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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
POWERBLOCS 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 S10,18 (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

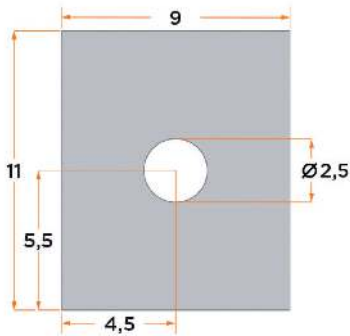
Sheet Material S10,23 (not adhesive) and SI 0,23-S (one-side adhesive)



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.

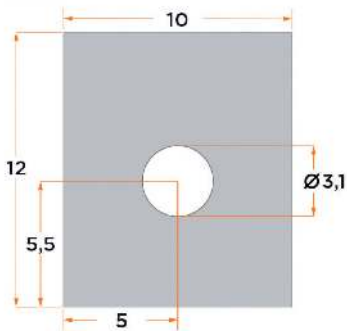
Sorted by shape of the semiconductor casing



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

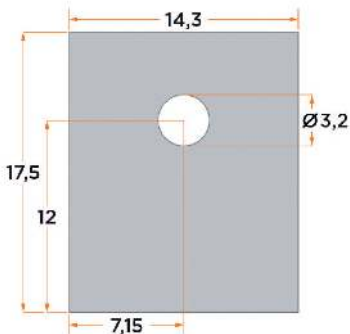
For Casing: **TO 220**



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

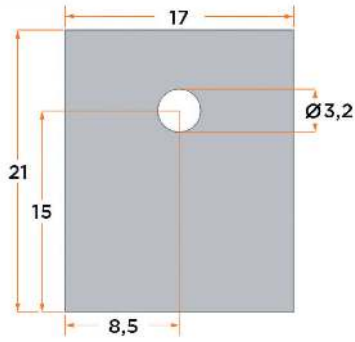
For Casing: **TO220**



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

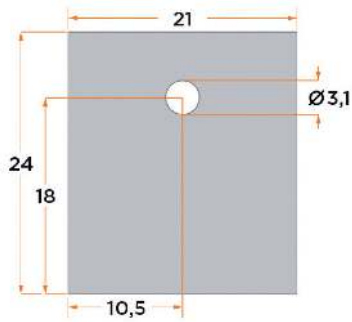
For Casing: **TO220**



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		4500 (VAC)
SI 7013-S	SI0,23-S*			

* one side adhesive

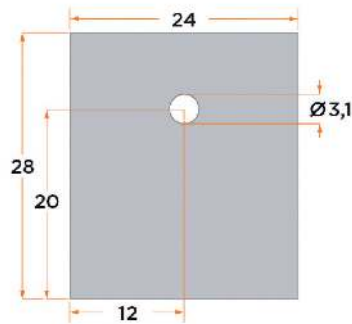
For Casing: **TO 220**



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		4500 (VAC)
SI 7014-S	SI0,23-S*			

* one side adhesive

For Casing: **TO 220**



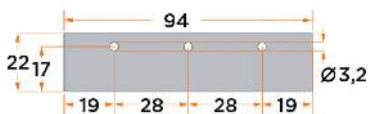
Type	Material	Thick-ness	Thermal Conductivity	Dielectric Strength
SI 7005	SI0,18	0,18mm	0,9 W/mK	3500 (VAC)
SI 7005-S	SI0,18-S*			
SI 7015	SI0,23	0,23mm		4500 (VAC)
SI 7015-S	SI0,23-S*			

* one side adhesive

For Casing: **TO 220**

for multiple mounting

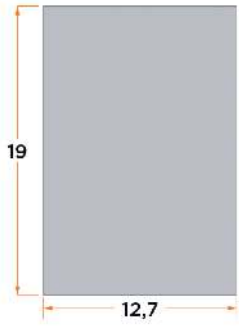
You can find compatible profile heat sinks in the section on heat sinks, PCB installation, multiple cooling



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		4500 (VAC)
SI 7019-S	SI0,23-S*			

* one side adhesive

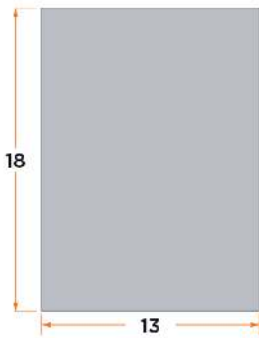
For Casing: **TO 220**



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

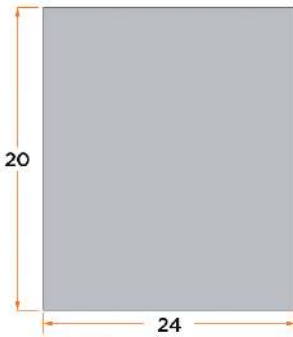
For Casing: **TO 220**



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

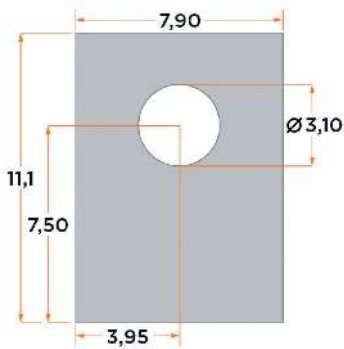
For Casing: **TO 220**



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

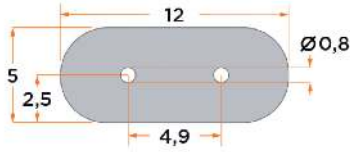
For Casing: **TO 220**



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

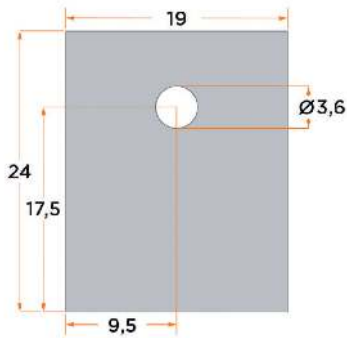
For Casing: **SOT 32**



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

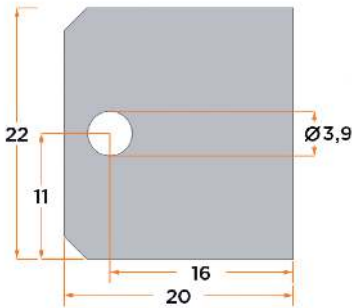
For Casing: **Quartz**



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

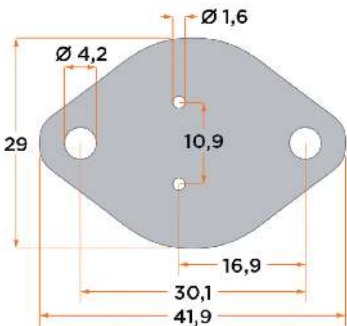
For Casing: **TOP 3 (TO 218)**



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 481	SI0,23	0,23mm	0,9 W/mK	4500 (VAC)
SI 481-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



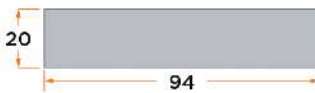
Type	Material	Thick-ness	Thermal Conductivity	Dielectric Strength
SI 7008	SI0,18	0,18mm	0,9 W/mK	3500 (VAC)
SI 7008-S	SI0,18-S*			
SI 7018	SI0,23	0,23mm		4500 (VAC)
SI 7018-S	SI0,23-S*			

* 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



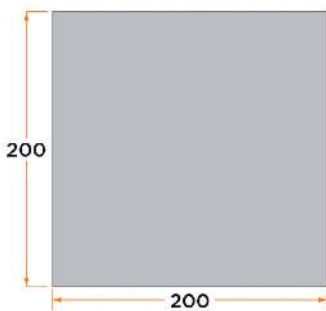
Type	Material	Thick-ness	Thermal Conductivity	Dielectric Strength
SI 6018	SI0,18	0,18mm	0,9 W/mK	3500 (VAC)
SI 6018-S	SI0,18-S*			
SI 6023	SI0,23	0,23mm		4500 (VAC)
SI 6023-S	SI0,23-S*			

* 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		4500 (VAC)
SI 4023-S	SI0,23-S*			

* one side adhesive

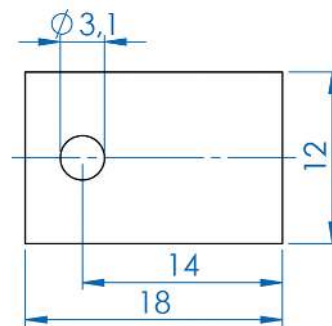


Mica panels are used in conjunction with insulating bushings for insulated assembly of semiconductors, e.g. on heat sinks.

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

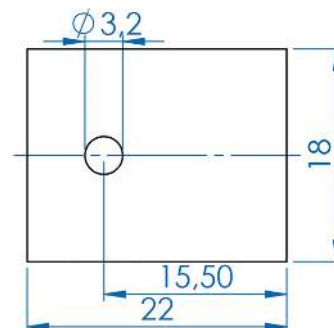
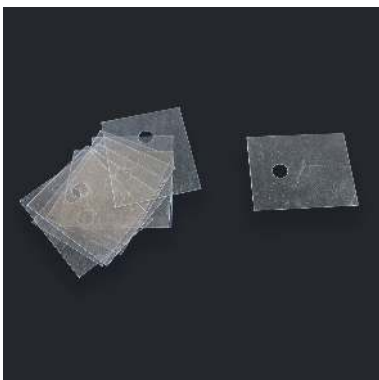
GL 530



For Casing: **TO 220**

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

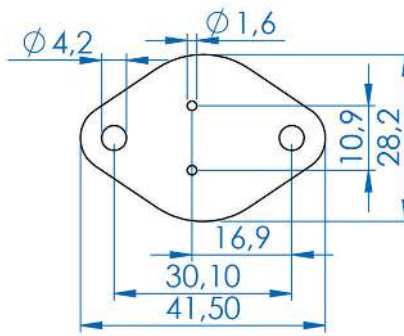
GL 535/N



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!



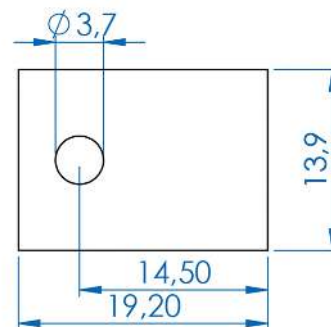
Aluminium oxide slices are used for insulated assembly of semiconductors for high voltage ranges. Despite the high dielectric strength, good heat transfer, from the semiconductor to the heat sink is available.

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 pleased to cut customised aluminium oxide slices for you based on your drawing.

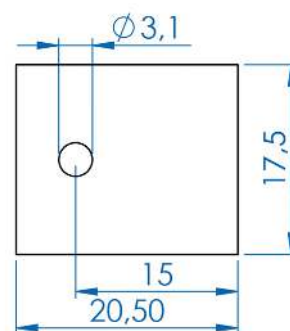
AO 475



For Casing: **TO 220**

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

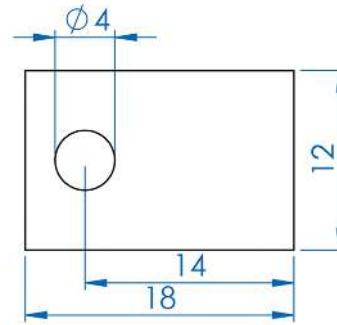
AO 472



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

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

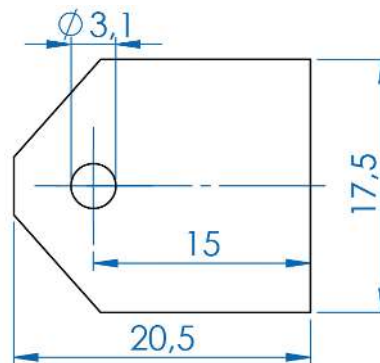
AO 479



For Casing: **TO 220**

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

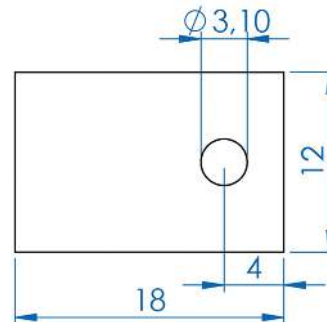
AO 471



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

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

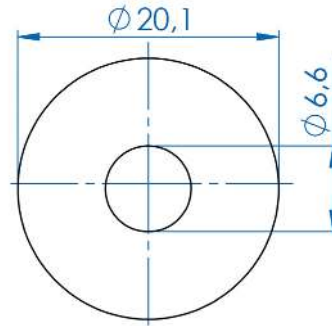
AO 474



For Casing: **TO 220**

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

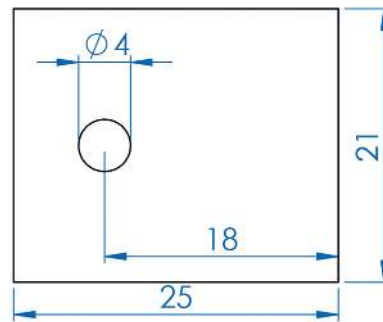
AO 478



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**

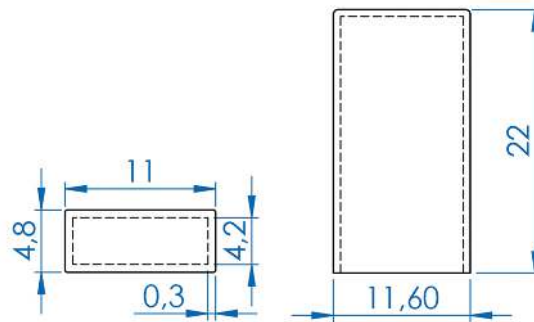


Insulating caps and insulating hoses made from high quality silicone rubber simplify the insulated structure of semiconductors on heat sinks, especially with clip assembly.

General technical values:

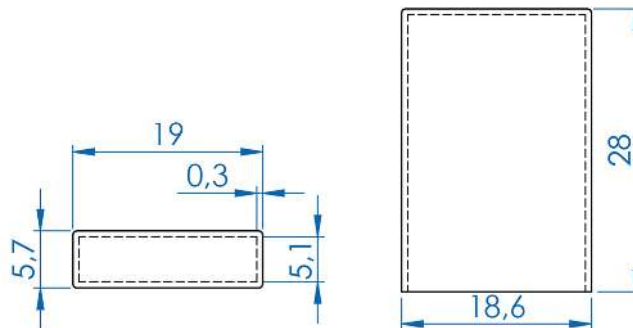
Colour:	Grey
Dielectric strength:	10 KV
Dielectric constant at 10 ⁴ MHz:	4.4 KV
Temperature range:	- 60/+180°C
Hardness:	75 Shore A
Expansion	100 %
R _{th} :	1.48 K/W

IK 550



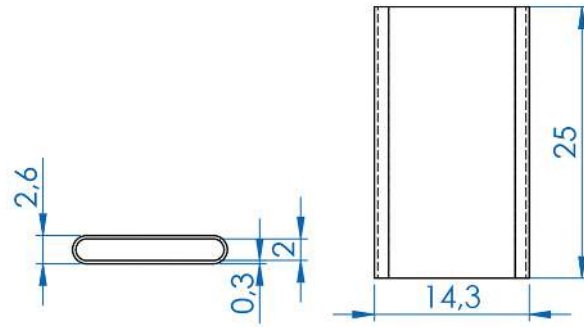
For Casing: **TO 220**

IK 553



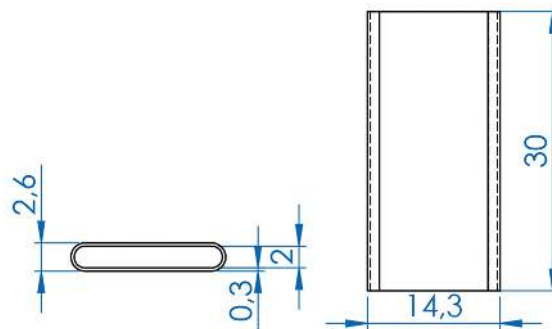
For Casing: **TO 218, TOP 3**

IL 555/25



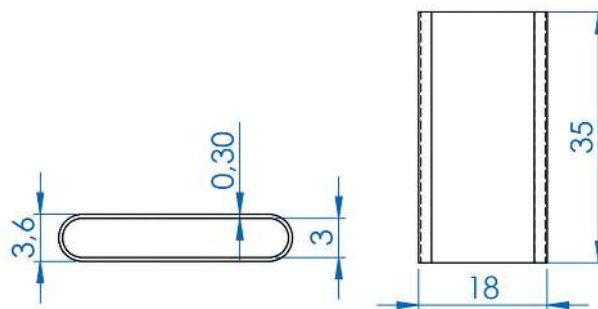
For Casing: **TO 220**

IL 555/30



For Casing: **TO 220**

IL 557/35



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

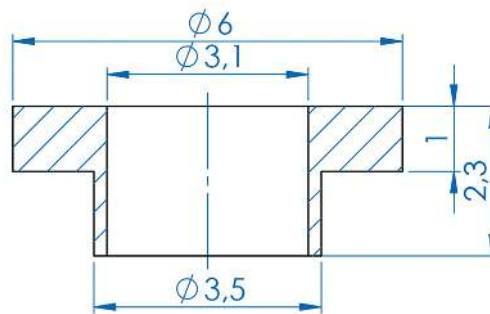


Insulating bushes are used in conjunction with insulating washers made of silicone or mica for insulated screw assembly of semiconductors, e.g. on heat sinks.

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

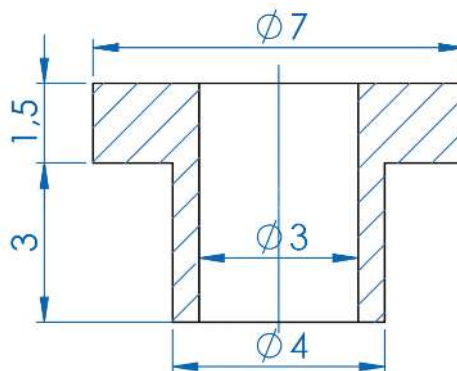
flammability according to UL 94 VO

IS 560 + IS 561



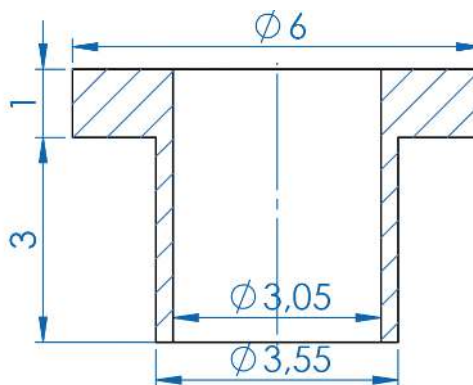
article	For Casing	Dielectric Strength [KV]	Material	Colour
IS 560	TO220, TO218 (TOP3), Multiwatt	30	Macrolon	White
IS 561	TO220, TO218 (TOP3), Multiwatt	16	SR25	Black/Grey

IS 560 + IS 561



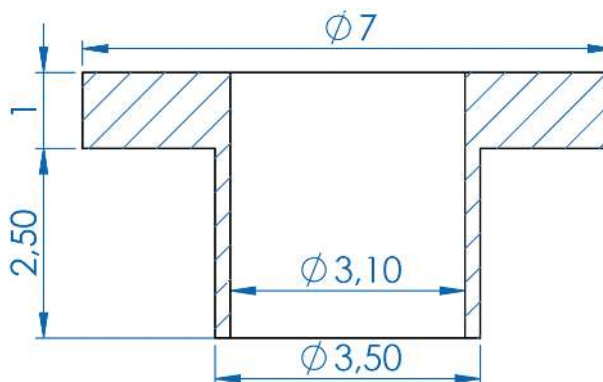
article	Dielectric Strength [KV]	Material	Colour
IS 574	30	Macrolon	
IS 576	16	SR25	

IS 570



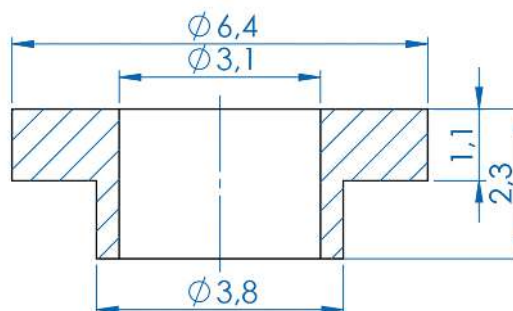
For Casing: **TO220, TO218 (TOP3), Multiwatt** Dielectric Strength: [KV]: **16** Material: **SR25**

IS 570



For Casing: **TO220, TO218 (TOP3), Multiwatt** Dielectric Strength: [KV]: **16** Material: **SR25**

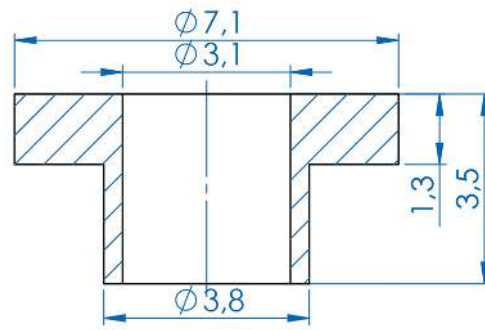
IS 565



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

article	Dielectric Strength [KV]	Material	Colour
IS 565	30	Macrolon	
IS 565	16	SR25	

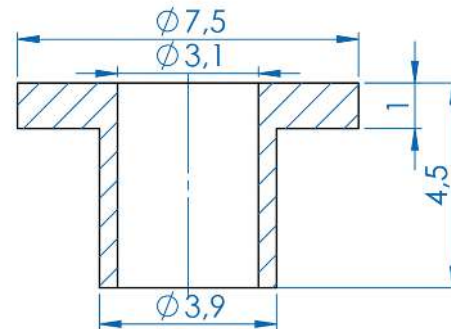
IS 570



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

article	Dielectric Strength [KV]	Material	Colour
IS 570	30	Macrolon	
IS 570	16	SR25	

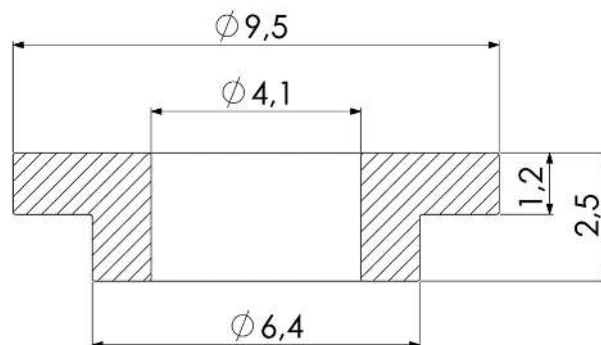
IS 580



For Casing: **TO 3**

article	Dielectric Strength [KV]	Material	Colour
IS 580	30	Macrolon	
IS 580	16	SR25	

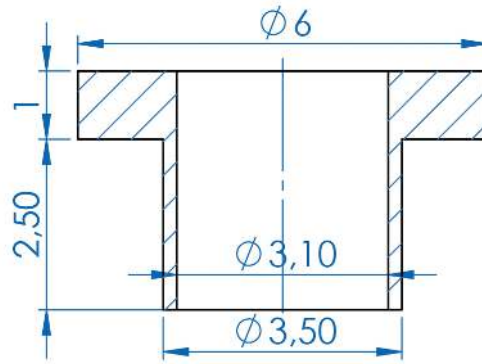
IS 585



For Casing: **Dioden**

article	Dielectric Strength [KV]	Material	Colour
IS 585	30	Macrolon	
IS 585	16	SR25	

IS 570



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

Dielectric Strength: [KV]: **16**

Material: **SR25**

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 - siliconfree

(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	

type	page	type	page
A		SI 6018(-S) + SI	10
AO 471	14	6023(-S)	
AO 472	13	SI 7001(-S) + SI	6
AO 474	14	7011(-S)	
AO 475	13	SI 7002(-S) + SI	6
AO 478	15	7012(-S)	
AO 479	14	SI 7003(-S) + SI	7
AO 480	15	7013(-S)	
G		SI 7004(-S) + SI	7
GL 510	12	7014(-S)	
GL 530	11	SI 7005(-S) + SI	7
GL 535/N	11	7015(-S)	
I		SI 7006(-S) + SI	8
IK 550	16	7016(-S)	
IK 553	16	SI 7007(-S) + SI	8
IL 555/25	17	7017(-S)	
IL 555/30	17	SI 7008(-S) + SI	10
IL 557/35	17	7018(-S)	
IS 560	18	SI 7009(-S) + SI	7
IS 561	18	7019(-S)	
IS 565	19		
IS 570	20		
IS 574	18		
IS 576	18		
IS 580	20		
IS 585	20		
P			
PA 700 PA 701	22		
PA 800	22		
S			
SI 0,13 (both sides adhesive)	4		
SI 0,18 und SI 0,18-S (one side adhesive)	5		
SI 0,23 und SI 0,23-S (one side adhesive)	5		
SI 4018(-S) + SI	10		
4023(-S)			
SI 480(-S) + SI	9		
482(-S)			
SI 485(-S) + SI	8		
483(-S)			
SI 487(-S) + SI	8		
498(-S)			
SI 488(-S) + SI	6		
489(-S)			
SI 490(-S) + SI	9		
495(-S)			
SI 492(-S) +	9		
SI 493(-S)			
SI 497(-S) + SI	9		
499(-S)			