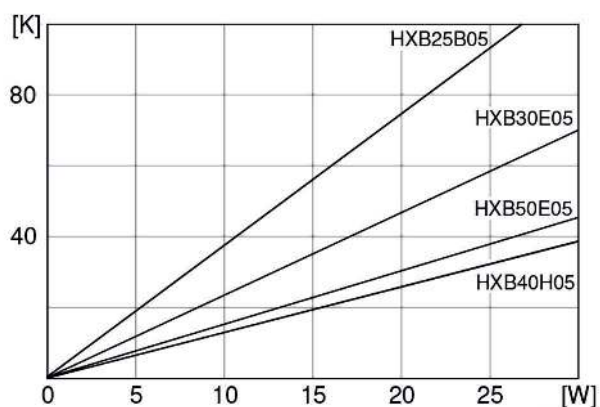
ALUTRONIC heat sink and SEPA Fan

From the fusion of ALUTRONIC heat sinks and SEPA fans the HXB models have been created. A combination, with which the fan distributes air through the heat sink for optimal cooling.

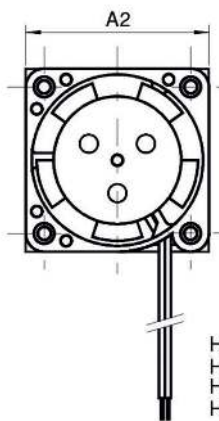
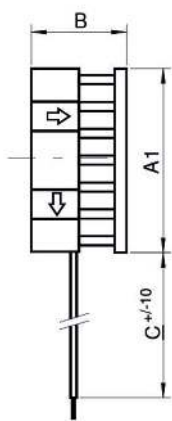
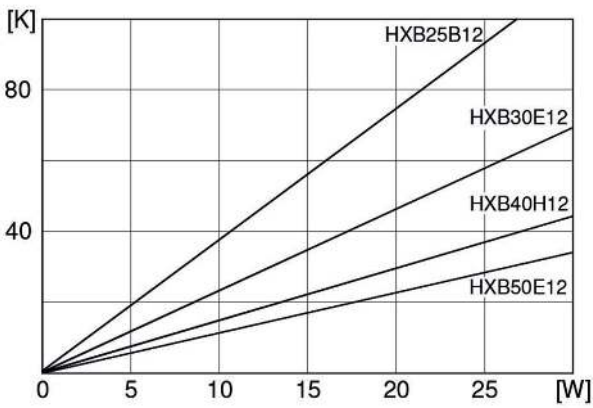
The coolers of the latest generation achieve a high flow rate with very low values of power consumption. As a result of the computer-supported development of the wing geometry, even the noise development has been optimised, and thus, the noise generated by a typical rotor speed of $11,000 \text{ rpm}^{-1}$ is very quiet with a sound level of 21 dB(A) (e.g. HXB25B12).

Another plus point is the long service life of 70,000 / 350,000 hours (L_{10} / MTBF at 40°C). Moreover, the chip coolers have an electronically commuted motor whose motor winding is switched by a special IC.

By a selection of suitable electronic components and high-quality ball bearings, the reliability of the fans is achieved at operating temperatures between -10 and $+80^\circ\text{C}$.



ARTICLE NAME		HXB25B05	HXB30E05	HXB40H05	HXB50E05
Operating voltage	[VDC]	4,5 ... 5 ... 5,5			
Typ. operating current	[mA]	40	90	90	50
Max. starts current	[mA]	120	130	250	120
Typ. thermal resistance	[K/W]	3,9	2,4	1,3	1,5
Typ. noise (1m dist. from air intake s.)	[dB(A)]	20	21	30	19
Typ. rotor speed	[RPM]	10000	8600	5800	3500
FG (...A)	[PPR]	3	3	2	2
Operating temperature	[°C]	-10 to +80			
Life expectancy L10/MTBF@ 40°C	[h]	70.000/350.000			
Bearing system		2 Ball bearings ZZ			
Weight	[g]	11	23	37	55



	A1 x A2 x B
HXB25B	25x25x15
HXB30E	32x30x19
HXB40H	40x40x20
HXB50E	50x50x20



ARTICLE NAME		HXB25B12	HXB30E12	HXB40H12	HXB50E12
Operating voltage	[VDC]	10.2 ... 12 ... 13.8			
Typ. operating current	[mA]	30	30	60	60
Max. starts current	[mA]	80	70	90	140
Typ. thermal resistance	[K/W]	42585	42492	42461	42401
Typ. noise (1m dist. from air intake s.)	[dB(A)]	21	22	25	25
Typ. rotor speed	[RPM]	11000	9000	5500	4800
FG (...A)	[PPR]	3	3	2	2
Operating temperature	[°C]	-10 to +80			
Life expectancy L10/MTBF@ 40°C	[h]	70.000/350.000			
Bearing system		2 Ball bearings ZZ			
Weight	[g]	11	23	37	55

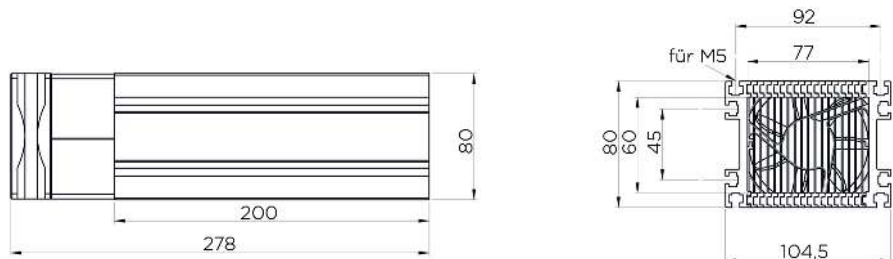
Fan units with axial blowers, also suitable for double-sided mounting of devices

- Optimisation by special lamella construction
- There are two assembly surfaces available for assembly of the semiconductor modules to be cooled, if necessary.
- The technical specifications are related to the fitting of a plane-milled assembly surface with uniform load distribution
- The pressure chamber between the fan and lamella unit ensures optimal air distribution on all blades.
- The safety regulations on technical equipment according to law must be observed and followed.

General technical specifications:

- The aluminium lamellas are chrome-plated for corrosion protection (RoHS-compliant)
- Assembly surface plane milled (R_z max. 10 μm)
- Material AlMgSi 0.5 F22
- Plug-in channels for M5 threaded nuts according to DIN 562

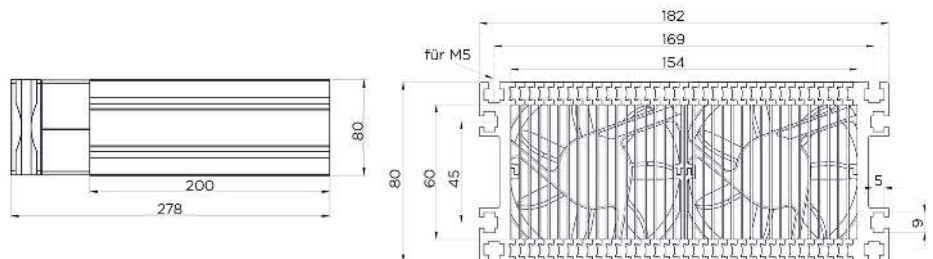
LK 10/200/A



Max. power loss: [W]: **200**

Min. thermal resistance: [K/W]: **0.131**

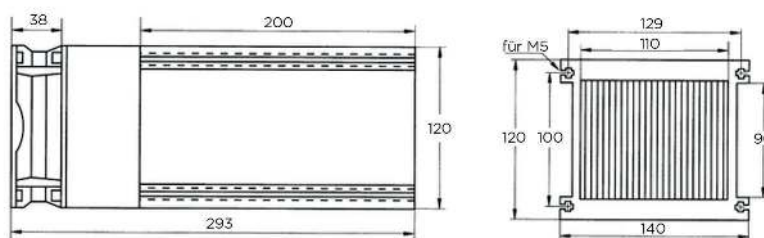
LK 20/200/A



Max. power loss: [W]: **400**

Min. thermal resistance: [K/W]: **0.068**

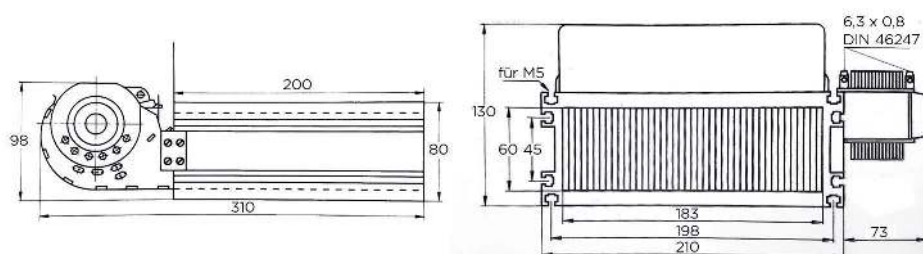
LK 30/200/A



Max. power loss: [W]: **400**

Min. thermal resistance: [K/W]: **0.073**

LK 40/200/Q



Max. power loss: [W]: **625**

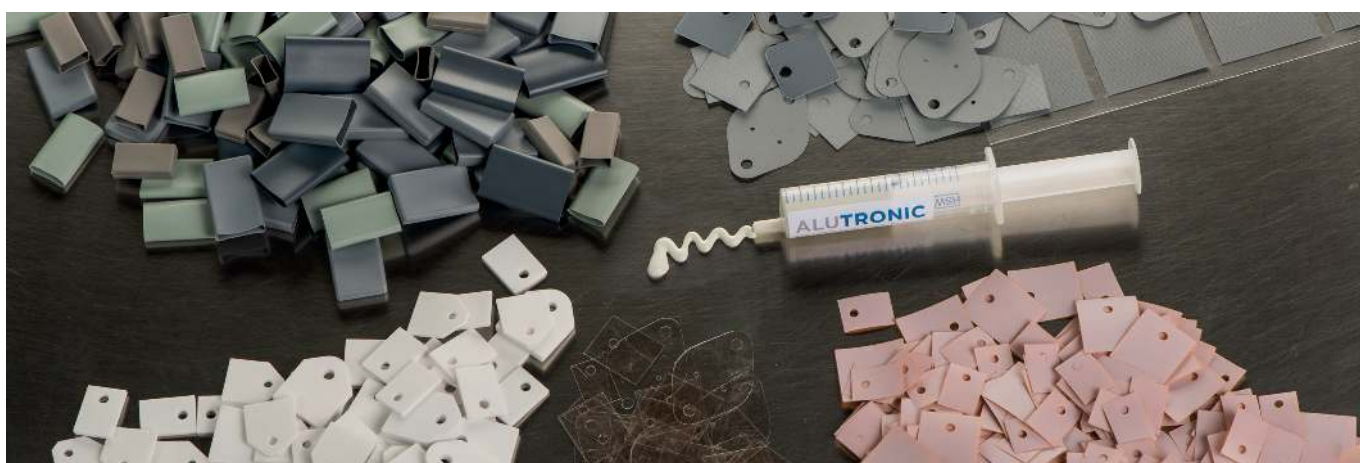
Min. thermal resistance: [K/W]: **0.044**



Our ERP system is programmed in-house and offers transparency and control- all the time!

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From a wide range of standard materials for improved heat conductivity and insulation of your semiconductor, choose the right connection between the heat-generating component and the heat sink.

For thermal interface materials you have a wide range of standard items and with Alutronic you always have the possibility and the competence for undertake customised adaptations.

Thus, e.g. foils can be cut to size on our cutting plotters, high-quality heat-conducting paste is filled in our filling system in containers of your choice, and ceramics are cut to size using laser equipment for your application.

If you are unable to find the solution you are looking for in this catalogue, please call us up.

We are constantly expanding our range of products, and you can also get the latest information by visiting our website at www.alutronic.de



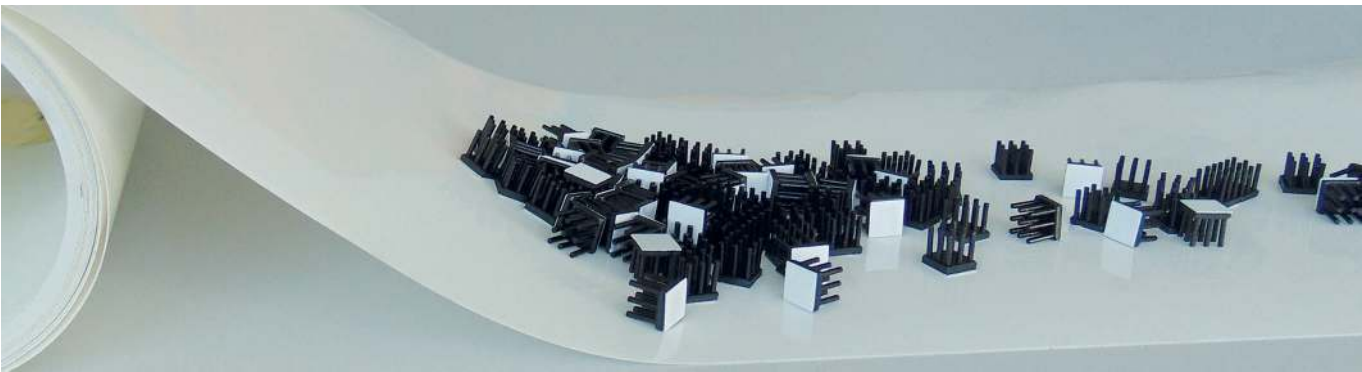
Insulating and heat-conducting materials are used for insulated assembly of components on heat sinks, and enable with their good heat-insulating material improved heat transfer from the component to the heat sink. Filling up air bubbles is optimally ensured by using heat-conducting foil. Compared to heat-conducting compounds, foils are easier in application. Foils adhesive on one side or both sides assist in fixing the heat sources.

You can choose from different foils in standard cut sizes as well as specially cut foils with appropriate dimensions / hole patterns. You can get them pre-fitted and assembled on your heat sinks.

Please refer to the following products for the technical specifications of our standard foils.

Basematerial S10,13-DS (both side adhesive)

Both sides adhesive thermal pad for securing components to heat sinks
For matching heat sinks see the chapter
POWERBLOCCS and **PCB MOUNTING - Adhesive heat sinks for single cooling**



Thermal Conductivity: [W/mK]: 0.8	Dielectric Strength: [KV]: 3,000	Reinforcement Carrier: fiberglas
Tensile Strength: [MPa]: 6	Temp. Resistant: [30 sec C°]: 200	Thermal Expansion: [ppm]: 325
Thickness: [mm]: 0.13	Temperature Range: [°C]: -30 bis 120	Flame Rating:
Expansion: [45% to Warp and Fill]: 70	Lap Shear at Room Temp.: [psi / MPa]: 0.7	

Sheet Material SIO,18 (not adhesive) and SI 0,18-S (one-side adhesive)

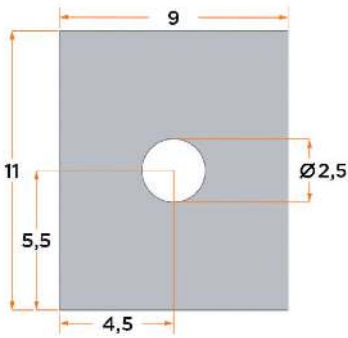

Thermal Conductivity: [W/mK]: 0.9	Dielectric Strength: [KV]: 3,500	Material: silicone with fiberglass
Reinforcement Carrier: fiberglass	Fracture strength: [kN/m]: 5	Tensile Strength: [MPa]: 20
Thickness: [mm]: 0.18	Temperature Range: [°C]: -60 bis 180	Flame Rating: V-O
Dielectric constant: [at 1 MHz]: 5.5	Expansion: [45% to Warp and Fill]: 54	Hardness: [ShoreA (Test ASTM D2240)]: 85

Sheet Material SIO,23 (not adhesive) and SI 0,23-S (one-side adhesive)


Thermal Conductivity: [W/mK]: 0.9	Dielectric Strength: [KV]: 4,500	Material: silicone with fiberglass
Reinforcement Carrier: fiberglass	Fracture strength: [kN/m]: 5	Tensile Strength: [MPa]: 20
Thickness: [mm]: 0.23	Temperature Range: [°C]: -60 bis 180	Flame Rating: V-O
Dielectric constant: [at 1 MHz]: 5.5	Expansion: [45% to Warp and Fill]: 54	Hardness: [ShoreA (Test ASTM D2240)]: 85

The following pages contain our selection of standard shapes, manufactured from the materials
SI 0.18 (non-adhesive) / SI 0.18-S (adhesive on one side)
SI 0.23 (non-adhesive) / SI 0.23-S (adhesive on one side)
for prevalent semiconductors as well as sheet material.
If the shape that you need is not included, application-specific drawing parts can be supplied on short notice and for small quantities.

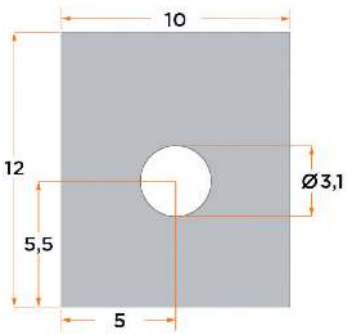
Sorted by shape of the semiconductor casing



Type	Material	Thick-ness	Thermal Conductivity	Dielectric Strength
SI 7001	SI0,18	0,18mm	0,9 W/mK	3500 (VAC)
SI 7001-S	SI0,18-S*			
SI 7011	SI0,23	0,23mm	0,9 W/mK	4500 (VAC)
SI 7011-S	SI0,23-S*			

* one side adhesive

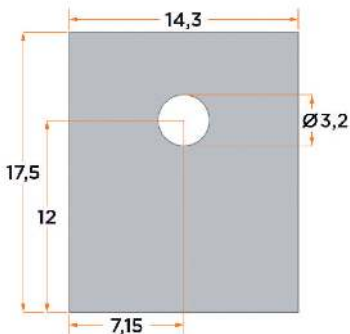
For Casing: **TO 220**



Type	Material	Thick-ness	Thermal Conductivity	Dielectric Strength
SI 7002	SI0,18	0,18mm	0,9 W/mK	3500 (VAC)
SI 7002-S	SI0,18-S*			
SI 7012	SI0,23	0,23mm	0,9 W/mK	4500 (VAC)
SI 7012-S	SI0,23-S*			

* one side adhesive

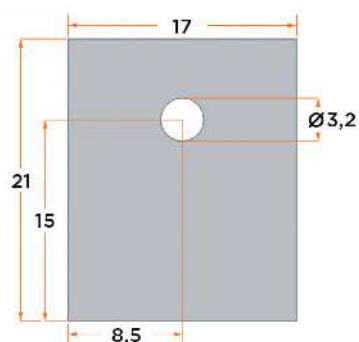
For Casing: **TO220**



Type	Material	Thick-ness	Thermal Conductivity	Dielectric Strength
SI 488	SI0,18	0,18mm	0,9 W/mK	3500 (VAC)
SI 488-S	SI0,18-S*			
SI 489	SI0,23	0,23mm	0,9 W/mK	4500 (VAC)
SI 489-S	SI0,23-S*			

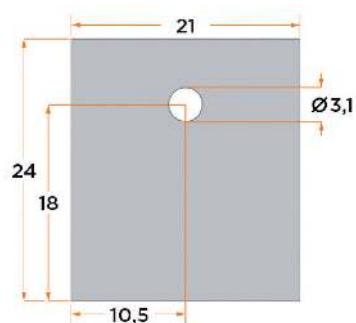
* one side adhesive

For Casing: **TO220**


 For Casing: **TO 220**

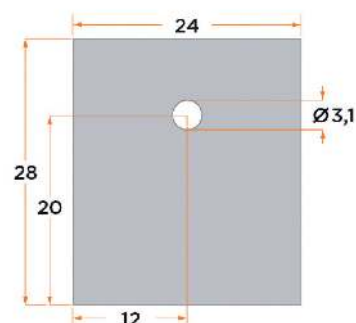
Type	Material	Thick-ness	Thermal Conductivity	Dielectric Strength
SI 7003	SI0,18	0,18mm	0,9 W/mK	3500 (VAC)
SI 7003-S	SI0,18-S*			
SI 7013	SI0,23	0,23mm	0,9 W/mK	4500 (VAC)
SI 7013-S	SI0,23-S*			

* one side adhesive


 For Casing: **TO 220**

Type	Material	Thick-ness	Thermal Conductivity	Dielectric Strength
SI 7004	SI0,18	0,18mm	0,9 W/mK	3500 (VAC)
SI 7004-S	SI0,18-S*			
SI 7014	SI0,23	0,23mm	0,9 W/mK	4500 (VAC)
SI 7014-S	SI0,23-S*			

* one side adhesive

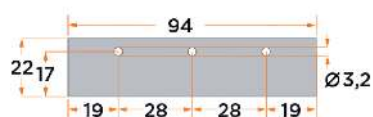

 For Casing: **TO 220**

Type	Material	Thick-ness	Thermal Conductivity	Dielectric Strength
SI 7005	SI0,18	0,18mm	0,9 W/mK	3500 (VAC)
SI 7005-S	SI0,18-S*			
SI 7015	SI0,23	0,23mm	0,9 W/mK	4500 (VAC)
SI 7015-S	SI0,23-S*			

* one side adhesive

for multiple mounting

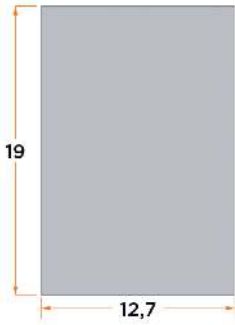
You can find compatible profile heat sinks in the section on heat sinks, PCB installation, multiple cooling



Type	Material	Thick-ness	Thermal Conductivity	Dielectric Strength
SI 7009	SI0,18	0,18mm	0,9 W/mK	3500 (VAC)
SI 7009-S	SI0,18-S*			
SI 7019	SI0,23	0,23mm	0,9 W/mK	4500 (VAC)
SI 7019-S	SI0,23-S*			

* one side adhesive

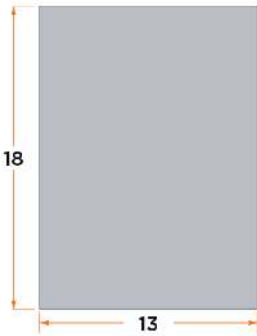
 For Casing: **TO 220**



Type	Material	Thick-ness	Thermal Conductivity	Dielectric Strength
SI 487	SI0,18	0,18mm	0,9 W/mK	3500 (VAC)
SI 487-S	SI0,18-S*			
SI 498	SI0,23	0,23mm	0,9 W/mK	4500 (VAC)
SI 498-S	SI0,23-S*			

* one side adhesive

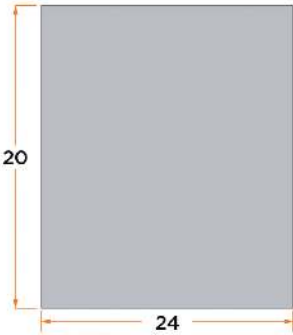
For Casing: **TO 220**



Type	Material	Thick-ness	Thermal Conductivity	Dielectric Strength
SI 7007	SI0,18	0,18mm	0,9 W/mK	3500 (VAC)
SI 7007-S	SI0,18-S*			
SI 7017	SI0,23	0,23mm	0,9 W/mK	4500 (VAC)
SI 7017-S	SI0,23-S*			

* one side adhesive

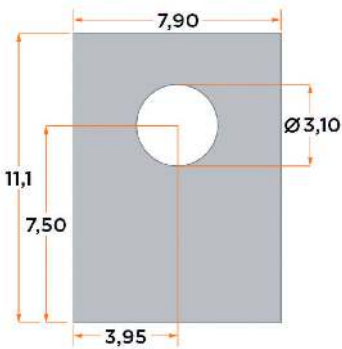
For Casing: **TO 220**



Type	Material	Thick-ness	Thermal Conductivity	Dielectric Strength
SI 7006	SI0,18	0,18mm	0,9 W/mK	3500 (VAC)
SI 7006-S	SI0,18-S*			
SI 7016	SI0,23	0,23mm	0,9 W/mK	4500 (VAC)
SI 7016-S	SI0,23-S*			

* one side adhesive

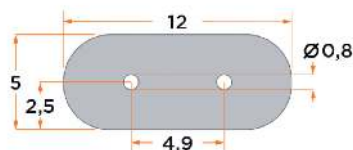
For Casing: **TO 220**



Type	Material	Thick-ness	Thermal Conductivity	Dielectric Strength
SI 485	SI0,18	0,18mm	0,9 W/mK	3500 (VAC)
SI 485-S	SI0,18-S*			
SI 483	SI0,23	0,23mm	0,9 W/mK	4500 (VAC)
SI 483-S	SI0,23-S*			

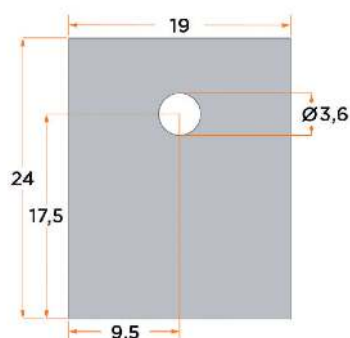
* one side adhesive

For Casing: **SOT 32**



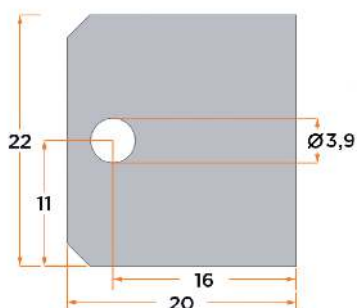
Type	Material	Thick-ness	Thermal Conductivity	Dielectric Strength
SI 497	SI0,18	0,18mm	0,9 W/mK	3500 (VAC)
SI 497-S	SI0,18-S*			
SI 499	SI0,23	0,23mm	0,9 W/mK	4500 (VAC)
SI 499-S	SI0,23-S*			

* one side adhesive

For Casing: **Quartz**

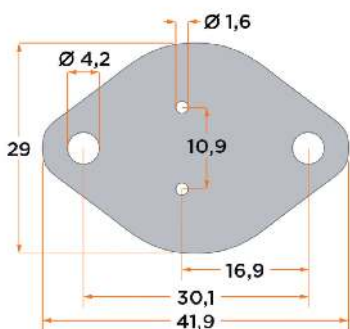
Type	Material	Thick-ness	Thermal Conductivity	Dielectric Strength
SI 490	SI0,18	0,18mm	0,9 W/mK	3500 (VAC)
SI 490-S	SI0,18-S*			
SI 495	SI0,23	0,23mm	0,9 W/mK	4500 (VAC)
SI 495-S	SI0,23-S*			

* one side adhesive

For Casing: **TOP 3 (TO 218)**

Type	Material	Thick-ness	Thermal Conductivity	Dielectric Strength
SI 492	SI0,18	0,18mm	0,9 W/mK	3500 (VAC)
SI 492-S	SI0,18-S*			
SI 493	SI0,23	0,23mm	0,9 W/mK	4500 (VAC)
SI 493-S	SI0,23-S*			

* one side adhesive

For Casing: **Multiwatt**

Type	Material	Thick-ness	Thermal Conductivity	Dielectric Strength
SI 480	SI0,18	0,18mm	0,9 W/mK	3500 (VAC)
SI 480-S	SI0,18-S*			
SI 482	SI0,23	0,23mm	0,9 W/mK	4500 (VAC)
SI 482-S	SI0,23-S*			

* one side adhesive

For Casing: **TO 3**

for multiple mounting

You can find compatible profile heat sinks in the section on Heat Sink PCB mounting / For Multiple Devices



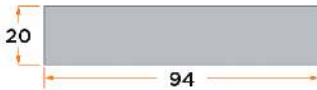
Type	Material	Thick-ness	Thermal Conductivity	Dielectric Strength
SI 7008	SI0,18	0,18mm	0,9 W/mK	3500 (VAC)
SI 7008-S	SI0,18-S*			
SI 7018	SI0,23	0,23mm	0,9 W/mK	4500 (VAC)
SI 7018-S	SI0,23-S*			

* one side adhesive

For Casing: **TO 220**

for multiple mounting

You can find compatible profile heat sinks in the section on Heat Sink PCB mounting / For Multiple Devices



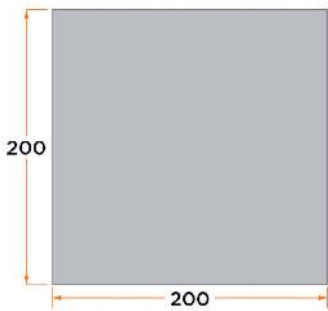
Type	Material	Thick-ness	Thermal Conductivity	Dielectric Strength
SI 6018	SI0,18	0,18mm	0,9 W/mK	3500 (VAC)
SI 6018-S	SI0,18-S*			
SI 6023	SI0,23	0,23mm	0,9 W/mK	4500 (VAC)
SI 6023-S	SI0,23-S*			

* one side adhesive

For Casing: **TO 220**

Sheet material

for self cutting



Type	Material	Thick-ness	Thermal Conductivity	Dielectric Strength
SI 4018	SI0,18	0,18mm	0,9 W/mK	3500 (VAC)
SI 4018-S	SI0,18-S*			
SI 4023	SI0,23	0,23mm	0,9 W/mK	4500 (VAC)
SI 4023-S	SI0,23-S*			

* one side adhesive

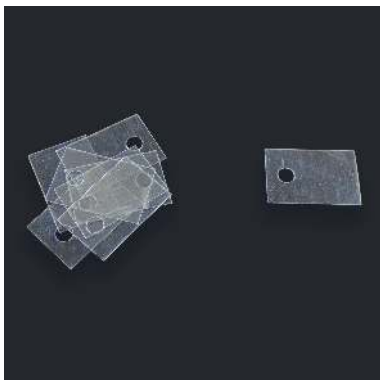


Mica panels are used in conjunction with insulating bushings for insulated assembly of semiconductors, e.g. on heat sinks.

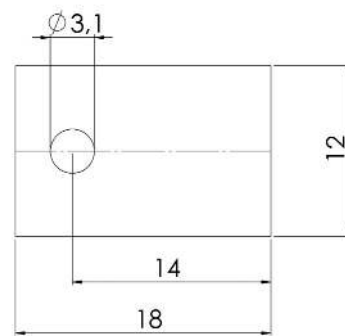
To avoid poorly conducting air bubbles, it is recommended to use heat-conducting paste or heat-conducting foils.

General technical values: Colour: colourless, transparent
 Thickness: 0.05 mm
 Thickness tolerance: + 0.01 / - 0.02 mm
 Resistance to heat: + 550°C
 Dielectric strength: approx. 2.5 kV

GL 530

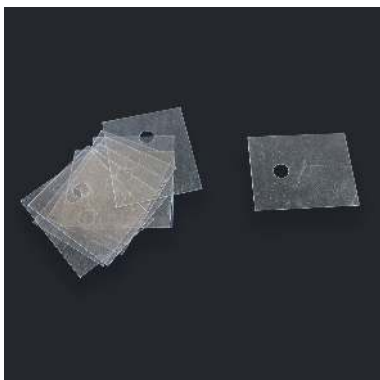


For Casing: **TO 220**

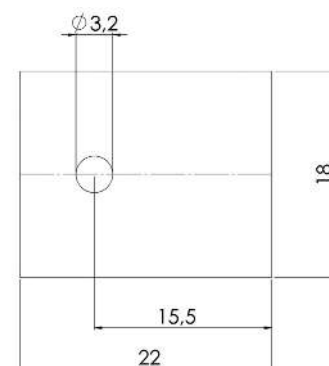


Rth: [K/W]: **1.25**

GL 535/N

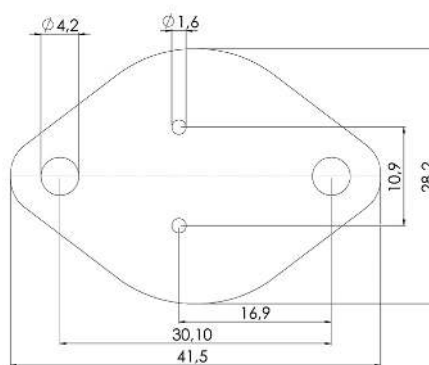


For Casing: **TOP 3 (TO218)**



Rth: [K/W]: **0.8**

GL 510

For Casing: **TO 3**Rth: [K/W]: **0.3**

Alutronic runs on 100%
CO² neutral hydropower!

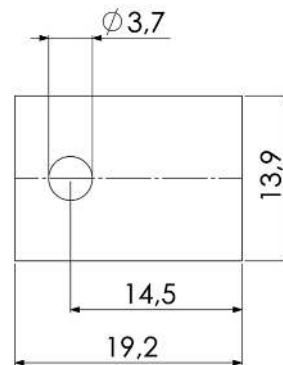


Aluminium oxide slices are used for insulated assembly of semiconductors for high voltage ranges. Despite the high dielectric strength, good heat transfer, from the semiconductor to the heat sink is available.

General values: Colour: white
 Dielectric strength: approx. 10 KV / mm
 Dielectric loss factor at 1 MHz: 10^{-4}
 Dielectric constant at 1 MHz: 9.1
 Specific resistance: 10^4 Ohm x cm
 Density: 3.9 gm^3 purity 96 %
 R_{th} (TO3): approx. 0.5 K / W

The following pages contain standard sections for prevalent semiconductor shapes. We are be pleased to cut customised aluminium oxide slices for you based on your drawing.

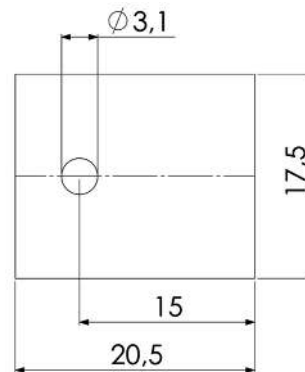
AO 475



For Casing: **TO 220**

Thermal Conductivity: [W/mK]: **25** Thickness: [mm]: **1.6**

AO 472

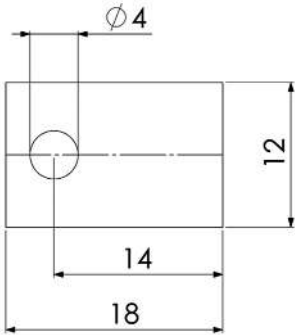


For Casing: **TO 218, TOP 3**

Thermal Conductivity: [W/mK]: **25** Thickness: [mm]: **1.6**

Alutronic in Short
Customised
Extrusions
Standard
Extrusions
Heat Sink PCB
Mounting
Powerbloccs
Heat Sink Sys-
tems
Insulation + Heat
Conduction
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Index

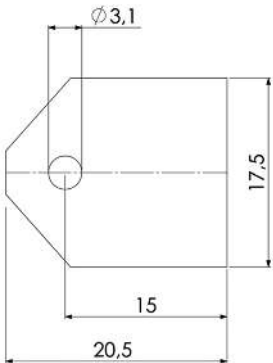
AO 479



For Casing: **TO 220**

Thermal Conductivity: [W/mK]: **25** Thickness: [mm]: **1.5**

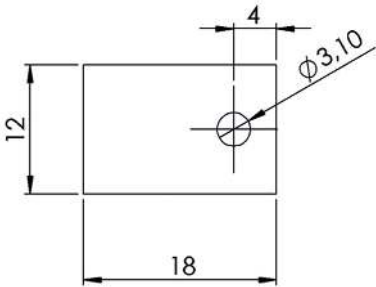
AO 471



For Casing: **TO 218, TOP 3**

Thermal Conductivity: [W/mK]: **25** Thickness: [mm]: **1.5**

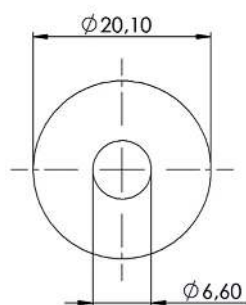
AO 474



For Casing: **TO 220**

Thermal Conductivity: [W/mK]: **25** Thickness: [mm]: **1.5**

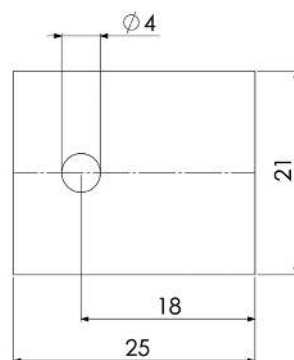
AO 478



For Casing: **DO 5 (Diode)**

Thermal Conductivity: [W/mK]: **25** Thickness: [mm]: **1.6**

AO 480



For Casing: **TO 218, TOP 3**

Thermal Conductivity: [W/mK]: **25** Thickness: [mm]: **3**

Alutronic in Short

Customised
Extrusions

Standard
Extrusions

Heat Sink PCB
Mounting

Powerblobs

Heat Sink Sys-
tems

Insulation + Heat
Conduction

Mounting

Information

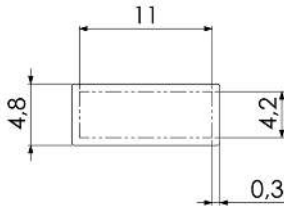
Index



Insulating caps and insulating hoses made from high quality silicone rubber simplify the insulated structure of semiconductors on heat sinks, especially with clip assembly.

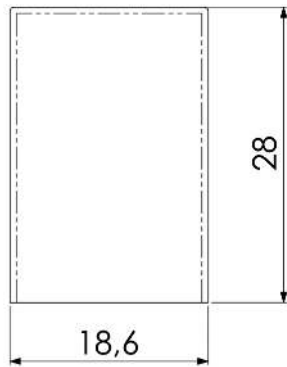
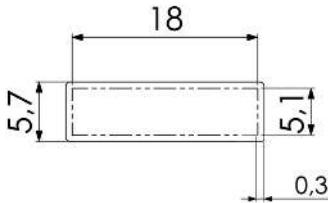
General technical values:	Colour:	Grey
	Dielectric strength:	10 KV
	Dielectric constant at 10 ⁴ MHz:	4.4 KV
	Temperature range:	- 60/+180°C
	Hardness:	75 Shore A
	Expansion	100 %
	R _{th} :	1.48 K/W

IK 550



For Casing: **TO 220**

IK 553



For Casing: **TO 218, TOP 3**

IL 555/25



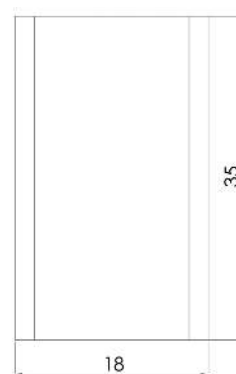
For Casing: **TO 220**

IL 555/30



For Casing: **TO 220**

IL 557/35



For Casing: **TO 218, TOP 3**

Alutronic in Short

Customised
Extrusions

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Extrusions

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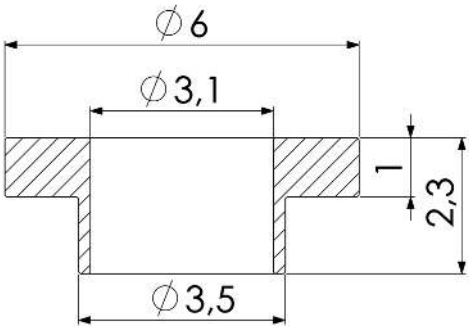


Insulating bushes are used in conjunction with insulating washers made of silicone or mica for insulated screw assembly of semiconductors, e.g. on heat sinks.

Material: Makrolon (Heat resistance 130 C°)
SR25 (Heat resistance 200 C°)

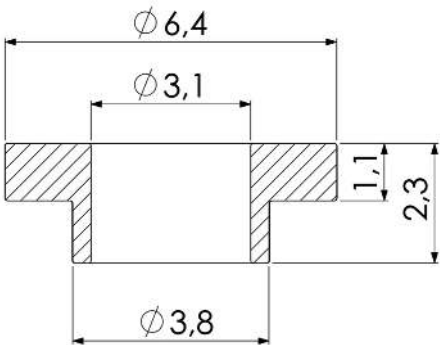
flammability according to UL 94 VO

IS 560 + IS 561



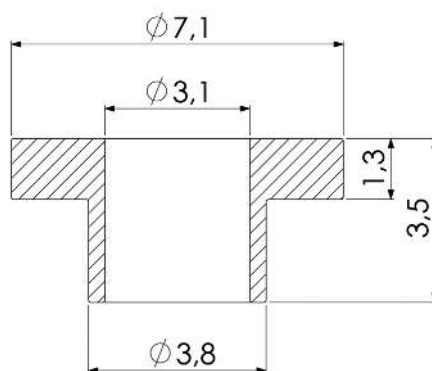
article	For Casing	Dielectric Strength [KV]	Material	Colour
IS 560	TO220, TO218 (TOP3), Multiwatt	30	Macrolon	White
IS 561	TO220, TO218 (TOP3), Multiwatt	16	SR25	Black

IS 565



For Casing: **TO220, TO218 (TOP3), Multiwatt** Dielectric Strength: [KV]: **30** Material: **Macrolon**

IS 570

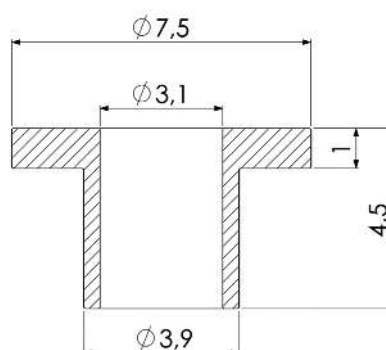


For Casing: **TO220, TO218 (TOP3), Multiwatt**

Dielectric Strength: [KV]: **30**

Material: **Macrolon**

IS 580

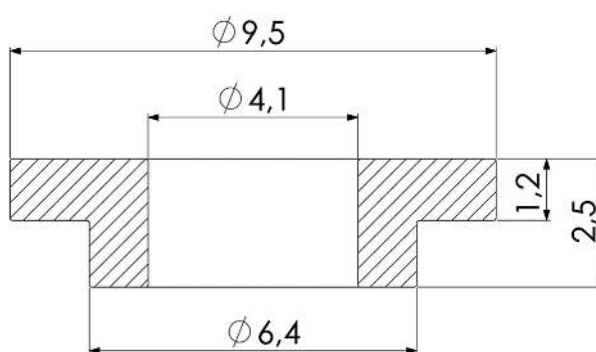


For Casing: **TO 3**

Dielectric Strength: [KV]: **30**

Material: **Macrolon**

IS 585



For Casing: **Dioden**

Dielectric Strength: [KV]: **30**

Material: **Macrolon**

PA 700 - with silicon PA 701 - siliconfree

Thermally conducting compounds fill up air gaps caused by surface roughness and ensures the best possible thermal transfer of semiconductors heat sinks.

For an area of 100x100 mm (non-machined extruded profile) approx. 0.4 gm of thermally conducting paste is needed, and this should be applied as a thin film.

PA701 is used primarily when systems must be kept absolutely free from silicone.



PA 800 - Silikonfrei

(Arctic Silver)

PA 800 is a high-performance heat-conducting compound and is suitable for all applications.

With its three unique phases and sizes of the silver particles (99.9% pure silver) a new form of the particle-to-particle contact and thermal conductivity is achieved.

The poly-synthetic base material made of zinc oxide, aluminium oxide and boron nitride, in the process, improve the performance and the long-term stability.

The ideal pasty consistency of the PA800 heat-conducting paste ensures ease of handling and better distribution on the medium.

The paste is not electrically conducting and free from silicones.



		PA 700	PA 701	PA 800
Thermal conductivity	[W/mK]	0,8	0,5	9,0
Service Temperature	[°C]	-40 to +180	-40 to +150	-50 to +180
		contain silicon	silicone free	silicone free
Packaging	Syringe	10g / 20g / 50g / 100g	10g / 20g / 50g / 100g	3,5g / 12g
	Canister	250g / 500g	250g / 500g	

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Distance Bolts Internal / External - Thread.....	148
Distance Bolts External / External - Thread.....	155
Distance Sleeves.....	162
Heat Conductive Adhesive.....	163



From more than 300 different standard types of fixing for assembly of the heat sink and for assembly of your components, you can find economical solutions here.

Spacer bolts, clips and heat-conducting adhesives for fixing semiconductors offer you secure and simple means of fixing assemblies.

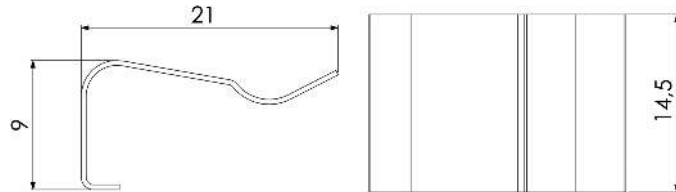
If you are unable to find the solution you are looking for in this catalogue, please call us up.

We are constantly expanding our range of products, and you can also get the latest information by visiting our website at www.alutronic.de

Alutronic mounting clips are particularly beneficial if you are fixing electronic components on heat sinks in constrained installation situations. Another significant benefit is the shorter installation time compared to screw assembly and the uniform, central contact pressure of the semiconductor on the heat sink. This ensures optimal heat transfer as a result of which local temperature differences can be reduced in the semiconductor. Unequal distribution of force by the centrally applied force of the screw connection is avoided, as a result of which stresses in the semiconductor housing are minimised.

MC 797

Fits to all Alutronic heat sink with clip groove.



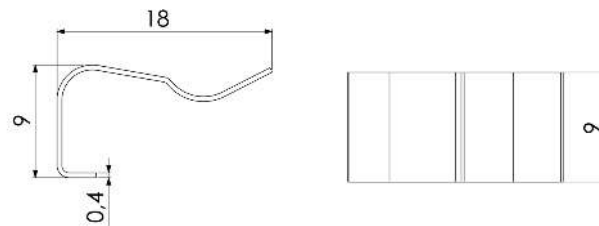
For Casing: **TO 218, TOP 3**

Material: **Spring steel**

Surface: **burnished**

MC 725

Fits to all Alutronic heat sink with clip groove.



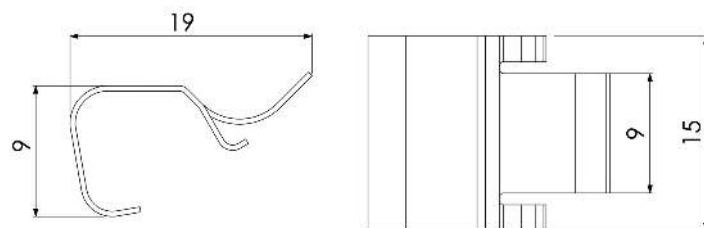
For Casing: **TO 220**

Material: **Spring steel**

Surface: **burnished**

MC 726

Fits to all Alutronic heat sink with clip groove.



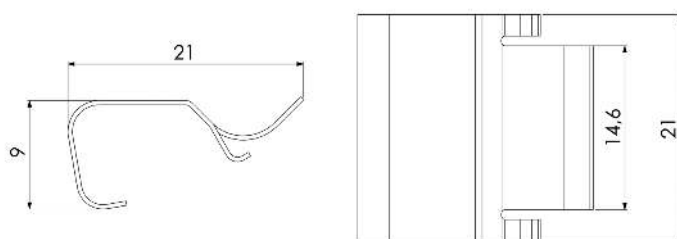
For Casing: **TO 220**

Material: **Spring steel**

Surface: **burnished**

MC 773

Fits to all Alutronic heat sink with clip groove.



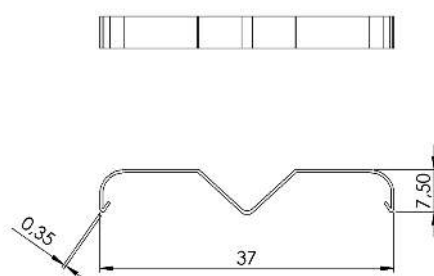
For Casing: **TO 218, TOP 3**

Material: **Spring steel**

Surface: **burnished**

MC 28

Mounting Clip for heat sink PR 28

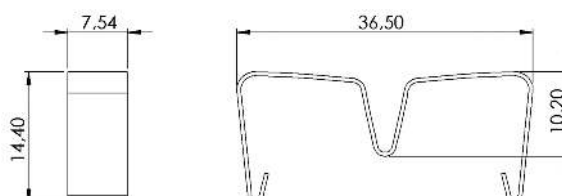


Material: **Spring steel**

Surface: **burnished**

MC 31

Mounting Clip for heat sink PR 31

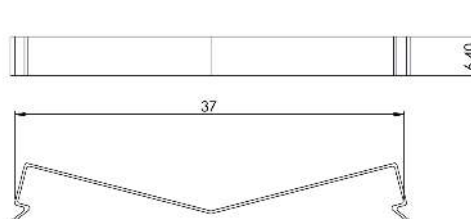


Material: **Spring steel**

Surface: **galvanized**

MC 32

Mounting Clip for heat sink PR 32

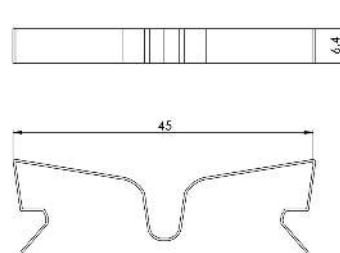


Material: **Spring steel**

Surface: **burnished**

MC 33

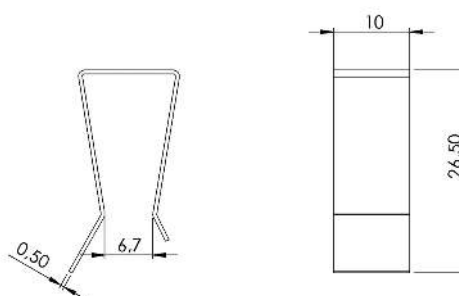
Mounting Clip for heatsink PR 33



Material: **Spring steel**

Surface: **burnished**

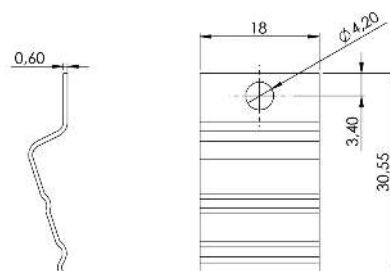
MC 740



Material: **Spring steel**

Surface: **galvanized**

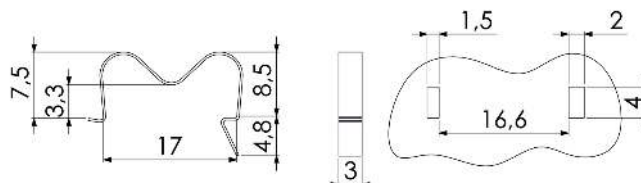
MC 747



Material: **Stainless steel**

Surface: **Blank**

MC 780

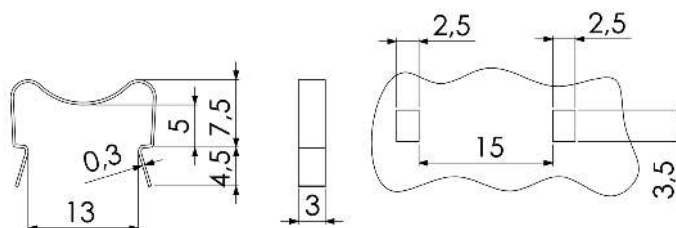


For Casing: **TO 220**

Material: **Stainless steel**

Surface: **Blank**

MC 782

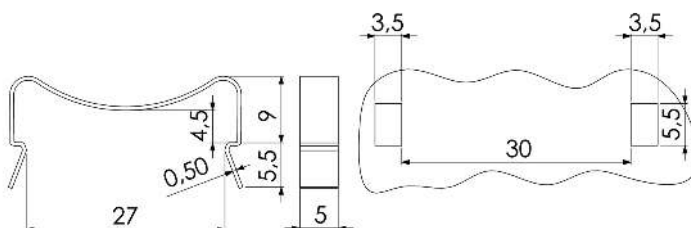


For Casing: **TO 220**

Material: **Stainless steel**

Surface: **Blank**

MC 786

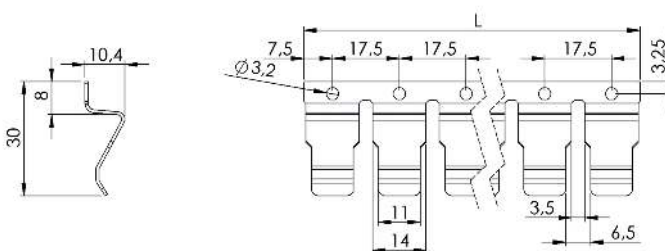


For Casing: **TO 218, TOP 3**

Material: **Stainless steel**

Surface: **Blank**

MCU



For Casing: **TO 218, TO 220, TO 247, TO 264, TO 264, SOT 32, SIP Multi-watt**

Material: **Stainless steel**

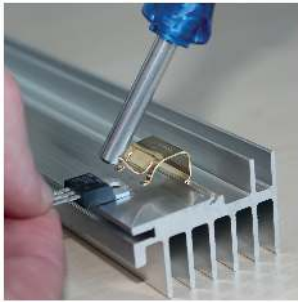
Surface:

article	Clip length (L) [mm]	Number of clips
MC U1	15	1
MC U2	32.5	2
MC U3	50	3
MC U4	67.5	4
MC U5	85	5
MC U6	102.5	6
MC U7	120	7
MC U8	137.5	8
MC U9	155	9
MC U10	172.5	10

Multi-Tool *Clips*

Practical tool for installation of clips from Alutronic

The Alutronic clip tool is suitable for all Alutronic mounting clips of type MC725, MC726, MC773 and MC797. Just like a screwdriver, you can hold the tool comfortably in your hand.

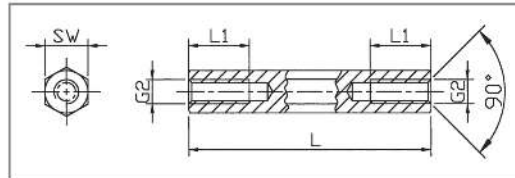


Alutronic in Short
Customised Extrusions
Standard Extrusions
Heat Sink PCB Mounting
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BRASS, METRIC THREAD

Spacer bolts

Type	hexagonal
Styles	internal / internal
Material	Brass 2.0401
Surface	nickel plated (G3E)



Thread lengths [mm]

L	L1 bei M2	L1 bei M2,5 bis M8
5	5	5
6	6	6
8	8	8
10	10	10
12	6	12
15	6	15
18	6	9
from 20	6	10

Minimum tensile strength: 430 N/mm²
 Tolerance for length dimensions: +/- 0,1 mm

Lengths [mm]

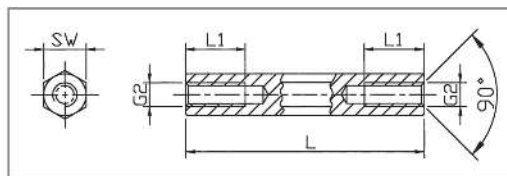
Order No.	SW (hexagonal)	Thread	05	06	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 656	SW 4	M2	05	06	08	10	12	15	18	20	25	30	35	40	45	50										
DI 662	SW 4	M2,5	05	06	08	10	12	15	18	20	25	30	35	40	45	50										
DI 648	SW 5	M2,5	05	06	08	10	12	15	18	20	25	30	35	40	45	50	55	60								
DI 650	SW 5	M3	05	06	08	10	12	15	18	20	25	30	35	40	45	50	55	60								
DI 652	SW 5,5	M3	05	06	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70						
DI 425	SW 6	M3	05		08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 651	SW 7	M4	05	06	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 664	SW 8	M5			08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 663	SW 10	M6				10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 426	SW 13	M8						15		20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100

Ordering example: DI 656/18

STEEL, METRIC THREAD

Spacer bolts

Type	hexagonal
Styles	internal / internal
Material	Steel 1.0718
Surface	zinc plated (A3F) (optional also blank)



Internal thread lengths [mm]

L	L1 bel M2	L1 at M2,5 to M5	L1 bel M6	L1 bel M8
5	5	5	5	
8	8	8	8	
10	10	10	10	
12	6	12	12	
15	6	15	15	15
18	6	9	9	
20	6	10	10	20
from 30	6	10	12	14

Minimum tensile strength: 500 N/mm²
 Tolerance for length dimensions: +/- 0,1 mm
 (applies to SW 13 : DIN 2768-m)

Lengths [mm]

Order No.	SW (hexagonal)	Thread	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 619	SW 4	M2	05	08	10	12	15	18	20	25	30	35	40												
DI 602	SW 4	M2,5	05	08	10	12	15	18	20	25	30	35	40												
DI 613	SW 5	M2,5	05	08	10	12	15	18	20	25	30	35	40	45	50										
DI 612	SW 5	M3	05	08	10	12	15	18	20	25	30	35	40	45	50										
DI 642	SW 5,5	M3	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70						
DI 640	SW 6	M3	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 668	SW 7	M4	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 641	SW 8	M4	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 646	SW 8	M5		08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 657	SW 10	M6			10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 427	SW 13	M8					15		20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100

Ordering example: DI 619/12

STAINLESS STEEL, METRIC THREAD

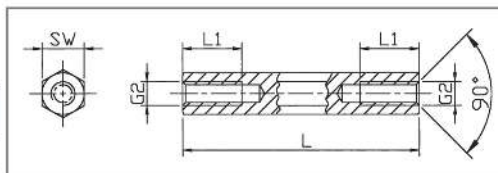
Spacer bolts

Type hexagonal
Styles internal / internal
Material Stainless steel 1.4305



Internal thread lengths [mm]

L	M2.5+M3	M4	M5	M6	M8
5	5	5			
8	8	8	8		
10	10	10	10	10	
12	12	12	12	12	
15	7	15	15	15	15
18	7	9	9	9	18
20	7	9	10	10	20
25	7	9	10	12	12
from 30	7	9	10	12	14



Minimum tensile strength: 750 N/mm²
 Tolerance for length dimensions: +/- 0,1 mm
 (applies to SW 13 : DIN 2768-m)

Lengths [mm]

Order No.	SW (hexagonal)	Thread	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 428	SW 5	M2,5	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60								
DI 670	SW 5,5	M3	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70						
DI 671	SW 7	M4	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 672	SW 8	M5		08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 673	SW 10	M6			10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 429	SW 13	M8					15		20	25	30	35	40	45	50		60		70		80		90		100

Ordering example: DI 672/20

ALUMINIUM, METRIC THREAD

Spacer bolts

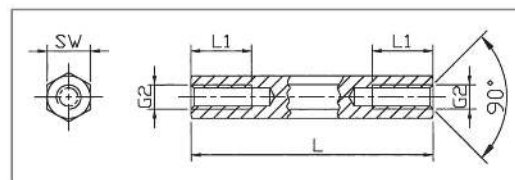
Type hexagonal
Styles internal / internal
Material Aluminium 3.1655



Internal thread lengths [L1 in mm]

L	M2.5+M3	M4	M5	M6	M8
5	5	5			
8	8	8	8		
10	10	10	10	10	
12	12	12	12	12	
15	7	15	15	15	15
18	7	9	9	9	18
20	7	9	10	10	20
25	7	9	10	12	12
from 30	7	9	10	12	14

Minimum tensile strength: 310 N/mm²
 Tolerance for length dimensions: +/- 0,1 mm
 (applies to SW 13 : DIN 2768-m)



Lengths [mm]

Order No.	SW (hexagonal)	Thread	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 500	SW 5	M2,5	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60								
DI 513	SW 5,5	M3	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70						
DI 504	SW 6	M3	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70						
DI 505	SW 7	M4	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 511	SW 8	M5		08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 501	SW 10	M6			10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 512	SW 13	M8					15		20	25	30	35	40	45	50		60		70		80		90		100

Ordering example: DI 500/12

POLYAMIDE, BRASS THREAD

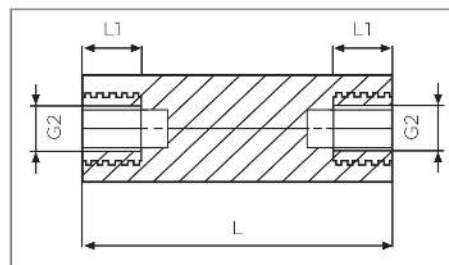
Spacer bolts

Type	hexagonal
Styles	internal / internal
Material	Body: Polyamide 6.6 Thread: Brass, nickel plated
Flammability Rating	V2
Colour	white

Contact resistance: 10^{12} Ohm/cm
 Dielectric strength: 50 kV/mm
 Tolerance for length dimensions: $\pm 0,1$ mm

Order No.	SW (hexagonal)	Thread	Lengths (L) in mm increments
DI 678	SW 6	M2,5	15-65
DI 679	SW 6	M3	15-65
DI 680	SW 8	M4	15-65
DI 681	SW 10	M5	15-70

Note: The pull-out strength and torques may vary depending on application and ambient influences (e.g. temperature, air humidity, etc.). for critical applications please carry out trials. Alutronic does not assume any liability for the specified strength values.



Strength / resistance values

Thread lengths [mm]		Torques [Nm]			Pull-out torques [N]		
G1=G2	L1	SW6	M2,5	1,3	SW6	M2,5	300
M2,5	6	SW6	M3	1,3	SW6	M3	300
M3	6	SW8	M4	3,0	SW8	M4	600
M4	6	SW10	M5	4,5	SW10	M5	800
M5	6						

POLYAMIDE, BRASS THREAD

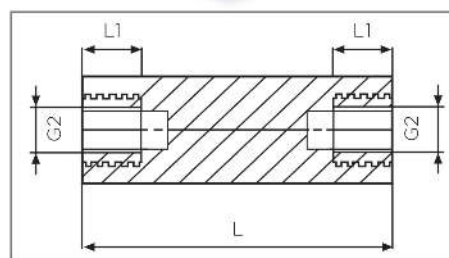
Spacer bolts

Type	hexagonal
Styles	internal / internal
Material	Body: Polyamide 6.6 Thread: Brass, blank
Flammability Rating	V2
Colour	natural

Contact resistance: 10^{12} Ohm/cm
 Dielectric strength: 50 kV/mm
 Tolerance for length dimensions: $\pm 0,1$ mm

Order No.	SW (hexagonal)	Thread	Lengths (L) in mm increments
DI 581	SW 13	M6	25-100
DI 582	SW 15	M8	25-100

Note: The pull-out strength and torques may vary depending on application and ambient influences (e.g. temperature, air humidity, etc.). for critical applications please carry out trials. Alutronic does not assume any liability for the specified strength values.



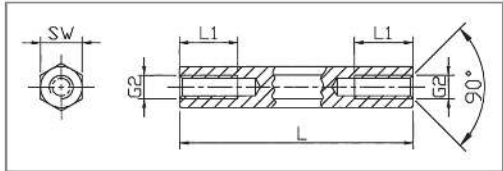
Strength / resistance values

Thread lengths [mm]		Torques [Nm]			Pull-out torques [N]		
G1=G2	L1	SW13	M6	12,0	SW13	M6	1000
M6	11	SW15	M8	18,0	SW15	M8	1600
M8	11						

POLYAMIDE, METRIC THREAD

Spacer bolts

Type	hexagonal
Styles	internal / internal
Material	Polyamid 6.0 GV
Flammability Rating	HB
Colour	black



Thread G2	L (mm)	L1 (mm)
M2/M2,5	to 14	Dead-end thread
	15-20	half length
	from 21	10
M3	to 15	Dead-end thread
	16-20	half length
	from 21	10
M4/M5/M6	to 20	Dead-end thread
	from 21	10

Contact resistance DIN 53 482:	$>10^{12}$ Ohm/cm
Dielectric strength DIN 54 481:	40 kV/mm
Tolerance for length dimensions:	+/- 0,1 mm

Order No.	SW (hexagonal)	Thread	Standard lengths in mm-increments
DI 635	SW 5	M2	von 5 mm bis 45 mm
DI 637	SW 5	M2,5	von 4 mm bis 55 mm
DI 636	SW 6	M3	von 5 mm bis 65 mm
DI 639	SW 8	M4	von 5 mm bis 68 mm
DI 632	SW 10	M5	von 5 mm bis 65 mm
DI 633	SW 10	M6	von 4 mm bis 65 mm

Ordering example: DI 635/11

BRASS, SELF-TAPPING THREAD

Spacer bolts

Type hexagonal
Styles internal / external with undercut

Material Brass 2.0401
Surface nickel plated (G3E)

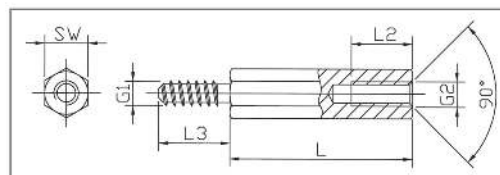


External thread G1 [mm]

Thread size	I3	d1	d2
ST2,2	5	2,1	1,6
ST2,9	6	2,8	2,1
ST3,3	6	3,2	2,3
ST3,5	7	3,4	2,6
ST4,2	8	4,1	3,0
ST4,8	8	4,7	3,5
ST6,3	10	6,1	4,8

Internal thread G2 [mm]

L (mm)	I2 (mm)
8	5
10	6
12	7
15	10
20	10



Styles DIA / internal / external

Tolerance for length dimensions: $\pm 0,1$ mm

Standard lengths [mm]

Order No.	SW (mm)	Thread size G1	Thread size G2	08	10	12	15	20
DI 520	5	ST2,2	M2,5	08	10	12	15	20
DI 531	5,5	ST2,9	M3	08	10	12	15	20
DI 521	5,5	ST3,3	M3	08	10	12	15	20
DI 538	6	ST3,5	M3	08	10	12	15	20
DI 539	7	ST4,2	M4	08	10	12	15	20
DI 532	8	ST4,8	M5	08	10	12	15	20
DI 533	10	ST6,3	M6		10	12	15	20

Ordering example: DI 520/15

BRASS, METRIC THREAD

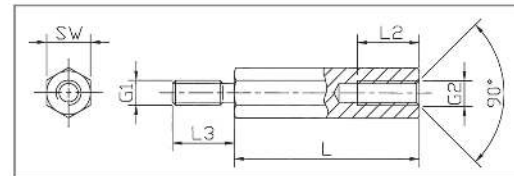
Spacer bolts

Type hexagonal
Styles internal / external
 with undercut

Material Brass 2.0401
Surface nickel plated (G3E)



(Illustration: Brass blank, optional bl.)



Internal thread lengths [mm]

L	L2 bei M2	L2 at M2,5 to M5	L2 at M6
5	3	3	
6	4	4	
8	5	5	
10	6	6	6
12	6	7	7
15	6	10	10
18	6	10	10
from 20	6	10	12

External thread lengths [mm]

G1=G2	L3
M2	5
M2,5	6
M3	6+8
M4	8
M5	8
M6	10

Minimum tensile strength: 430 N/mm²
 Tolerance for length dimensions: +/- 0,1 mm

Lengths [mm]

Order No.	SW (hexagonal)	Thread	05	06	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 658	SW 4	M2	05	06	08	10	12	15	18	20	25	30	35	40	45	50										
DI 667	SW 4	M2,5	05	06	08	10	12	15	18	20	25	30	35	40	45	50										
DI 649	SW 5	M2,5	05	06	08	10	12	15	18	20	25	30	35	40	45	50	55	60								
DI 653	SW 5	M3	05	06	08	10	12	15	18	20	25	30	35	40	45	50	55	60								
DI 655	SW 5,5	M3	05	06	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70						
DI 430	SW 6	M3	05	06	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 654	SW 7	M4	05	06	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 665	SW 8	M5			08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 431	SW 10	M6				10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 992	SW 13	M8						15		20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100

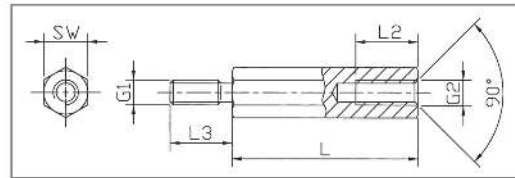
Ordering example: DI 658/10

STEEL, METRIC THREAD

Spacer bolts

Type hexagonal
Styles internal / external
 with undercut

Material Steel 1.0718
Surface zinc plated (A3F)



Internal thread lengths [mm]

L	L2 at M2	L2 at M2,5 to M5	L2 at M6	L2 at M8
5	3	3		
8	5	5		
10	6	6	6	
12	6	7	7	
15	6	10	10	10
18	6	10	10	
from 20	6	10	12	14

External thread lengths [mm]

G1=G2	L3
M2	5
M2,5	6
M3	6
M4	8
M5	8
M6	10
M8	14

Minimum tensile strength: 500 N/mm²
 Tolerance for length dimensions: +/- 0,1 mm
 (applies to SW 13 : DIN 2768-m)

Lengths [mm]

Order No.	SW (hexagonal)	Thread	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 432	SW 4	M2	05	08	10	12	15	18	20	25	30	35	40												
DI 433	SW 4	M2,5	05	08	10	12	15	18	20	25	30	35	40												
DI 434	SW 5	M2,5	05	08	10	12	15	18	20	25	30	35	40	45	50										
DI 701	SW 5	M3	05	08	10	12	15	18	20	25	30	35	40	45	50										
DI 645	SW 5,5	M3	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70						
DI 643	SW 6	M3	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 669	SW 7	M4	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 644	SW 8	M4	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 647	SW 8	M5		08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 659	SW 10	M6			10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 435	SW 13	M8					15		20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100

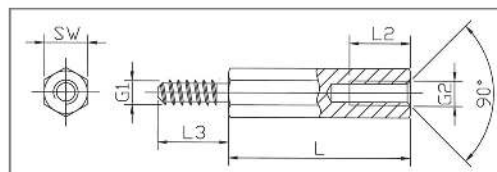
Ordering example: DI 679/30


STEEL, SELF-TAPPING THREAD

Spacer bolts

Type hexagonal
Styles internal / external with undercut

Material Steel 1.0718
Surface zinc plated (A3F)



External thread G1 [mm]

Thread size	I3	d1	d2
ST2,2	5	2,1	1,6
ST2,9	6	2,8	2,1
ST3,3	6	3,2	2,3
ST3,5	7	3,4	2,6
ST4,2	8	4,1	3,0
ST4,8	8	4,7	3,5
ST6,3	10	6,1	4,8

Internal thread G2 [mm]

L (mm)	I2 (mm)
8	5
10	6
12	7
15	10
20	10

Tolerance for length dimensions: $\pm 0,1$ mm

Standard lengths [mm]

Order No.	SW (mm)	Thread size G1	Thread size G2	08	10	12	15	20
DI 691	5	ST2,2	M2,5	08	10	12	15	20
DI 692	5,5	ST2,9	M3	08	10	12	15	20
DI 690	5,5	ST3,3	M3	08	10	12	15	20
DI 693	6	ST3,5	M3	08	10	12	15	20
DI 694	7	ST4,2	M4	08	10	12	15	20
DI 695	8	ST4,8	M5	08	10	12	15	20
DI 696	10	ST6,3	M6		10	12	15	20

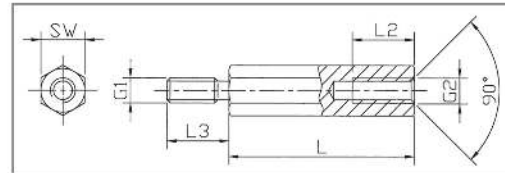
Ordering example: DI 691/15

STAINLESS STEEL, METRIC THREAD

Spacer bolts

Type hexagonal
Styles internal / external
 with undercut

Material Stainless steel 1.4305



Internal thread lengths [L2 in mm]

L	M2.5+M3	M4	M5	M6	M8
5	2,5				
8	5	5			
10	6	6	6	5	
12	7	8	8	7	
15	7	9	10	10	10
18	7	9	10	12	12
from 20	7	9	10	12	14

External thread lengths [L3 in mm]

G1=G2	L3
M3	6
M4	8
M5	8
M6	10
M8	14

Minimum tensile strength: 750 N/mm²
 Tolerance for lenght dimensions: +/- 0,1 mm
 (applies to SW 13 : DIN 2768-m)

Lengths [mm]

Order No.	SW (hexagonal)	Thread	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 540	SW 5	M2,5	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60								
DI 674	SW 5,5	M3	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70						
DI 675	SW 7	M4		08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 676	SW 8	M5			10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 677	SW 10	M6			10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 548	SW 13	M8					15		20	25	30	35	40	45	50		60		70		80		90		100

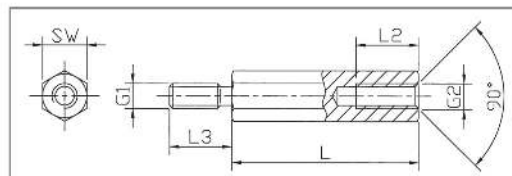
Ordering example: DI 450/55

ALUMINIUM, METRIC THREAD

Spacer bolts

Type hexagonal
Styles internal / external
 with undercut

Material Aluminium 3.1655



Internal thread lengths [L2 in mm]

External thread
lengths [L3 in mm]

L	M2.5+M3	M4	M5	M6	M8	G1=G2	L3
5	2,5					M3	6
8	5	5				M4	8
10	6	6	6	5		M5	8
12	7	8	8	7		M6	10
15	7	9	10	10	10	M8	14
18	7	9	10	12	12		
from 20	7	9	10	12	14		

Minimum tensile strength: 310 N/mm²
 Tolerance for length dimensions: +/- 0,1 mm
 (applies to SW 13 : DIN 2768-m)

Lengths [mm]

Order No.	SW (hexagonal)	Thread	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 502	SW 5	M2,5	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60								
DI 503	SW 5,5	M3	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60								
DI 506	SW 6	M3	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70						
DI 510	SW 7	M4	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 514	SW 8	M5		08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 507	SW 10	M6			10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 515	SW 13	M8					15		20	25	30	35	40	45	50		60		70		80		90		100

Ordering example: DI 502/40

POLYAMIDE, BRASS THREAD

Spacer bolts

Type hexagonal
Styles internal / external

Material Body: Polyamide 6.6
 Thread: Messing nickel plated

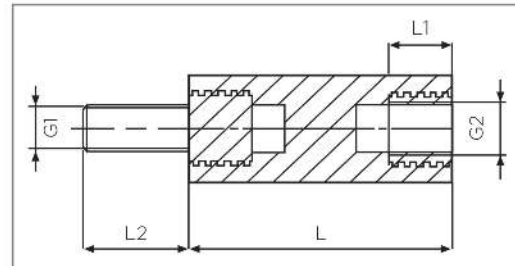
Colour white
Flammability Rating V2

Contact resistance: 10^{12} Ohm / cm
 Dielectric strength: 50 kV / mm
 Tolerance for length dimensions: +/- 0,1 mm

Order No.	SW (hexagonal)	Thread	Lengths (L) in mm increments
DI 682	SW 6	M2,5	15-65
DI 683	SW 6	M3	15-65
DI 684	SW 8	M4	15-65
DI 685	SW 10	M5	15-70

Ordering example: DI 684/17

Note: The pull-out strength and torques may vary depending on application and ambient influences (e.g. temperature, air humidity, etc.). for critical applications please carry out trials. Alutronic does not assume any liability for the specified strength values.



Strength / resistance values

Thread lengths [mm]			Torques [Nm]			Pull-out torques [N]		
G1=G2	L1	L2	SW6	M2,5	1,3	SW6	M2,5	300
M2,5	6	6	SW6	M3	1,3	SW6	M3	300
M3	6	6	SW8	M4	3,0	SW8	M4	600
M4	6	8	SW10	M5	4,5	SW10	M5	800
M5	6	10						

POLYAMIDE, BRASS THREAD

Spacer bolts

Type hexagonal
Styles internal / internal

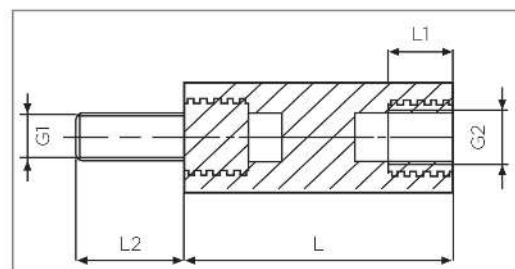
Material Body: Polyamide 6.6
 Thread: Messing blank

Flammability Rating V2
Colour natural

Contact resistance: 10^{12} Ohm / cm
 Dielectric strength: 50 kV / mm
 Tolerance for length dimensions: +/- 0,2 mm

Order No.	SW (hexagonal)	Thread	Lengths (L) in mm increments
DI 597	SW 13	M6	25-100
DI 598	SW 15	M8	25-100

Note: The pull-out strength and torques may vary depending on application and ambient influences (e.g. temperature, air humidity, etc.). for critical applications please carry out trials. Alutronic does not assume any liability for the specified strength values.



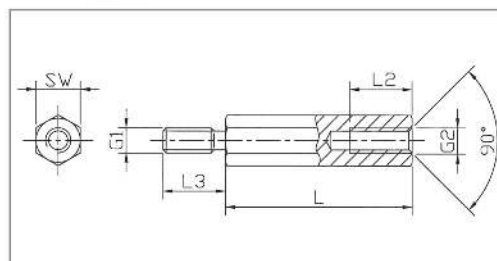
Strength / resistance values

Thread lengths [mm]			Torques [Nm]			Pull-out torques [N]		
G1=G2	L1	L2	SW13	M6	12,0	SW13	M6	1000
M6	11	12	SW15	M8	18,0	SW15	M8	1600
M8	11	14						

POLYAMIDE, METRIC THREAD

Spacer bolts

Type	hexagonal
Styles	internal / external
Material	Polyamid 6.6
Colour	black
Flammability Rating	V2



Contact resistance DIN 53 482: $>10^{12}$ Ohm/cm
 Dielectric strength DIN 54 481: 40 kV/mm
 Tolerance for length dimensions: $\pm 0,1$ mm

Order No.	SW (hexagonal)	Thread	Standardlängen in mm-Staffelung
DI 627	SW 5	M2,5	from 5 mm to 45 mm
DI 638	SW 6	M3	from 5 mm to 60 mm
DI 628	SW 8	M4	from 5 mm to 60 mm
DI 629	SW 10	M5	from 8 mm to 65 mm
DI 630	SW 10	M6	from 8 mm to 60 mm

Internal thread lengths [mm]

L (mm)	L2 (mm)
5	3,0
ab 6	4,0
ab 8	6,0
ab 10	8,0
ab 12	10,0

External thread lengths [mm]

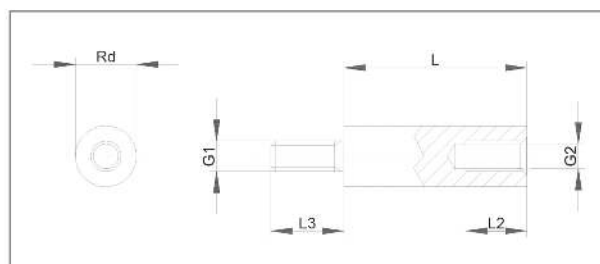
G1=G2	L3 (mm)
M2,5	8
M3	8
M4	8
M5	8
M6	10

Ordering example: DI 627/6

POLYAMIDE, METRIC THREAD

Spacer bolts

Type	round
Styles	internal / external
Material	Polyamid 6.6
Colour	black
Flammability Rating	V2



Contact resistance DIN 53 482: $>10^{12}$ Ohm/cm
 Dielectric strength DIN 54 481: 40 kV/mm
 Tolerance for length dimensions: $\pm 0,1$ mm

Order No.	Diameter (mm)	Thread	Standard lengths in mm-increments
DI 594	6	M3	from 5 mm to 60 mm
DI 599	8	M4	from 5 mm to 60 mm

Internal thread lengths [mm]

L (mm)	L2 (mm)
5	3,0
from 6	4,0
from 8	6,0
from 10	8,0
from 12	10,0

External thread lengths [mm]

G1=G2	L3 (mm)
M2,5	8
M3	8
M4	8
M5	8
M6	10

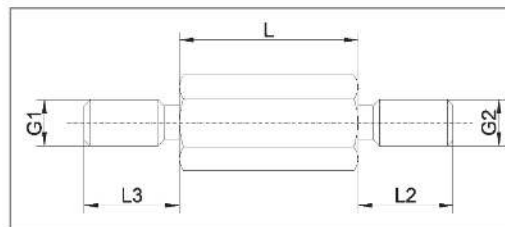
Ordering example: DI 594/10

BRASS, METRIC THREAD

Spacer bolts

Type hexagonal
Styles external / external with undercut

Material Brass 2.0401
Surface nickel plated (G3E)



External thread lengths [mm]

G1=G2	L2=L3
M2	5
M2,5	6
M3	6+8
M4	8
M5	8
M6	10

Minimum tensile strength: 430 N/mm²
 Tolerance for length dimensions: +/- 0,1 mm

Lengths [mm]

Order No.	SW (hexagonal)	Thread	05	06	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 522	SW 4	M2	05	06	08	10	12	15	18	20	25	30	35	40	45	50										
DI 523	SW 4	M2,5	05	06	08	10	12	15	18	20	25	30	35	40	45	50										
DI 524	SW 5	M2,5	05	06	08	10	12	15	18	20	25	30	35	40	45	50	55	60								
DI 525	SW 5	M3	05	06	08	10	12	15	18	20	25	30	35	40	45	50	55	60								
DI 526	SW 5,5	M3	05	06	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70						
DI 527	SW 6	M3	05	06	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70						
DI 528	SW 7	M4	05	06	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 529	SW 8	M5			08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 530	SW 10	M6				10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 534	SW 13	M8						15		20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100

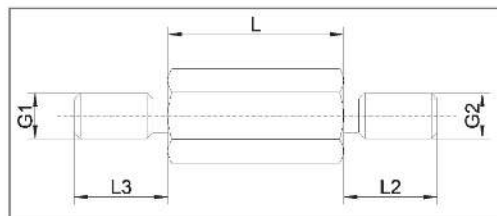
Ordering example: DI 522/30

STEEL, METRIC THREAD

Spacer bolts

Type hexagonal
Styles external / external
 with undercut

Material Steel 1.0718
Surface zinc plated (A3F)



External thread lengths [mm]

G1=G2	L2=L3
M2	5
M2,5	6
M3	6
M4	8
M5	8
M6	10
M8	14

Minimum tensile strength: 500 N/mm²
 Tolerance for length dimensions: +/- 0,1 mm
 (applies to SW 13 : DIN 2768-m)

Lengths [mm]

Order No.	SW (hexagonal)	Thread	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 549	SW 4	M2	05	08	10	12	15	18	20	25	30	35	40												
DI 550	SW 4	M2,5	05	08	10	12	15	18	20	25	30	35	40												
DI 551	SW 5	M2,5	05	08	10	12	15	18	20	25	30	35	40	45	50										
DI 552	SW 5	M3	05	08	10	12	15	18	20	25	30	35	40	45	50										
DI 543	SW 5,5	M3	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70						
DI 544	SW 6	M3	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 545	SW 7	M4	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 546	SW 8	M4	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 547	SW 8	M5		08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 537	SW 10	M6			10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 554	SW 13	M8					15		20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100

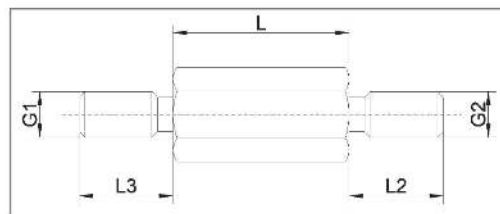
Ordering example: DI 544/20

STAINLESS STEEL, METRIC THREAD

Spacer bolts

Type hexagonal
Styles external / external
 with undercut

Material Stainless steel 1.4305



External thread lengths [L3 in mm]

G1=G2	L2=L3
M2.5-M3	6
M4	8
M5	8
M6	10
M8	14

Minimum tensile strength: 750 N/mm²
 Tolerance for length dimensions: +/- 0,1 mm
 (applies to SW 13 : DIN 2768-m)

Lengths [mm]

Order No.	SW (hexagonal)	Thread	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 555	SW 5	M2,5	05	08	10	12	15	18	20	25	30	35	40	45	50										
DI 556	SW 5,5	M3	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70						
DI 557	SW 7	M4		08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 559	SW 8	M5			10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 560	SW 10	M6			10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 561	SW 13	M8					15		20	25	30	35	40	45	50		60		70		80		90		100

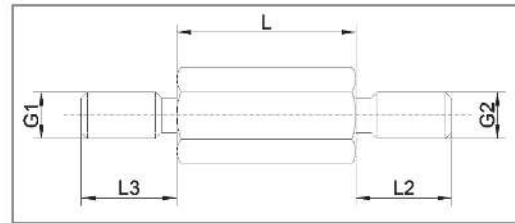
Ordering example: DI 555/45

ALUMINIUM, METRIC THREAD

Spacer bolts

Type hexagonal
Styles external / external with undercut

Material Aluminium 3.1655



External thread lengths [L3 in mm]

G1=G2	L2=L3
M3	6
M4	8
M5	8
M6	10
M8	14

Minimum tensile strength: 310 N/mm²
 Tolerance for length dimensions: +/- 0,1 mm
 (applies to SW 13 : DIN 2768-m)

Lengths [mm]

Order No.	SW (hexagonal)	Thread	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 508	SW 5	M2,5	05	08	10	12	15	18	20	25	30	35	40	45	50										
DI 509	SW 5,5	M3	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70						
DI 516	SW 6	M3	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70						
DI 517	SW 7	M4	05	08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 518	SW 8	M5		08	10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 519	SW 10	M6			10	12	15	18	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DI 595	SW 13	M8					15		20	25	30	35	40	45	50		60		70		80		90		100

Ordering example: DI 508/18

POLYAMIDE, BRASS THREAD

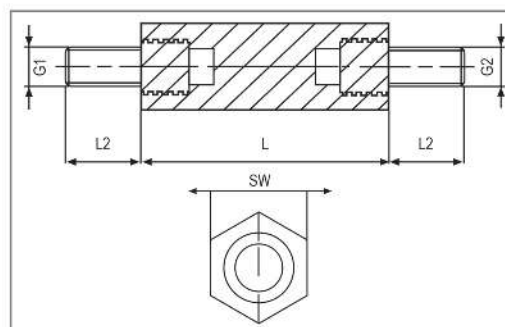
Spacer bolts

Type	hexagonal
Styles	external / external without undercut DIN 76
Material	Body: Polyamide 6.6 Thread: Brass, nickel plated
Flammability Rating	V2
Colour	white



Strength / resistance values

Thread lengths [mm]		Torques [Nm]			Pull-out torques [N]		
G1=G2	L2 (mm)	SW6	M2,5	1,3	SW6	M2,5	300
M2,5	6	SW6	M3	1,3	SW6	M3	300
M3	6	SW8	M4	3,0	SW8	M4	600
M4	8	SW10	M5	4,5	SW10	M5	800
M5	10						



Note: The pull-out strength and torques may vary depending on application and ambient influences (e.g. temperature, air humidity, etc.). for critical applications please carry out trials. Alutronic does not assume any liability for the specified strength values.

Contact resistance: 10^{12} Ohm/cm
 Dielectric strength: 50 kV/mm
 Tolerance for length dimensions: $\pm 0,1$ mm

Order No.	SW (hexagonal)	Thread	Lengths (L) in mm increments
DI 686	SW 6	M2,5	15-65
DI 687	SW 6	M3	15-65
DI 688	SW 8	M4	15-65
DI 689	SW 10	M5	15-70

POLYAMIDE, BRASS THREAD

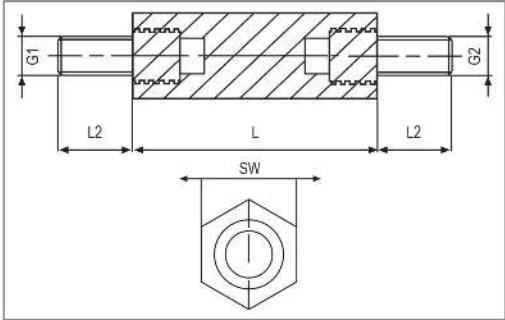
Spacer bolts

Type	hexagonal
Styles	external / external without undercut DIN 76
Material	Body: Polyamide 6.6 Thread: Messing blank
Colour	natural



Strength / resistance values

Thread lengths [mm]		Torques [Nm]			Pull-out torques [N]		
G1=G2	L2 (mm)	SW13	M6	12,0	SW13	M6	1000
M6	12	SW15	M8	18,0	SW15	M8	1600
M8	14						



Note: The pull-out strength and torques may vary depending on application and ambient influences (e.g. temperature, air humidity, etc.). for critical applications please carry out trials. Alutronic does not assume any liability for the specified strength values.

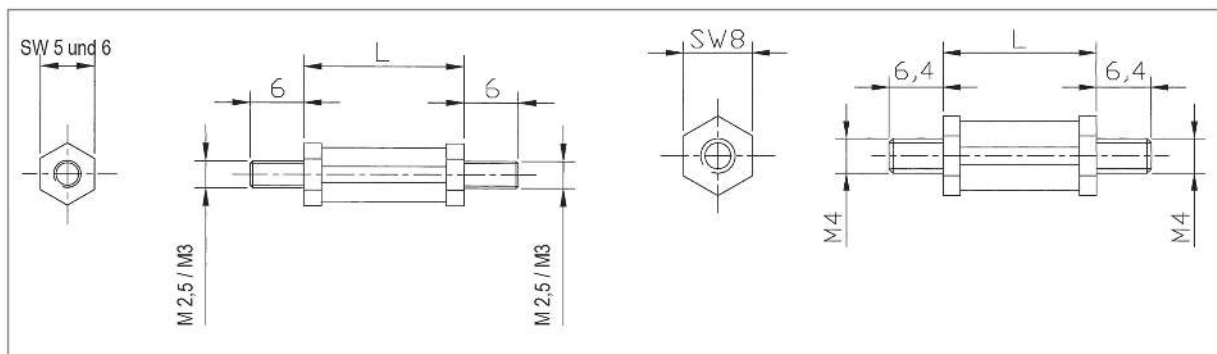
Contact resistance: 10^{12} Ohm/cm
Dielectric strength: 50 kV/mm
Tolerance for length dimensions: +/- 0,2 mm

Order No.	SW (hexagonal)	Thread	Lengths (L) in mm increments
DI 590	SW 13	M6	25-100
DI 579	SW 15	M8	25-100

POLYAMIDE, METRIC THREAD

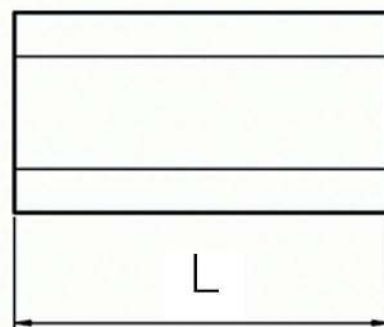
Spacer bolts

Type	hexagonal
Styles	external / external
Material	Polyamid 6.6
Flammability Rating	V2
Colour	black



Contact resistance DIN 53 482: $>10^{12}$ Ohm/cm
 Dielectric strength DIN 54 481: 40 kV/mm
 Tolerance for length dimensions: $\pm 0,1$ mm

Order No.	SW (hexagonal)	Thread	Standard lengths in mm-increments
DI 576	SW 5	M2,5	from 3 mm to 65 mm
DI 577	SW 6	M3	from 5 mm to 65 mm
DI 578	SW 8	M4	from 5 mm to 65 mm



Material: Polystyrene
Resistance to heat: 70°C
Colour: Black
Dielectric strength: 90 V/mm

Type	Inside Diameter - D1 [mm]	Outside Diameter - D2 [mm]	Length - L [mm]																	
DI 600	3,6	7	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
			19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	
DI 610	4,5	8	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
			19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	
DI 615	5,5	10	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
			19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	

Material: Makrolon
Resistance to heat: 135°C
Colour: Grey
Dielectric strength: 90 KV/mm

Type	Inside Diameter - D1 [mm]	Outside Diameter - D2 [mm]	Length - L [mm]																	
DI 601	3,6	7	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
			19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	
DI 611	4,5	8	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
			19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	
DI 616	5,5	10	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
			19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	

Material: Brass, nickel-plated
Tolerance: +/- 0.1mm

Type	Inside Diameter - D1 [mm]	Outside Diameter - D2 [mm]	Length - L [mm]																	
DI 617	3,2	6	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
			19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	
DI 618	4,3	8	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
			19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	

WK800 (Hernon 746)

WK 800 is an excellent thermally conducting two-component adhesive with very short curing time. It offers an effective thermal connection between electronic components and heat sinks. The material has an extraordinary adhesive property.

The adhesive consists of a pasty adhesive WK 800 and a liquid activator WK 800-A. The adhesive is available in container sizes of **4 ml** and **25 ml** (spray) and the activator is available as a **10 ml** bottle with brush.

The components are not mixed. It suffices to apply a small quantity of the adhesive on one of the surfaces to be bonded and smearing the other adhesive surface with the activator. The surfaces are joined by pressing them together. It is possible to make a correction within 15-30 seconds. The adhesion is sturdy after 5 minutes at room temperature and cures within 24 hours completely. Comprehensive tests have proven the excellent thermal and mechanical properties of WK 800. Consistent and uniform quality is ensured with the help of on-going quality supervision. An in-depth test should be conducted for specific applications.

		WK 800
Colour		
Max. adhesive gap	[mm]	0,25
Shear strenght	[N/mm ²]	5,5
Tensile strenght	[N/mm ²]	15,2
Thermal expansion coefficient	[ppm/K]	110
Thermal Conductivity	[W / mK]	0,76
Dielectric Strenght	[kV/mm]	26,78
Flammability		V-O
Processing temperature	[°C]	20-28
Temperature range	[°C]	-55 to +150
Storability temperature	[°C]	8 - 28
Storability at 22°C	[Jahre]	min. 3

AREAS OF APPLICATION

WK 800 fixes heat sinks to components and parts. It allows parts and components to be stuck even on vertical cooling surfaces, and similarly on metallic housing surfaces, side walls without clamps, screws or other mechanical fixture. Typical applications include adhesion of transformers, microprocessors and other heat-dissipating component and PCBs (Printed Circuit Boards) or coolers. WK 800 is particularly suitable for fixing LED chips on heat sinks.

WK 800 has several benefits compared to traditional adhesive compounds such as e.g. thermal hot adhesives or epoxy adhesives. It ensures permanent application with reliable compliance of the thermal and technical properties. The adhesive can be used easily and thus reduces costs in production as well as repair times in service. Surfaces moistened with WK 800 adhesive or activator can rest for an almost unlimited period of time without the properties of the adhesive location getting deteriorated.

INSTRUCTIONS FOR USE

Recommended aid: cotton cloth, lint-free, cleaning agent [e.g. toluene, isopropyl alcohol]

Please pay attention to the safety regulations for the solvent. Wear rubber gloves when working for a longer time!

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Task and purpose of use of a heat sink

At the junction of semiconductor elements and resistances, the electrical power loss (P_v) gets converted to heat (Q) and causes a rise in temperature. The temperature of the junction (ϑ_J) should not exceed a maximum value in order to ensure stable operation and to prevent destruction of the semiconductor.

You can refer to the data sheets of the semiconductor manufacturer for this maximum permissible junction temperature. If the heat occurring cannot be dissipated via the semiconductor housing to the surrounding medium, which is air in most cases, the component must be mounted on a heat sink. Thus, the effective housing surface area for dissipating the heat gets enlarged.

This leads to enhanced reliability and service life of the semiconductor or the entire circuit. A heat sink consists of materials with good thermal conductivity, in most cases, an aluminium alloy with a geometric structure and surface characteristic well adapted and suitable for the application.

The materials used are:

- AlMgSi 0.5 F22 for aluminium extruded profiles
- AlSi8Cu3 for aluminium die-cast parts
- Al99.9 hh for aluminium band material

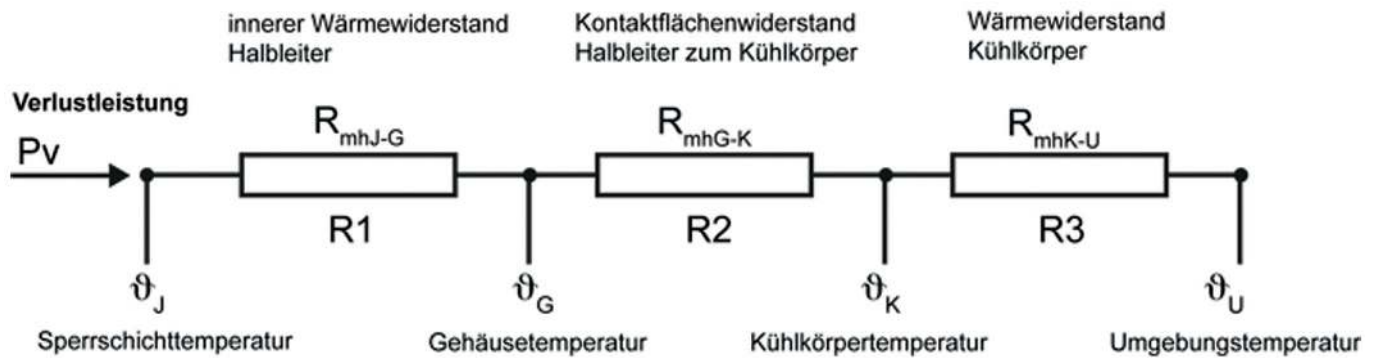
Principle of operation of a heat sink - heat dissipation and types of convection

The transport of heat from the heat source (e.g. junction of the semiconductor) via the heat sink to the surrounding medium is composed of:

- the heat transfer from the heat source to the heat sink
- the heat conduction within the heat sink to the surface of the heat sink
- the heat transfer from the surface by free or forced convection to the surrounding medium
- the heat radiation depending on the surface characteristic

The resistance to heat and the thermal equivalent circuit picture

The thermal resistance is defined as the ratio of the temperature rise with power feed and is used as a measure for the heat dissipation capacity of the heat sinks and their comparability. The lower the thermal resistance, the less is the expected temperature rise and the "better" is the heat sink. The thermal resistance is specified in K/W (Kelvin/Watt). Heat sinks and semiconductors form a functional unit, which can be represented as a thermal equivalent circuit in electrical engineering similar to Ohm's law:



Breakdown in the following sections:

- Feed of the power loss (P_v) is converted to heat flow (Q)
- Heat conduction from the junction to the assembly surface of the component
- Heat dissipation by the heat sink to the surrounding medium

R_{thK} = Thermal resistance of the heat sink in K/W

ϑ_{jmax} = Maximum junction temperature of the semiconductor in °C (from the data sheet)

ϑ_U = Ambient temperature in °C

P_v = the heat source of the power loss fed in W

R_{thjG} = Internal resistance, junction to the housing of the semiconductor in K/W

R_{thGK} = Thermal transfer resistance to the assembly surfaces in K/W (can be reduced to a minimum value with the help of heat conducting paste)

For insulated assembly, the specific thermal resistances of the insulating materials must be taken into consideration.

$\Delta\vartheta$ = Temperature difference in K

Each heat sink with a smaller thermal resistance than that calculated is suitable for this use.

Calculation of the required thermal resistance with the given loss of power and the permissible temperature gradient:

$$R_{thK} = \frac{\vartheta_{jmax} - \vartheta_j}{P_v} - (R_{thjG} + R_{thGK}) = \frac{\Delta\vartheta}{P_v} - (R_{thjG} + R_{thGK})$$

Each heat sink with a smaller thermal resistance than that calculated is suitable for this use.

The measurement and measuring conditions for the thermal resistance

All values specified in the catalogue have been measured at the premises of ALUTRONIC under the following conditions:

- Natural convection
- Heat sink matt black anodised
- Vertical arrangement of the fins
- One heat source in the centre of the heat sink (unless specified otherwise)
- Temperature measurement between the semiconductor and heat sink assembly surface, vertical arrangement of the fins
- Use of heat conducting paste
- Measurement of the ambient temperature at 1 m distance from the measuring point

The measured values are specified as temperature increase depending on the power fed with different test lengths. The thermal resistances for the associated values of power are compiled based on calculation from this in the table alongside. These tables indicate the dependence of the thermal resistance on the power fed and the length sections. From this, for example, you can derive the length from which a certain cooling profile can still be used meaningfully. In addition, the weight in gm is specified.

Impact of the thermal transfer resistance

Special attention must be paid to the thermal contact between the semiconductor housing and the assembly surface of the heat sink. It is dependent on the surface quality (depth of roughness), evenness, contact pressure and the insulating and filling materials used.

Impact of the surface colour on a heat sink

The impact of the radiation component (black surface) of a heat sink on its thermal resistance is often incorrectly estimated. You cannot derive a general rule. A heat sink with fins radiates heat primarily only via its contour surface.

The gaps between the fins are too narrow in most cases than the radiation penetrating outside and exchange of radiation only takes place between the fins surfaces lying opposite to one another. Thus, the radiation component does not rise proportionally with the surface area available for convection.

The percentage radiation component of the heat dissipation is significantly higher with a simple cooling surface than with a completely finned heat sink. The prevalent heat sinks are optimised for convection and not for radiation.

The radiation component is highly temperature-dependent and increases with the 4th exponent. If the surface temperature is kept low, e.g. with the help of external ventilation, because the heat keeps getting dissipated, then the radiation component can be ignored.

The thermally insulating anodising layer can rather deteriorate the transfer resistance.

With external ventilation, especially for powerful external ventilation, it is more purposeful to have an uncoated or chrome-plated heat sink.

A black heat sink can also absorb more radiated heat from its environment. If, in fact, there are components anywhere in the vicinity that may have higher temperatures than the heat sink, and if these have a larger radiating surface, then the effect may also reverse and the heat sink gets heated up additionally (radiation exchange).

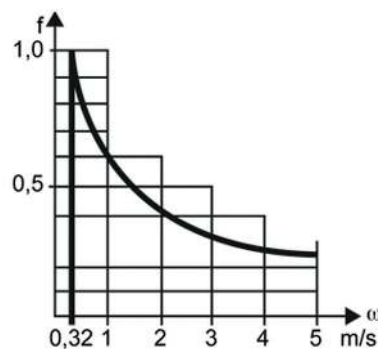
A black anodised heat sink, from the thermal perspective, is meaningful in most cases for:

- self convection and higher surface temperatures
- No other warmer radiation bodies in the vicinity
- With higher external thermal resistance (insulation of the anodised layer is low compared to the radiation component)

Moreover, of course, the surface protection must be observed. With a chrome-plated surface, the electrical conductivity is maintained and, at the same time, surface protection is present. This is e.g. especially important for housings or housing parts, which have to meet EMC requirements.

Impact of the convection properties

With the help of external ventilation, the thermal resistance of a heat sink can be reduced. If the thermal resistance for free convection is known, then for a certain length of the heat sink over which the flow occurs with unchanged temperature gradient the thermal resistance can be calculated for different flow speeds. The following diagram is applicable to a heat sink length of 100 mm and a temperature gradient of 80 K:



The factor f gives the ratio of the thermal resistance with self convection to the thermal resistance with the desired air speed.

Design aids for the conception of a new HEAT SINK

A new instrument for optimising heat sinks and also complete cooling systems is thermographic computer simulation.

With this you can also optimise and implement customised special profiles with respect to thermal characteristics within the shortest period of time.

Here, too, ALUTRONIC provides its services for solving customised heat-related problems.

Static and dynamic behaviour of a HEAT SINK

The consideration so far is valid for the static steady-state condition.

For the transient behaviour, the corresponding thermal capacities and running times need to be taken into consideration. With load pulses (e.g. when starting up vehicles or lifts), considerable amounts of heat may occur in the shortest period of time that then have to be stored intermediately.

In this case then primarily high thermal capacities with thermal resistances that are as low as possible are necessary. In this case, an aluminium or copper block or even a heat pipe can be used.

Production-related instructions

Press tolerances:

For extruded profiles, the standards DIN 1748 - Part 4 or DIN 17615 - Part 3, DIN ISO 755 - 9 or DIN ISO 12020 - 2 are used as the basis. You need to take these standards into consideration for the dimensions given in the profile drawings.

Machining tolerances:

CNC - Machining is done in accordance with DIN 2768 m.

The depths of roughness are: $RZ = 2.5$ to 4.0 for non-machined extruded profiles and $RZ < 1.5$ for plane milled surfaces. The evenness on a surface of 100×100 mm is 0.5 to 1.0 mm for non-machined extruded profiles in accordance with DIN and 0.1 mm or better for plane milled surfaces.

Air bubbles (blow holes or cavities) between the assembly surfaces can be eliminated by using heat conducting paste. As a result, the thermal transfer resistance (R_{thGK}) can be reduced. However, the paste should be applied only as thick as is absolutely necessary (avoiding air bubbles).

The conventional screw assembly at present is often replaced by a more cost-effective spring assembly in conjunction with a clip nut already pulled into the profile.

The contact pressure acts on the correct point of the semiconductor with short assembly times. You can get other machining tolerances on request.

In addition, you need to observe that for certain components special requirements are applicable for the evenness of the surface to be mounted.

In most cases, they are specified by the component manufacturer and are not always covered by the standard tolerances. You need to consult the manufacturer in such cases. In order to meet the requirements, you need to mill the assembly surface plane in most cases.

Similarly, the desired tightening torque must be specified in advance in case of stringent requirements threaded wire inserts are used in the process. Please also note the specifications of your semiconductor manufacturer.

The user is responsible for the use of profile pressed threaded channels. The pressed threads do not contain any thread pitch and thus, they are not compliant with the standard. This pitch is reproduced by offset ridges (fins).

Surface technology:

For surface treatments (anodising, chrome-plating, etc.), unavoidable clamping or contact points occur by holding them in appropriate frames.

In the case of application-based restrictions, coordination for the positioning of clamping points is necessary. Tapped blind holes are made after anodising or be stuffed in contrast to through holes. For visible and decorative parts, the requirements are specified separately.

Explanation of terms:

AL = Aluminium uncoated

SE = Anodised black

CR = Chrome-plated

NE = Naturally anodised

BL = Blue anodised

SN = Tin-plated

LS = Solder pin

IR = with insulation

SF = with assembled heat conducting foil



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