High quality thermal interface materials

The connection of the device to be dissipated to the heat sink is especially important as for a poor heat transfer, i.e. from the device to the heatsink, the heat conduction respectively the heat transition is reduced and the device temperature will be significantly increased. Beside functional restrictions an uncontrolled temperature increase or even a device destruction is also possible. An optimal heat transfer can only be achieved if the inevitable tolerances, unevennesses and roughnesses of the surfaces to be connected which occur by production processes will be equalised. Suitable thermal conductive foils matching to the application provide excellent solutions for the thermotechnical contact optimization.

Our wide range of products contains i.e. silicon-containing and silicone-free thermal conductive foils, one sided and double sided adhesive thermal conductive foils, high thermal conductive graphite foils, thermal conductive silicone foam foils, silicone-containing and silicone-free GEL thermal conductive foils, dispensable GEL thermal conductive foils, kapton insulating washers, aluminium oxide and mica washers, phase change thermal conductive materials, silicone-containing and silicone-free thermal conductive pastes as well as various thermal conductive glues.

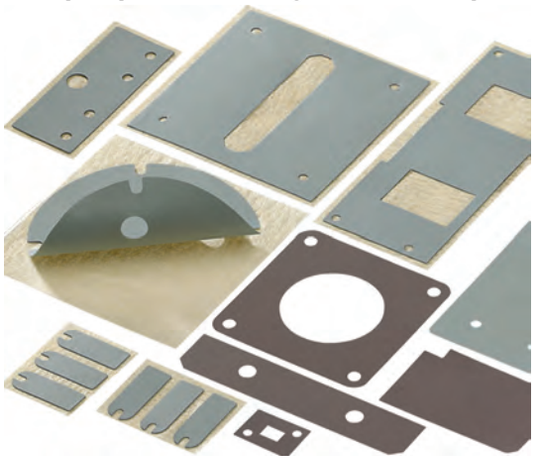
The different thermal conductive foils can be produced individually out of plate- or roll material according to customer specific drawings. Please also use our **24 hour sample service** for individual cuts of our standard thermal conductive materials according to your specification.

Production process:

Drawing parts with digital cutter

CAD data as a dxf file can be realised directly in ready and zero-toleranced exact cut templates without tooling costs. The outstanding production speed and a cutting technology perfected to the last detail provide an optimal result.

Stamped parts according to customer specific requirements



We produce contour die-cutting according to your drawing specification flexibly and fast for you.
The fully automised punching machine with the associated steel strip blanking die is particularly suitable for smaller, but also for higher quantities. Beside contour- and kiss-cut parts the possibility of cutting roll material to size or machining according to customer's requirements is also given.

The thermal data in the catalogue refers to an area of 1 inch^2 (6.45 cm^2) if not indicated otherwise.

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Overview thermal interface material

art. no.	thermal conductivity [W/m*K]	material thickness [mm]	page
WLFT 404 ... / WLFT 414 ... (double sided)	0,400	0,127	E 37
WLFT 405 ... (double sided)	0,500	0,15	E 37
WLPF ...	0,500	-	E 70
WSF(S) ...	0,460 @ 1,6 mm 0,520 @ 3,2 mm	0,8 / 1,6 / 2,4 / 3,2 / 4,8 / 6,35	E 41
WLFT 88 ... (double sided)	0,600	0,13 / 0,25 / 0,38 / 0,5	E 39
WLP ...	0,610	-	E 70
WLK ...	0,836	-	E 72
FSF 52 P	0,900	0,127	E 67
WFPK 09	0,900	0,152	E 26
WFS 09 ...	0,900	0,178 / 0,229	E 14
WFP 09	0,900	0,229	E 27
WK ... (one sided)	0,920	0,2	E 12
WLK DK ...	1,000	-	E 73
WG ...	1,130	0,2	E 12
WS ...	1,220	0,3	E 12
WFPK 13	1,300	0,152	E 28
WLFT 412 ... (double sided)	1,400	0,23	E 37
GEL 14 (G) ...	1,400	0,5 / 1,0 / 1,5 / 2,0 / 2,5 / 3,0 / 3,5 / 4,0 / 4,5 / 5,0	E 45
WB ...	1,430	0,15	E 12
FSF 15 P ...	1,500	0,114 / 0,127 / 0,140	E 68
WLFT 8926 ... (double sided)	1,500	0,2 / 0,25 / 0,5	E 40
GEL (G) ...	1,500	0,5 / 1,0 / 1,5 / 2,0 / 2,5 / 3,0 / 3,5 / 4,0 / 4,5 / 5,0	E 46
WFG 15 ...	1,500	0,508 / 1,016 / 1,524 / 2,032 / 2,54 / 3,175 / 4,064 / 5,08	E 47
GEL F 15 (G) ...	1,500	1,0 / 1,5 / 2,0	E 42
FSF 16 P ...	1,600	0,102 / 0,114 / 0,127	E 69
WFS 16	1,600	0,229	E 15
WFKF 18 ...	1,800	0,150 / 0,175 / 0,325	E 29
WFS 18	1,800	0,203	E 16
WFK 18 ...	1,800	0,225 / 0,25	E 17
GEL S 18 (liquid)	1,800	-	E 60
GEL S 20 (liquid)	1,800	-	E 61
FSF 20 P	2,000	0,200	E 67
WFKF 20 ...	2,000	0,5 / 1,0	E 43
WLK SK 50	2,000	-	E 74
WFQ 25	2,500	0,152	E 32
WFK 25 ...	2,500	0,225 / 0,25	E 18
GEL 28 (G) ...	2,500	0,5 / 1,0 / 1,5 / 2,0 / 2,5 / 3,0 / 3,5 / 4,0 /4,5 / 5,0	E 50
GEL 28 S ...	2,500	1,0 / 1,5 / 2,0 / 2,5 / 3,0 / 3,5 / 4,0 /4,5 / 5,0	E 56
FSF 30 P	3,000	0,12	E 67

Explanation of the colours:

Thermally conductive foils containing silicone	Silicone-free thermally conductive foils	Aluminium and graphite foils	Adhesive thermally conductive foils	GAP Filler thermally conductive foils	GAP Fillers for extreme compressions	Phase Change thermally conductive foils	Thermally conductive pastes	Thermally conductive glues

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Overview thermal interface material

art. no.	thermal conductivity [W/m*K]	material thickness [mm]	page
WLFT 30 ... (one sided)	3,000	0,15 / 0,23	E 35
WFKF 30 02	3,000	0,2	E 30
WFSA 30 ...	3,000	0,381 / 0,508	E 19
GEL F 30 ...	3,000	0,5 / 1,0 / 1,5	E 44
WFGH 30 ...	3,000	0,508 / 1,016 / 1,524 / 2,032 / 2,54 / 3,175	E 49
GEL 30 S ...	3,000	0,5 / 1,0 / 1,5 / 2,0 / 2,5 / 3,0 / 3,5 / 4,0	E 55
GEL S 30 (liquid)	3,000	-	E 61
WFF 33 ...	3,300	0,2 / 0,3	E 20
WFS 34 ...	3,400	0,2 / 0,3 / 0,45	E 21
WFK 35 ...	3,500	0,125 / 0,225 / 0,25	E 22
GEL S 35 ... (liquid)	3,500	-	E 62
WLFT 40 023 (one sided)	4,000	0,23	E 36
GEL S 40 (liquid)	4,300	-	E 61
GEL 45 (G) ...	4,500	0,5 / 1,0 / 1,5 / 2,0 / 2,5 / 3,0 / 3,5 / 4,0 /4,5 / 5,0	E 50
WFC 50 ...	5,000	0,2 / 0,3 / 0,45 / 0,8	E 23
WFGH 50 ...	5,000	0,508 / 1,016 / 1,524 / 2,032 / 2,54 / 3,175	E 51
GEL 50 S ...	5,000	0,5 / 1,0 / 1,5 / 2,0 / 2,5 / 3,0 / 3,5 / 4,0	E 56
WFK 60 ...	6,000	0,1 / 0,2 / 0,225 / 0,3	E 31
GEL 60 (G) ...	6,000	0,5 / 1,0 / 1,5 / 2,0 / 2,5	E 54
GEL 60 S ...	6,000	1,5 / 2,0 / 2,5	E 57
WFK 65 ...	6,500	0,25 / 0,275	E 24
GEL 70 S ...	7,000	1,0 / 1,5 / 2,0 / 2,5 / 3,0 / 3,5 / 4,0	E 58
WLFG S 900 ...	7,500	0,15 / 0,175	E 33
WLFG 98 ...	8,000	0,13 / 0,25 / 0,5	E 34
WFS 80 ...	8,000	0,2 / 0,3 / 0,45	E 25
WLPK ...	10,000	-	E 71
GEL 80 (G) ...	13,000	0,3 / 0,5 / 1,0 / 1,5 / 2,0 / 2,5 / 3,0	E 53
GEL 130 S ...	13,000	0,5 / 1,0 / 1,5 / 2,0	E 59

Explanation of the colours:

Thermally conductive foils containing silicone	Silicone-free thermally conductive foils	Aluminium and graphite foils	Adhesive thermally conductive foils	GAP Filler thermally conductive foils	GAP Fillers for extreme compressions	Phase Change thermally conductive foils	Thermally conductive pastes	Thermally conductive glues

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Thermal conductive foils for semiconductors

– thermal conductive foils cut to size for IGBT, DC/DC converters and Solid State Relais
– other thermal conductive materials and cuts according to to customer's specifications

art. no.	page	thermal conductivity [W/m·k]	material thickness [mm]	type
WFQ 25 ...	E 32	2.5	0.152	aluminium foil
WLFG S 900 **WLFG S 900 K** **WLFG 9813** **WLFG 9825** **WLFG 9850**	E 33 E 33 E 34 E 34 E 34	7.5 7.5 8.0 8.0 8.0	0.150 0.175 0.130 0.250 0.500	graphite foil
FSF 15 P 011 **FSF 15 P 012** **FSF 15 P 014** **FSF 20 P**	E 68 E 68 E 68 E 67	1.5 1.5 1.5 2.0	0.114 0.127 0.140 0.200	phase-change thermal conductive foil

Order example

WLFG 9010 — **Thermally conductive foil**

54 x 94 — **dimension**

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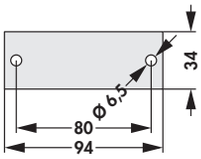
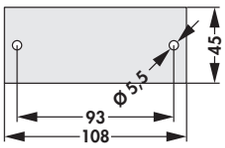
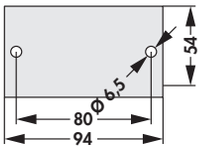
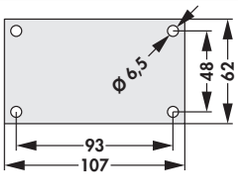
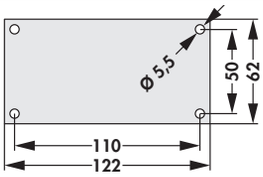
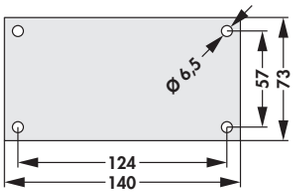
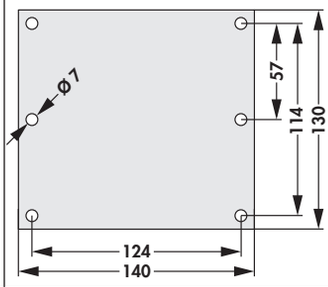
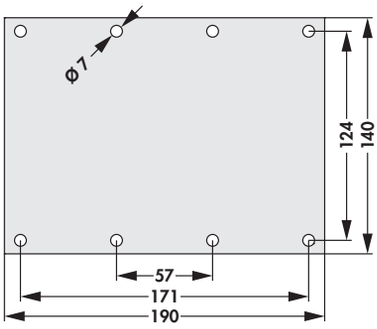
IGBT

dimension [mm]	blanks	manufacturer	component
34 x 94		Infineon MCC IXYS Semikron	Int-A-Pak (New) / 34mm Module MF … F2 / MT … T2 / MD … D2 Y4-M6 SEMITRANS 2 / SEMIPACK 2
45 x 108		Infineon IXYS	Econo 2 / Econo PIM 2 / Econo PACK 2 / Econo BRIDGE / Iso PACK 2 E2-Pack
54 x 94		Infineon MCC IXYS Semikron	MTC / Iso PACK 54 MD … M3 / MD … M5 PWS-E Flat / PWS-E SEMIPOINT 4
62 x 107		Infineon MCC IXYS Semikron	Dual Int-A-Pak / 62 mm Module MT … L2 E3-Pack SEMITRANS 3 / SEMITRANS 4
62 x 122		Infineon IXYS Semikron	Econo 3 / Econo DUAL + / Econo PIM 3 / Econo PACK 3 SimBus F SEMIX 3p / SEMIX 3Ip
73 x 140		Infineon	IHV
130 x 140		Infineon	IHM / IHV
140 x 190		Infineon	IHM / IHV

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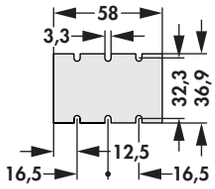
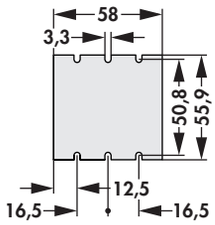
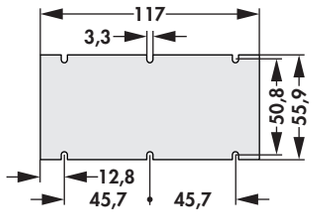
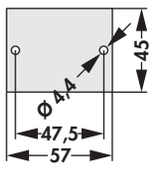
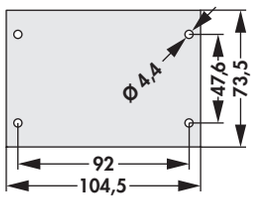
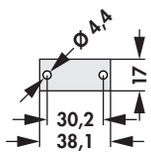
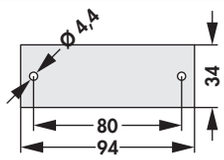
Thermal conductive foils for semiconductors

DC/DC converter

dimension [mm]	blanks	component
36.9 x 58		Micro DC/DC-converter
55.9 x 58		Mini DC/DC-converter
55.9 x 117		Maxi DC/DC-converter

Solid State Relais

dimension [mm]	blanks	component
45 x 57		SSR 1
73.5 x 104.5		SSR 2
17 x 38.1		SSR 3
34 x 94		SSR 4

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Thermal conductive foils for LED

– thermal conductive foils cut to size for LEDs
– other thermal conductive materials and cuts according to to customer's specifications

art. no.	page	thermal conductivity [W/m·k]	material thickness [mm]	type
WFQ 25 ...	E 32	2.5	0.152	aluminium foil
WLFG S 900	E 33	7.5	0.150	graphite foil
WLFG S 900 K	E 33	7.5	0.175	
WLFG 9813	E 34	8.0	0.130	
WLFG 9825	E 34	8.0	0.250	
WLFG 9850	E 34	8.0	0.500	
WLFT 404	E 37	0.4	0.127	double-sided adhesive thermal conductive foil
WLFT 405	E 37	0.5	0.150	
WLFT 8805	E 39	0.6	0.130	
WLFT 8810	E 39	0.6	0.250	
WLFT 8815	E 39	0.6	0.380	
WLFT 8820	E 39	0.6	0.500	
WLFT 8926	E 40	1.5	0.2 / 0.25 / 0.5	
WLFT 30	E 35	3.0	0.15 / 0.23	one-side adhesive thermal conductive foil
FSF 15 P 011	E 68	1.5	0.114	phase-change thermal conductive foil
FSF 15 P 012	E 68	1.5	0.127	
FSF 15 P 014	E 68	1.5	0.140	
FSF 20 P	E 67	2.0	0.200	

Order example

WLFT 8810	20 x 24
Thermally conductive foil	dimension

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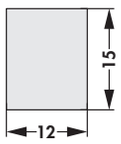
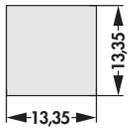
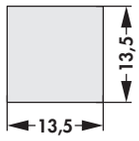
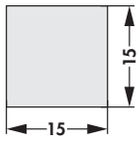
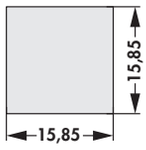
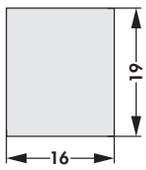
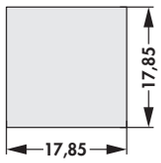
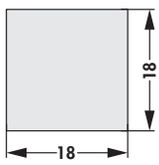
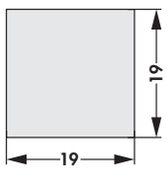
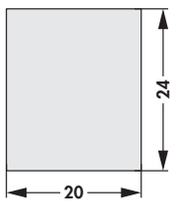
Thermal conductive foils for LED

dimension [mm]	blanks	manufacturer	LED package
12 x 15		Lumileds Luxeon Sharp Nichia LG Innotec	CoB 1202S Mini ZENIGATA / GW6BMG / GW6BGG / GW6BMW / GW6BGW / GW6NGW NTCWT / NTCWS / NVNWS / NJCWS LEMWM12480 / LEMWM12490
13.35 x 13.35		Cree Seoul Semiconductor	CXA13XX / CXB13XX SAW 806 / SAW810 / SAW906 / SAW910
13.5 x 13.5		Citizen	CLU026 / CLU027 / CLU028 / CLU700 / CLU701
15 x 15		Osram	Soleriq P9
15.85 x 15.85		Cree	CXA15XX / CXB15XX
16 x 19		Lumileds Luxeon Nichia LG Innotec	CoB 1202 / CoB 1203 NFCWL / NVEWL / NVCWL LEMWM19480 / LEMWM19490 / LEMWM19680 / LEMWM19690
17.85 x 17.85		Cree	CXA18XX / CXB18XX
18 x 18		Osram	Soleriq S13
19 x 19		Citizen Seoul Semiconductor	CLU036 / CLU038 / CLU710 / CLU711 / CLU720 / CLU721 SAW815 / SAW915
20 x 24		Lumileds Luxeon Sharp LG Innotec	CoB1204 / CoB1205 / CoB1208 Mini ZENIGATA / GW6DMB / GW6DGB / GW6DMC / GW6DGC / GW6DMD / GW6DGD / GW6DME / GW6DGE / GW6TGB / Tiger ZENIGATA / GW6TGC LEMWM24780 / LEMWM24790 / LEMWM24980 / LEMWM24990 / LEMWM24B80 / LEMWM24B90

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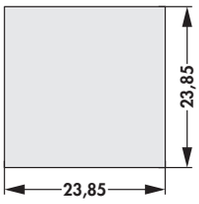
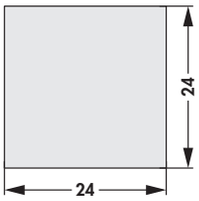
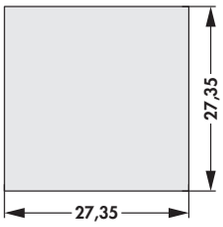
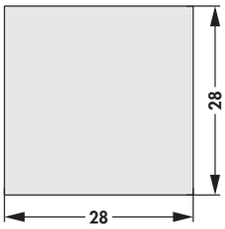
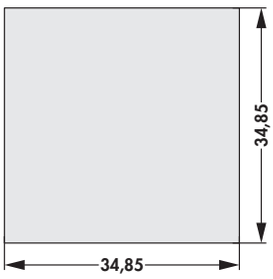
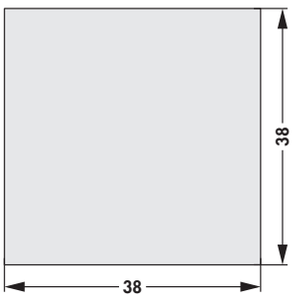
Thermal conductive foils for LED

dimension [mm]	blanks	manufacturer	LED package
23.85 x 23.85		Cree	CXA25XX / CXB25XX
24 x 24		Osram	Soleriq S19
27.35 x 27.35		Cree	CXA30XX / CXB30XX
28 x 28		Lumileds Luxeon Citizen Seoul Semiconductor LG Innotec	CoB 1211 CLU046 / CLU048 / CLU731 SAW822 / SAW922 LEMWM28D80 / LEMWM28D90 / LEMWM28E80 / LEMWM28E90
34.85 x 34.85		Cree	CXA35XX / CXB35XX / CXA2Studio
38 x 38		Citizen Seoul Semiconductor Nichia	CLU056 / CLU058 / CLU550 SAW833 / SAW933 NFEWH

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