



ELEKTROTECHNIKA

Heatsinks and accessories

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Air heatsinks for stud base devices

Features:

- Air heatsinks for natural and forced cooling
 - Suitable for packages with various studs
- Custom-made products available



Heatsink	For case /stud	R _{thha} for cooling		R _{thch} ³⁾	m	M _m
		Natural ¹⁾	Forced ²⁾			
		[K/W]	[K/W]	[K/W]	[K/W]	[Nm]
L 65 typ 37.2	OK14/M6	1,10	0,320	0,29	0,87	25
L 65 typ 37.2	OK17/M6	1,10	0,320	0,24	0,87	25
L 65 typ 38.2	OK32/M16	0,89	0,260	0,05	0,85	35
L 65 typ 39.2	OK41/M20	0,86	0,240	0,03	0,85	50
L 100 typ 62.2	OK41/M16	0,79	0,200	0,03	1,30	50
L 100 typ 63.2	OK32/M16	0,79	0,220	0,05	1,30	35
L 140 typ 60.2	OK41/M20	0,66	0,170	0,03	1,85	50
L 140 typ 61.2	OK32/M16	0,74	0,183	0,05	1,82	35

1) for temperature rise of heatsink vs. ambient $\Delta T_{ha} = 50 \text{ K}$

2) for coolant flow velocity $v_h = 6 \text{ m/s}$

3) with DC340 contact vaseline

The marking key is on page 22.

Air heatsinks for single side tablet type devices cooling

Features:

- Air heatsinks for natural and forced cooling
- Suitable for capsule packages up to 70 mm diameter
- Custom-made products available



Heatsink	For case	Max. case diameter	R _{thha} for cooling		R _{thch}		m	F _m
			Natural ¹⁾	Forced ²⁾	DC340 ³⁾	TECOFOIL ⁴⁾		
		[mm]	[K/W]	[K/W]	[K/W]	[K/W]	[kg]	[kN]
L 65 typ 30.2	P20, P30, P29C	52,5	0,89	0,27	0,03	0,024	1,22	5; 7
L 100 typ 29.2	P20, P30, P29C	52,5	0,79	0,22	0,03	0,024	1,72	5; 7
L 140 typ 36.2	P20, P30, P29C	52,5	0,68	0,18	0,045	0,034	2,27	5; 7
M 100 typ 122.2-07	P30, P29C	52,5	0,84	0,19	0,03	0,024	1,62	7
M 150 typ 123.2-05	P20	47	0,89	0,182	0,055	0,042	2,68	5
M 150 typ 123.2-07	P30	70	0,81	0,175	0,03	0,024	2,68	7
M 150 typ 123.2-10	P34, P29C	70	0,79	0,17	0,028	0,022	2,79	9; 10
M 150 typ 123.2-15	P40	70	0,75	0,16	0,024	0,02	2,79	15

1) for temperature rise of heatsink vs. ambient $\Delta T_{ha} = 50 \text{ K}$

2) for coolant flow velocity $v_h = 6 \text{ m/s}$

3) with DC340 contact vaseline

4) with appropriate TECOFOIL contact pad

The marking key is on page 22

Air heatsinks for double side tablet type devices cooling

Features:

- Air heatsinks for natural and forced cooling
- Suitable for capsule packages up to 102 mm diameter
- Custom-made products available



Heatsink	For case	Max. case diameter	R _{thha} for cooling		R _{thc}		m	F _m
			Natural ¹⁾	Forced ²⁾	DC340 ³⁾	TECOFOIL ⁴⁾		
		[mm]	[K/W]	[K/W]	[K/W]	[K/W]	[kg]	[kN]
E 130 typ 70.2	P34, P40	76	0,29	0,068	0,01	0,008	6,99	10; 15
E 200 typ 69.2	P34, P40	76	0,28	0,057	0,01	0,008	10,35	10; 15
M 100 typ 15.2-05	P20	50	0,5	0,12	0,03	0,025	2,80	5
M 100 typ 15.2-07	P30	50	0,42	0,096	0,018	0,015	2,85	7
M 150 typ 16.2-05	P20	76	0,45	0,1	0,03	0,025	4,20	5
M 150 typ 16.2-07	P30	76	0,42	0,096	0,015	0,012	4,25	7
M 150 typ 16.2-10	P29C, P34	76	0,4	0,09	0,014	0,011	4,30	10
M 150 typ 16.2-15	P40	76	0,38	0,081	0,01	0,008	4,50	15
M 150 typ 17.2-24	P47	102	0,36	0,077	0,006	0,005	5,79	24
M 150 typ 18.2 -24	P47	102	0,36	0,07	0,014	0,011	6,62	24
U 200 typ 151.2-50	P63, P60	102	0,20	0,06	0,006	0,005	7,6	50
W 200 typ 161.2-50	P63, P60	102	0,12	0,09	0,006	0,005	11,8	50

1) for temperature rise of heatsink vs. ambient $\Delta T_{ha} = 50$ K

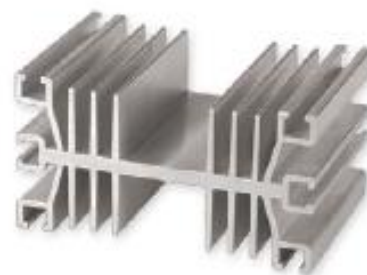
2) for coolant flow velocity $v_h = 6$ m/s

3) with DC340 contact vaseline DC340

4) with appropriate TECOFOIL contact pad

The marking key is on page 22

Air heatsinks for modules



Features:

- Air heatsinks for natural and forced cooling
- Suitable for various types of insulated modules
- Custom-made products available

Heatsink	For case	R _{thha} for cooling		R _{thch}		m	M _m
		Natural ¹⁾	Forced ²⁾	DC340 ³⁾⁴⁾	TECOFOIL ³⁾⁵⁾		
		[K/W]	[K/W]	[K/W]	[K/W]	[kg]	[Nm]
L 65 typ 31.2	431	0,79	0,280	0,10	0,05	0,845	4
L 65 typ 31.2	442; 442S	0,79	0,280	0,09	0,05	0,845	4
L 100 typ 33.2	431	0,76	0,220	0,10	0,05	1,300	4
L 100 typ 33.2	442; 442S	0,76	0,220	0,09	0,05	1,300	4
L 140 typ 34.2	431	0,65	0,185	0,10	0,05	1,820	4
L 140 typ 34.2	442;442S	0,65	0,185	0,09	0,05	1,820	4
L 280 typ 35.2	431	0,51	0,170	0,10	0,05	3,640	4
L 280 typ 35.2	442;442S	0,51	0,170	0,09	0,05	3,640	4
Q 120 typ 117.2	431	0,53	0,155	0,10	0,05	2,300	4
Q 120 typ 117.2	442;442S	0,53	0,155	0,09	0,05	2,300	4
Q 180 typ 117.2	431	0,48	0,130	0,10	0,05	3,400	4
Q 180 typ 117.2	442;442S	0,48	0,130	0,09	0,05	3,400	4
T 30 typ 136,0	SOT227	3,25	-	0,10	-	0,075	2
T 50 typ 137,0	SOT227	2,40	-	0,10	-	1,130	2
T 90 typ 138,0	SOT227 ⁶⁾	1,80	-	0,10	-	0,240	2
R 40 typ 130.0	SOT227	2,00	-	0,10	-	0,220	2
R 80 typ 131.0	SOT227 ⁶⁾	1,33	-	0,10	-	0,440	2
R 80 typ 132.0	SOT227	1,34	-	0,10	-	0,440	2
Y 80 typ 142.0	SOT227 ⁶⁾	1,10	0,450	0,10	-	0,930	2
Y 120 typ 144.0	SOT227 ⁶⁾	0,95	0,350	0,10	-	1,220	2
Y 160 typ 143.0	SOT227 ⁷⁾	0,86	0,270	0,10	-	1,800	2
Y 220 typ 145.0	SOT227 ⁷⁾	0,68	0,210	0,10	-	2,330	2

1) for temperature rise of heatsink vs. ambient $\Delta T_{ha} = 50$ K

2) for coolant flow velocity $v_h = 6$ m/s

3) for case 431, 442, 442S - value for one chip, for case SOT227 - total value

4) with DC340 contact vaseline

5) with appropriate TECOFOIL contact pad

6) for 2 components

7) for 3 components

The marking key is on page 22.

Heatsinks with heat pipes

Features:

- Possibility of separation of space with devices from cooling air tunnel
- Operating temperature range – 40 ÷ 80°C
- Excellent cooling properties
- Designed for forced cooling
- Operating position 0° ÷ 75° from upright position
- Custom-made products available



Heatsink	For case	Max. case diameter	Max. electrode diameter	Q _h coolant flow rate	R _{thha} pro for forced cooling ¹⁾	R _{thch}		m	F _m
						DC340 ⁵⁾	TECOFOIL ⁶⁾		
		[mm]	[mm]	[m ³ /hod]	[K/W]	[K/W]	[K/W]	[kg]	[kN]
ALTRA 60/1	P34, P40	70	39	200	0,085 ²⁾	0,020	0,016	1,02	5-15
ALTRA 60/2	P34, P40, P47	75	47	400	0,070 ³⁾	0,020	0,016	1,72	5-15
ALTRA 60/2	P60, P63	100	63	400	0,060 ³⁾	0,012	0,010	1,72	15-30
ALTRA 100/2	-	175	100	600	0,060 ⁴⁾	0,060	0,004	2,5	30-100

1) value for single side cooling

2) for coolant flow velocity Q_h = 200 m³/h, heatsink output P_h = 500 W

3) for coolant flow velocity Q_h = 400 m³/h, heatsink output P_h = 800 W

4) for coolant flow velocity Q_h = 600 m³/h, heatsink output P_h = 1400 W

5) with DC340 contact vaseline

6) with appropriate TECOFOIL contact pad

7) according to the type of applied device

Liquid cooled heatsinks

Features:

- Well proven heatsinks for capsule package devices
- Suitable for various coolants (water, oil)
- Excellent cooling properties



Heatsink	Max. case diameter	Max. electrode diameter	R _{thha} for forced cooling ¹⁾	R _{thch} ⁴⁾		m	Max. F _m
				DC340 ²⁾	TECOFOIL ³⁾		
	[mm]	[mm]	[K/W]	[K/W]	[K/W]	[kg]	[kN]
K2 typ 92.7-01	78	47	0,0130	0,0070	0,0056	2,02	15
K2 typ 92.8-01	107	63	0,0130	0,0045	0,0035	4,32	50
K2 typ 92.8-02	107	63	0,0130	0,0045	0,0035	3,02	50

1) coolant flow velocity Q_h = 6 l/min, water coolant

2) with DC340 contact vaseline

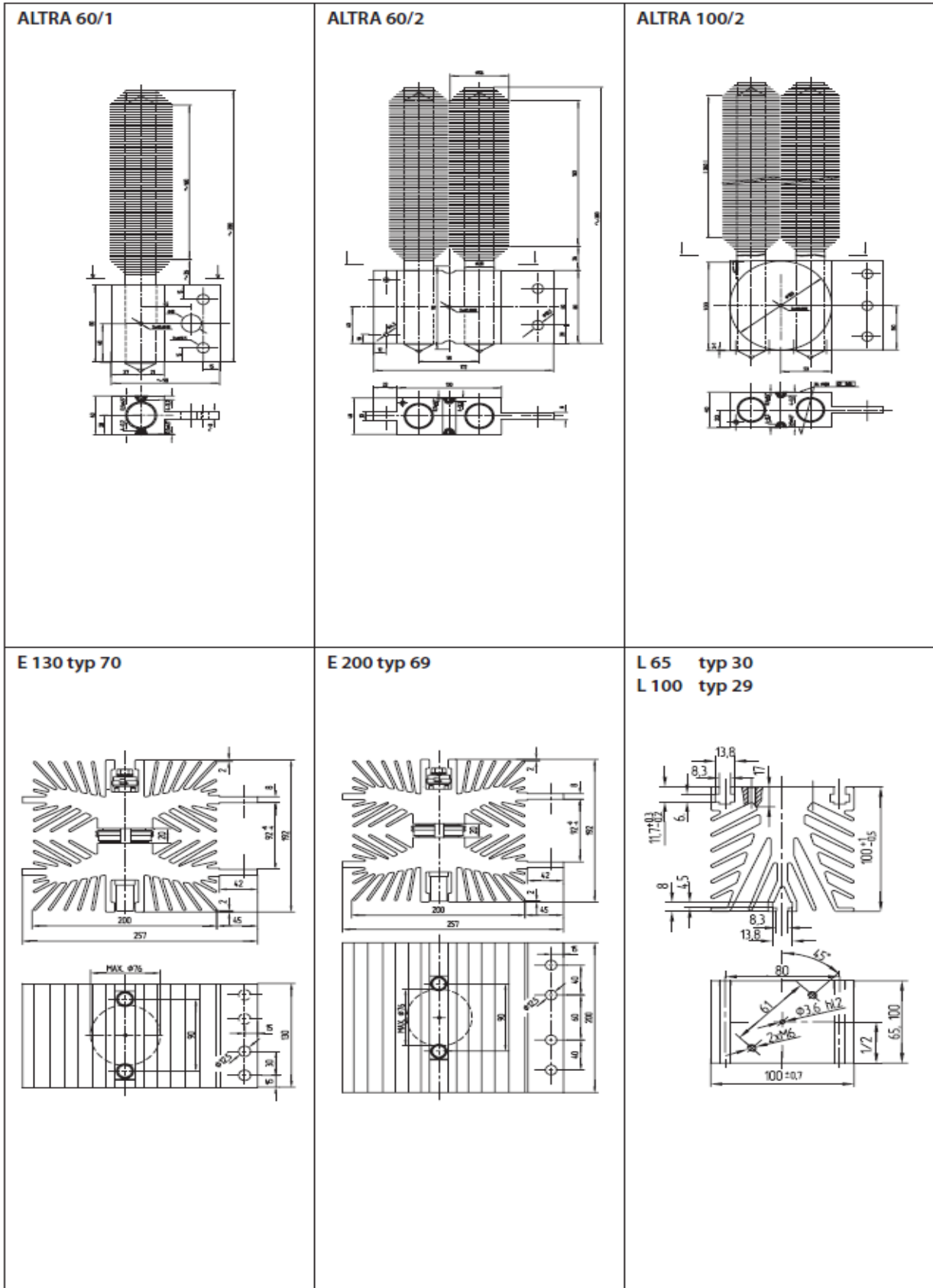
3) with appropriate TECOFOIL contact pad

4) for max. electrode diameter

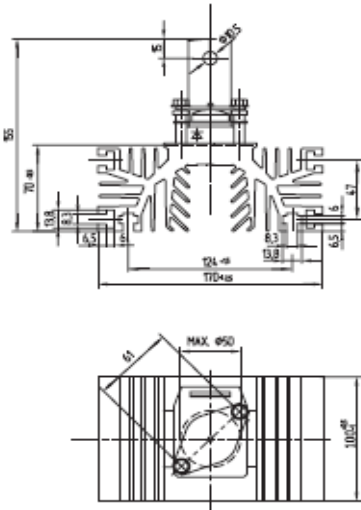
The marking key is on page 22.

Dimensions of air heatsinks

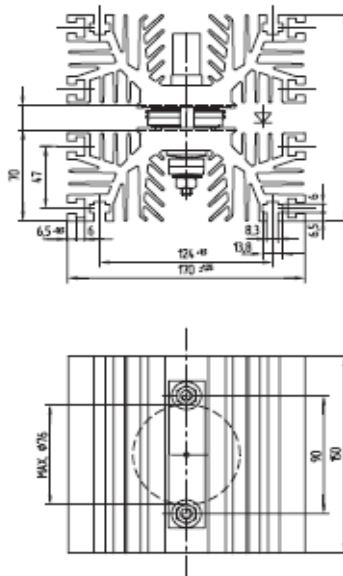
<p>L 65 typ 31 L 100 typ 33 L 140 typ 34 L 280 typ 35</p>	<p>L 65 typ 37</p>	<p>L 65 typ 38 L 100 typ 63 L 140 typ 61</p>
<p>L 65 typ 39 L 100 typ 62 L 140 typ 60</p>	<p>L 140 typ 36</p>	<p>M 100 typ 15</p>



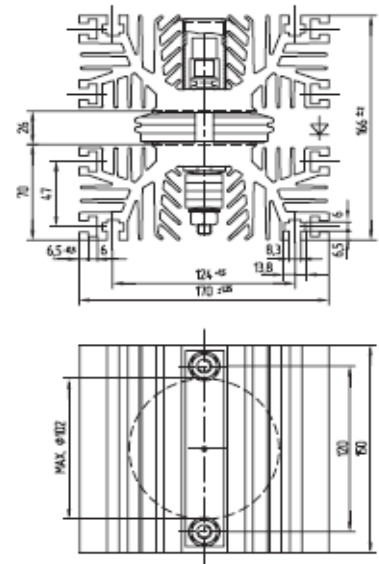
M 100 typ 122



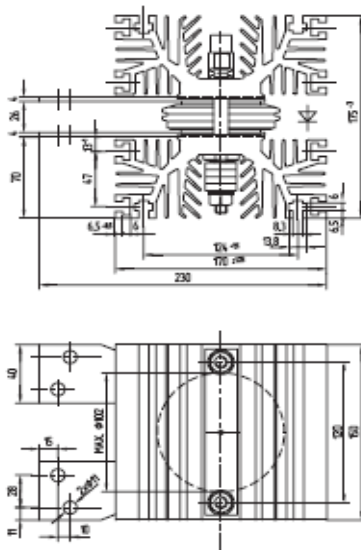
M 150 typ 16



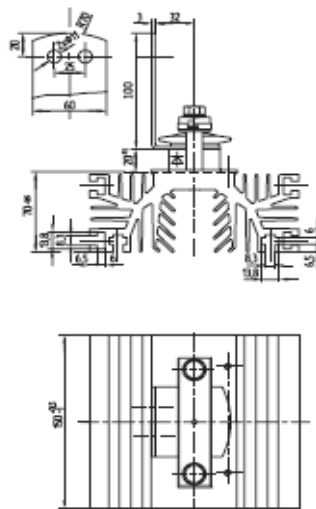
M 150 typ 17



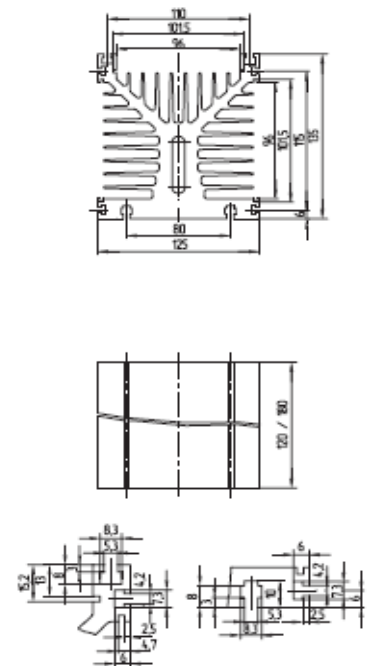
M 150 typ 18



M 150 typ 123

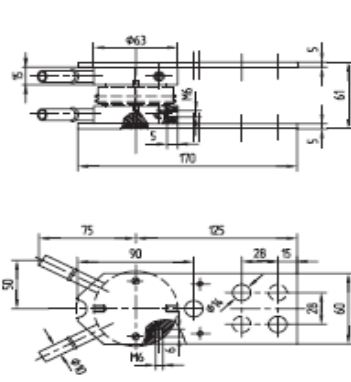
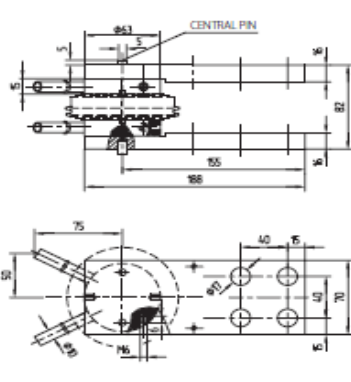
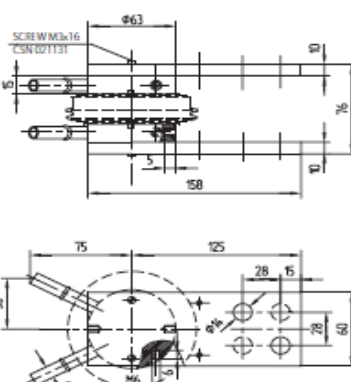


Q 120 typ 117
Q 180 typ 118



<p>R 40 typ 130 R 80 typ 131 R 80 typ 132</p>	<p>T 30 typ 136 T 50 typ 137 T 90 typ 138</p>	<p>U 200 typ 151</p>
<p>W 200 typ 161</p>	<p>Y 80 typ 142 Y 120 typ 144</p>	<p>Y 160 typ 143 Y 220 typ 145</p>

Dimensions of liquid heatsinks

K 2 typ 92.7-01	K 2 typ 92.8-01	K 2 typ 92.8-02
 <p>Technical drawing of K 2 typ 92.7-01 liquid heatsink. The side view shows a diameter of $\Phi 63$ and a total length of 170. The top view shows a circular base with a diameter of 90 and a mounting hole diameter of $\Phi 16$. Other dimensions include 75, 125, 28, 15, 28, and 60.</p>	 <p>Technical drawing of K 2 typ 92.8-01 liquid heatsink. The side view shows a diameter of $\Phi 63$, a central pin, and a total length of 168. The top view shows a circular base with a diameter of 90 and a mounting hole diameter of $\Phi 16$. Other dimensions include 75, 40, 15, 28, and 60.</p>	 <p>Technical drawing of K 2 typ 92.8-02 liquid heatsink. The side view shows a diameter of $\Phi 63$, a screw labeled "SCREW M3x16 CSN107131", and a total length of 158. The top view shows a circular base with a diameter of 90 and a mounting hole diameter of $\Phi 16$. Other dimensions include 75, 125, 28, 15, 28, and 60.</p>

Mounting clamps for double-sided cooling

Features:

- Types for all capsule cases with diameter up to 180 mm
- Mounting forces up to 60 kN.
- Mounting force indicator included
- Some types allow clamping of multiple devices



Type	F _m	Max. diameter of case	H	Bolts and nuts	V _h	m
	[kN]	[mm]	[mm]		[kV]	[kg]
MCD 354.05A05-090.070/063 ¹⁾	5	63	70	M10	5	1,320
MCD 354.07A05-090.070/063 ¹⁾	7	63	70	M10	5	1,320
MCD 354.09A05-090.070/063 ¹⁾	9	63	70	M10	5	1,320
MCD 354.10A05-090.070/063 ¹⁾	10	63	70	M10	5	1,320
MCD 354.11A05-090.070/063 ¹⁾	11	63	70	M10	5	1,320
MCD 354.15A05-090.070/063 ¹⁾	15	63	70	M10	5	1,360
MCD 355.30A05-120.286/102	30	102	286	M12x1,25	5	3,690
MCD 355.30B07-120.286/102	30	102	286	M12x1,25	7	3,830
MCD 355.30A05-120.426/102	30	102	426	M12x1,25	5	3,970
MCD 355.30B07-120.426/102	30	102	426	M12x1,25	7	4,110
MCD 356.30A05-120.082/096 ²⁾	30	96	82	M12x1,25	5	3,700
MCD 356.30B07-120.082/096 ²⁾	30	96	82	M12x1,25	7	4,020
MCD 356.30A05-120.087/096 ²⁾	30	96	87	M12x1,25	5	3,710
MCD 356.30B07-120.087/096 ²⁾	30	96	87	M12x1,25	7	4,700
MCD 356.30E07-120.XXX/096 ³⁾	30	96	-	(M12x1,25) ⁴⁾	7	-
MCD 358.40A07-140.076/120	40	120	76	M12x1,25	7	6,080
MCD 358.40A07-140.XXX/120 ³⁾	40	120	-	(M12x1,25) ⁴⁾	7	-
MCD 358.40B07-140.XXX/120 ³⁾	40	120	-	(M12x1,25) ⁴⁾	7	-
MCD 359.40A07-160.076/140	40	140	76	M12x1,25	7	6,640
MCD 359.40A07-160.XXX/140 ³⁾	40	140	-	(M12x1,25) ⁴⁾	7	-
MCD 359.40B07-160.XXX/140 ³⁾	40	140	-	(M12x1,25) ⁴⁾	7	-
MCD 360.15A05-120.060/107	15	107	60	M10	5	1,100
MCD 360.20A05-120.060/107	20	107	60	M10	5	1,100
MCD 360.22A05-120.060/107	22	107	60	M10	5	1,250
MCD 360.24A05-120.060/107	24	107	60	M10	5	1,250
MCD 360.15A05-120.XXX/107 ³⁾	15	107	-	(M10)	5	-

Type	F _m	Max. diameter of case	H	Bolts and nuts	V _h	m
	[kN]	[mm]	[mm]		[kV]	[kg]
MCD 360.20A05-120.XXX/107 ³⁾	20	107	-	(M10) ⁴	5	-
MCD 360.22A05-120.XXX/107 ³⁾	22	107	-	(M10) ⁴	5	-
MCD 360.24A05-120.XXX/107 ³⁾	24	107	-	(M10) ⁴	5	-
MCD 361.05A05-090.052/078	5	78	52	M8	5	0,310
MCD 361.07A05-090.052/78	7	78	52	M8	5	0,350
MCD 361.09A05-090.052/78	09	78	52	M8	5	0,350
MCD 361.10A05-090.052/78	10	78	52	M8	5	0,350
MCD 361.11A05-090.052/78	11	78	52	M8	5	0,350
MCD 361.15A05-090.052/78	15	78	52	M8	5	0,390
MCD 361.05A05-090.XXX/078 ³⁾	5	78	-	(M8) ⁴	5	-
MCD 361.07A05-090.XXX/78 ³⁾	7	78	-	(M8) ⁴	5	-
MCD 361.09A05-090.XXX/78 ³⁾	09	78	-	(M8) ⁴	5	-
MCD 361.10A05-090.XXX/78 ³⁾	10	78	-	(M8) ⁴	5	-
MCD 361.11A05-090.XXX/78 ³⁾	11	78	-	(M8) ⁴	5	-
MCD 361.15A05-090.XXX/78 ³⁾	15	78	-	(M8) ⁴	5	-
MCD 362.03A05-061.052/047	3	47	52	M6	5	0,125
MCD 362.05A05-061.052/047	5	47	52	M6	5	0,140
MCD 362.07A05-061.052/047	7	47	52	M6	5	0,140
MCD 362.03A05-061.XXX/047 ³⁾	3	47	-	(M6) ⁴	5	-
MCD 362.05A05-061.XXX/047 ³⁾	5	47	-	(M6) ⁴	5	-
MCD 362.07A05-061.XXX/047 ³⁾	7	47	-	(M6) ⁴	5	-
MCD 370.50A07-200.086/180	50	180	86	M14x1,5		7,260
MCD 370.50A07-200.XXX/180 ³⁾	50	180	-	(M14x1,5) ⁴		-
MCD 370.50B07-200.XXX/180 ³⁾	50	180	-	(M14x1,5) ⁴		-
MCD 370.50A07-180.086/160	50	160	86	M14x1,5		6,760
MCD 370.50A07-180.XXX/160 ³⁾	50	160	-	(M14x1,5) ⁴		-
MCD 370.50B07-180.XXX/160 ³⁾	50	160	-	(M14x1,5) ⁴		-
MCD 370.50A07-160.XXX/140 ³⁾	50	140	-	(M14x1,5) ⁴		-
MCD 370.50B07-160.XXX/140 ³⁾	50	140	-	(M14x1,5) ⁴		-
MCD 370.50A07-140.XXX/120 ³⁾	50	120	-	(M14x1,5) ⁴		-
MCD 370.50B07-140.XXX/120 ³⁾	50	120	-	(M14x1,5) ⁴		-
MCD 370.60A07-200.086/180	60	180	86	M14x1,5		7,260
MCD 370.60A07-200.XXX/180 ³⁾	60	180	-	(M14x1,5) ⁴		-
MCD 370.60B07-200.XXX/180 ³⁾	60	180	-	(M14x1,5) ⁴		-
MCD 370.60A07-180.086/160	60	160	86	M14x1,5		6,760

Type	F _m	Max. diameter of case	H	Bolts and nuts	V _n	m
	[kN]	[mm]	[mm]		[kV]	[kg]
MCD 370.60A07-180.XXX/160 ³⁾	60	160	-	(M14x1,5) ⁴		-
MCD 370.60B07-180.XXX/160 ³⁾	60	160	-	(M14x1,5) ⁴		-
MCD 370.60A07-160.XXX/140 ³⁾	60	140	-	(M14x1,5) ⁴		-
MCD 370.60B07-160.XXX/140 ³⁾	60	140	-	(M14x1,5) ⁴		-
MCD 370.60A07-140.XXX/120 ³⁾	60	120	-	(M14x1,5) ⁴		-
MCD 370.60B07-140.XXX/120 ³⁾	60	120	-	(M14x1,5) ⁴		-
MCD 372.50A05-120.078/102	50	102	78	M12x1,25	5	3,350
MCD 372.50A05-120.086/102	50	102	86	M12x1,25	5	3,370
MCD 372.50A05-120.XXX/102 ³⁾	50	102	-	(M12x1,25) ⁴	5	-

1) for liquid heatsink type K2 92.7

2) for liquid heatsink type K2 typ 92.8

3) for multiple devices, supplies without bolts or with custom-made bolts length

4) recommended bolt (nut) – they are not part of regular delivery

Strength class is 8.8 (for MCD 362 type is 5.6)

The marking key is on page 22.

Mounting clamps for one-sided cooling

Features:

- Types for all capsule cases with diameter up to 63 mm
- Mounting forces up to 15 kN
- Some types include mounting force indicator



Type	F _m	Max. diameter of case	H	Bolts and nuts	V _n	m
	[kN]	[mm]	[mm]		[kV]	[kg]
MCS 351.05A05-090.030/063 ³⁾	5	63	30	M10	5	0,660
MCS 351.07A05-090.030/063 ³⁾	7	63	30	M10	5	0,660
MCS 351.09A05-090.030/063 ³⁾	9	63	30	M10	5	0,660
MCS 351.10A05-090.030/063 ³⁾	10	63	30	M10	5	0,660
MCS 351.11A05-090.030/063 ³⁾	11	63	30	M10	5	0,660
MCS 351.15A05-090.030/063 ³⁾	15	63	30	M10	5	0,660
MCS 353.03B05-061.020/047	3	47	20	M6	5	0,319
MCS 353.03A05-061.022/047	3	47	22	M6	5	0,198
MCS 353.05A05-061.022/047	5	47	22	M6	5	0,208
MCS 353.07A05-061.022/047	7	47	22	M6	5	0,208
MCS 353.05B05-061.020/047 ¹⁾	5	47	20	M6	5	0,330
MCS 353.07B05-061.020/047 ¹⁾	7	47	20	M6	5	0,330
MCS 353.03B05-061.XXX/047 ¹⁾²⁾	3	47	XX	M6	5	0,291
MCS 353.05B05-061.XXX/047 ¹⁾²⁾	5	47	XX	M6	5	0,302
MCS 353.07B05-061.XXX/047 ¹⁾²⁾	7	47	XX	M6	5	0,302
MCS 353.03A05-061.017/047	3	47	17	M6	5	0,194
MCS 353.03B05-061.017/047	3	47	17	M6	5	0,316
MCS 353.05A05-061.017/047	5	47	17	M6	5	0,205
MCS 353.07A05-061.017/047	7	47	17	M6	5	0,205
MCS 353.03A05-061.027/047	3	47	27	M6	5	0,200
MCS 353.05A05-061.027/047	5	47	27	M6	5	0,210
MCS 353.07A05-061.027/047	7	47	27	M6	5	0,210

1) with outlet washer and fastening screw M8

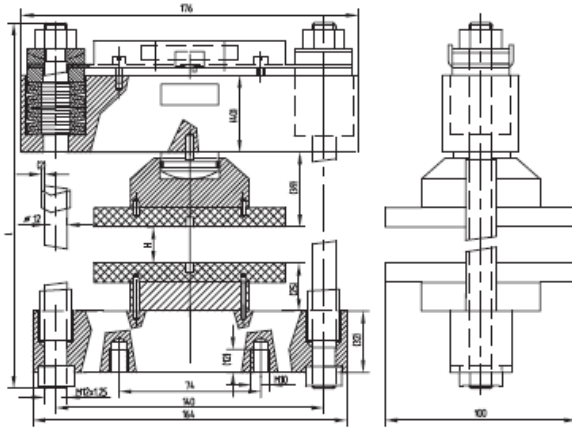
2) for stud bolts, which are not part of regular delivery

3) clamping force indicator included

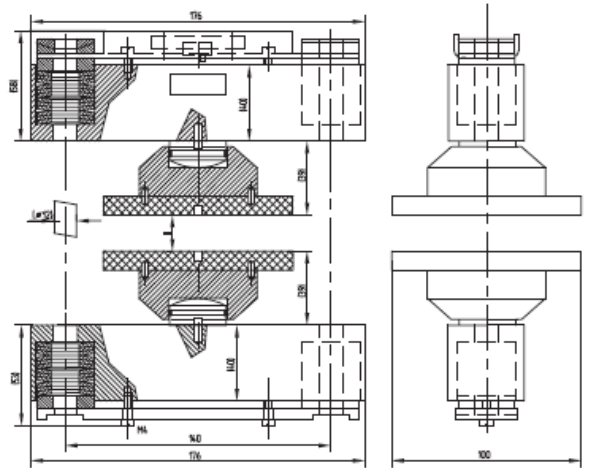
Strength class for screws M6 is 5.6 for M10 it is 8.8

The marking key is on page 22

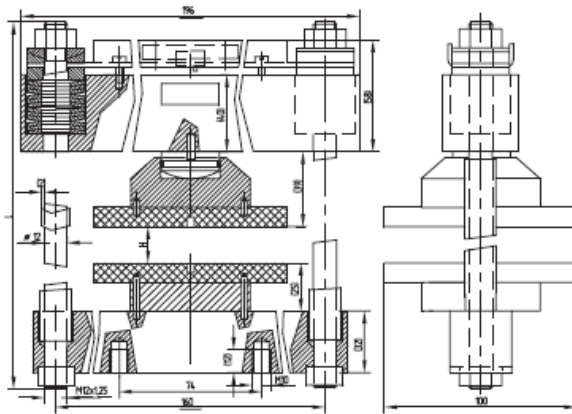
MCD 358._ _ A



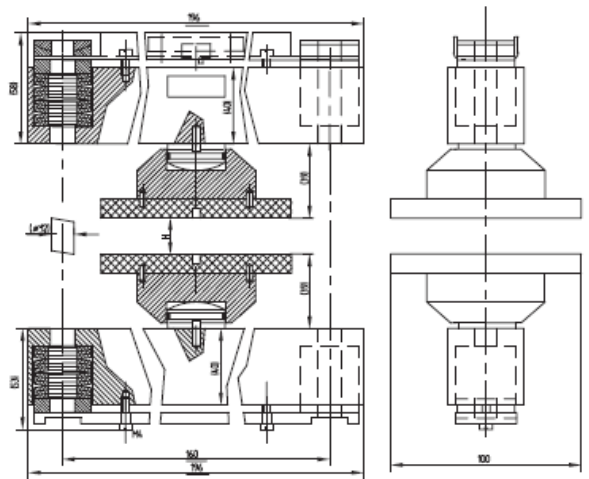
MCD 358._ _ B



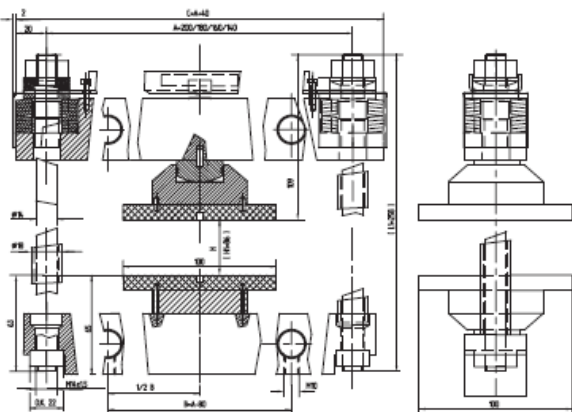
MCD 359._ _ A



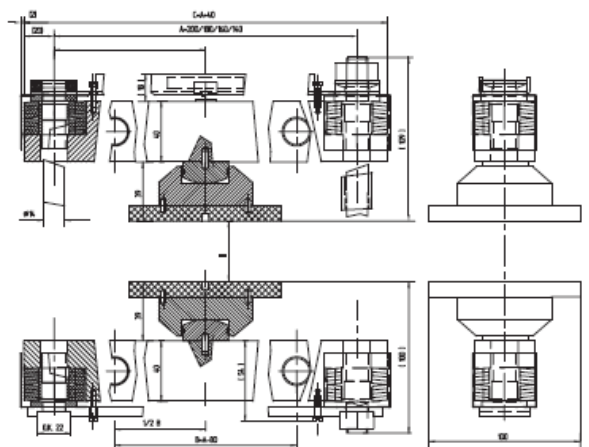
MCD 359._ _ B



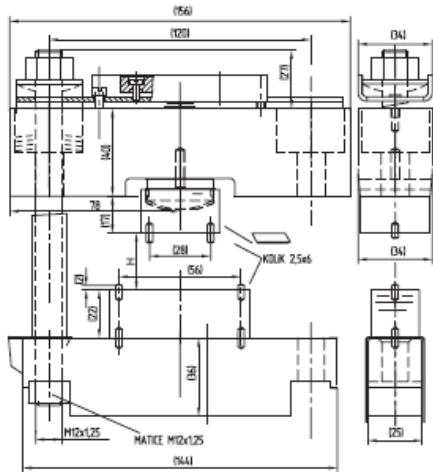
MCD 370._ _ A



MCD 370._ _ B



MCD 372. __ A



Accessories

Features:

- Components for mounting and electric connection of power semiconductor assemblies
- Spare parts for PSU



Products:

- Terminal straps (see page 21)
- Aluminium T-nuts, square nuts, elastic elements (see page 21)
- Flat or annular woven leads
- Mounting insulators of various dimensions
- Overvoltage protection circuits

TECOFOIL contact pads

Features:

- They decrease thermal resistance between device and heatsink
- Good electrical contact
- Long term stability
- Better properties compared to contact vaselines
- Circular pads are determined for tablet type devices
- TECOFOIL thickness is 0,08 – 0,12 mm



Type	Dimensions [mm]	Holes diameter [mm]	Holes distance [mm]	For case
TECOFOIL 29	φ 29	4,0 ¹⁾	-	P29
TECOFOIL 34	φ 34	4,0 ¹⁾	-	P34
TECOFOIL 47	φ 47	4,0 ¹⁾	-	P47
TECOFOIL 63	φ 63	4,0 ¹⁾	-	P63
TECOFOIL 25 x 38	25 x 38	4,3 ²⁾	30	SOT 227
TECOFOIL 20 x 94	20 x 94	6,3 ²⁾	80	431
TECOFOIL 30 x 94	30 x 94	6,3 ²⁾	80	442

1) hole diameter for central pin

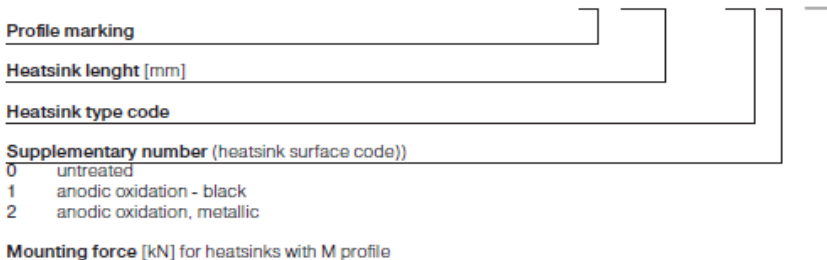
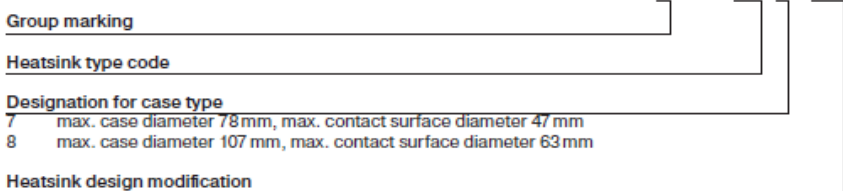
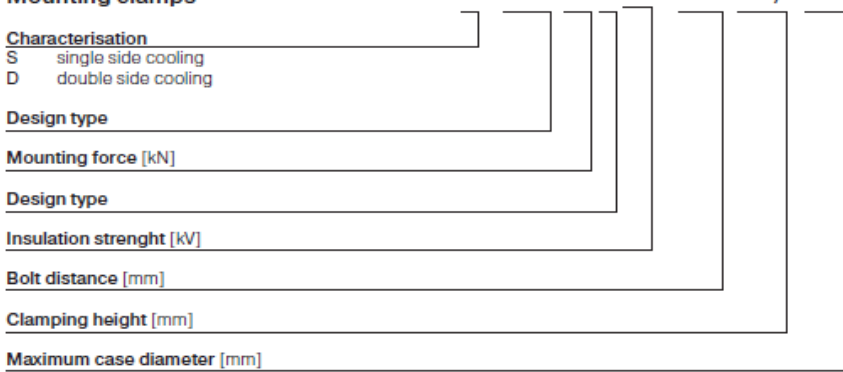
2) holes diameter for fastening screws

Contact pads of various pads and dimenstions can be delivered on special request.

Dimensions of accessories

<p>T nut M6</p>	<p>Four-square nut M8</p>	<p>Terminal straps type 303</p>
<p>Terminal straps type 302</p>	<p>Terminal straps type 317</p>	<p>Elastic element</p>
<p>Nuts fixing mode in heatsinks</p> <p>T-nut M6 — Elastic element</p> <p>Nut M8 CSN 02 1403 CSN 02 1407 CSN 02 1416 — Elastic element</p> <p>Nut M8 CSN 02 1407 CSN 02 1416 — Elastic element</p>		<p>Terminal straps type 316</p>

Marking keys

<p>Air heatsinks M 150 typ 16.2–10</p> <p>Profile marking</p> <p>Heatsink length [mm]</p> <p>Heatsink type code</p> <p>Supplementary number (heatsink surface code) 0 untreated 1 anodic oxidation - black 2 anodic oxidation, metallic</p> <p>Mounting force [kN] for heatsinks with M profile</p>	
<p>Liquid heatsinks K 2 typ 82.8–02</p> <p>Group marking</p> <p>Heatsink type code</p> <p>Designation for case type 7 max. case diameter 78 mm, max. contact surface diameter 47 mm 8 max. case diameter 107 mm, max. contact surface diameter 63 mm</p> <p>Heatsink design modification</p>	
<p>Mounting clamps MCD 358.40A07–140.076/120</p> <p>Characterisation S single side cooling D double side cooling</p> <p>Design type</p> <p>Mounting force [kN]</p> <p>Design type</p> <p>Insulation strenght [kV]</p> <p>Bolt distance [mm]</p> <p>Clamping height [mm]</p> <p>Maximum case diameter [mm]</p>	

Symbols

H	clamping height of mounting clamp
m	weight
M_m	mounting torque
P_h	heatsink output
P_{max}	maximum power dissipation
Q_h	coolant flow rate
R_{thha}	thermal resistance heatsink vs. ambient
R_{thch}	contact thermal resistance case to ambient
T_c	case temperature
ΔT_{ha}	temperature difference between heatsink and ambient
v_h	coolant flow velocity
V_h	insulation strength of mounting clamp

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