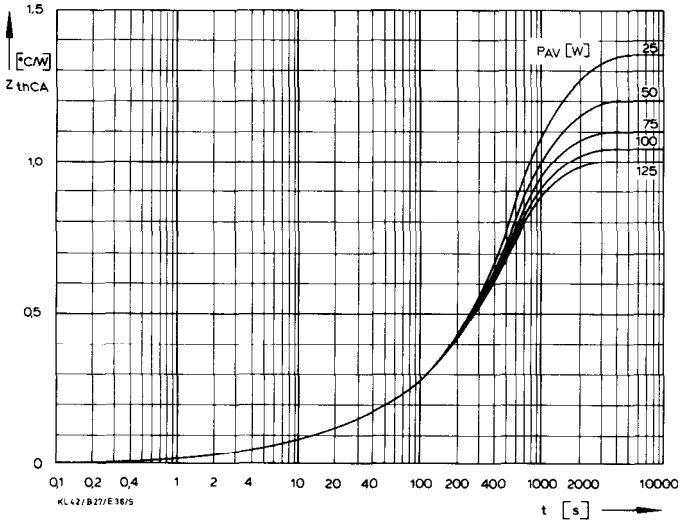
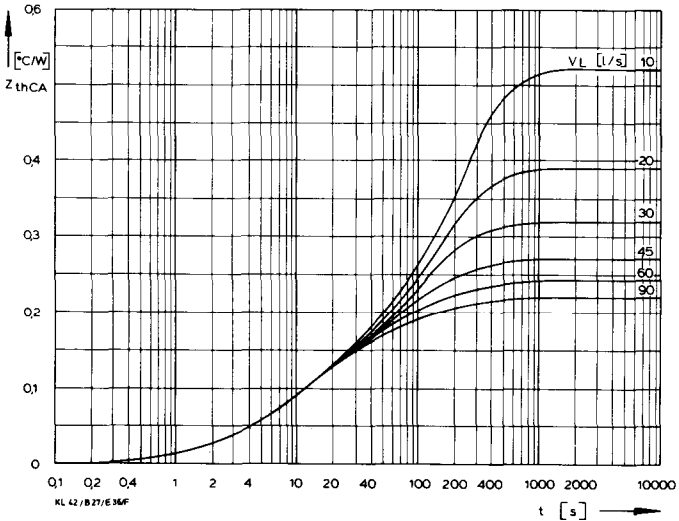


Kühlkörper: Transienter Wärmewiderstand und thermisches Ersatzschaltbild  
 Heatsinks: Transient thermal impedance and thermal equivalent circuit



Kühlkörper K1.1-M12-A/Thyristorgehäuse DIN 41892 204 B3 (Gewinde M12)/  
 Luftselbstkühlung  
 Heatsink K1.1-M12-A/thyristor case DIN 41892 204 B3 (thread M12)/  
 natural air-cooling  
 Parameter: Verlustleistung/Power dissipation  $P_{AV}$

$P_{AV} = 25 \text{ W}$	$R_{th} [^{\circ}\text{C}/\text{W}]$	0,0062	0,104	0,0198	1,22	
$Z_{thCA}$	$\tau [s]$	2,93	9,75	292	671	
$P_{AV} = 50 \text{ W}$	$R_{th} [^{\circ}\text{C}/\text{W}]$	0,0062	0,104	0,0198	1,07	
$Z_{thCA}$	$\tau [s]$	2,93	9,75	292	588	
$P_{AV} = 75 \text{ W}$	$R_{th} [^{\circ}\text{C}/\text{W}]$	0,0062	0,104	0,0228	0,967	
$Z_{thCA}$	$\tau [s]$	2,93	9,75	292	533	
$P_{AV} = 100 \text{ W}$	$R_{th} [^{\circ}\text{C}/\text{W}]$	0,0062	0,104	0,0228	0,907	
$Z_{thCA}$	$\tau [s]$	2,93	9,75	292	500	
$P_{AV} = 125 \text{ W}$	$R_{th} [^{\circ}\text{C}/\text{W}]$	0,0062	0,104	0,0238	0,866	
$Z_{thCA}$	$\tau [s]$	2,93	9,75	292	478	

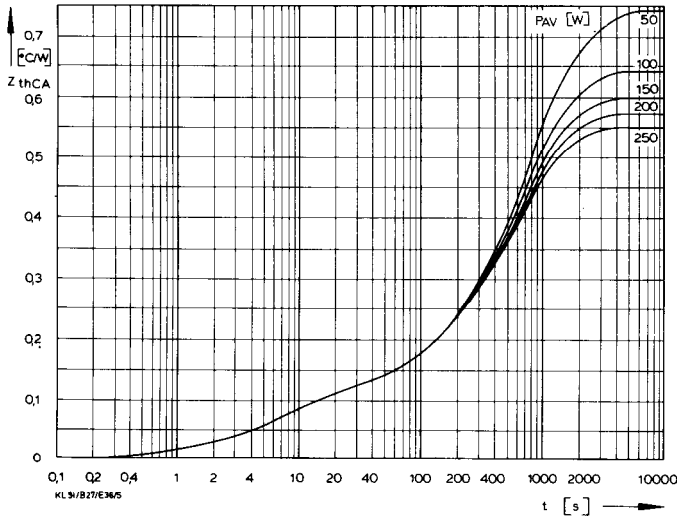


Kühlkörper K1.1-M12-A/Thyristorgehäuse DIN 41892 204 B3 (Gewinde M12)/  
 verstärkte Luftkühlung  
 Heatsink K1.1-M12-A/thyristor case DIN 41892 204 B3 (thread M12)/  
 forced air-cooling  
 Parameter: Luftmenge/air volume  $V_L$

$V_L = 10 \text{ l/s}$	$R_{th} [^{\circ}\text{C}/\text{W}]$	0,0062	0,104	0,387	0,0228	
$Z_{thCA}$	$\tau [s]$	2,93	9,75	213	292	
$V_L = 20 \text{ l/s}$	$R_{th} [^{\circ}\text{C}/\text{W}]$	0,0062	0,104	0,257	0,0228	
$Z_{thCA}$	$\tau [s]$	2,93	9,75	142	292	
$V_L = 30 \text{ l/s}$	$R_{th} [^{\circ}\text{C}/\text{W}]$	0,0062	0,104	0,187	0,0228	
$Z_{thCA}$	$\tau [s]$	2,93	9,75	103	292	
$V_L = 45 \text{ l/s}$	$R_{th} [^{\circ}\text{C}/\text{W}]$	0,0062	0,104	0,137	0,0228	
$Z_{thCA}$	$\tau [s]$	2,93	9,75	75,5	292	
$V_L = 60 \text{ l/s}$	$R_{th} [^{\circ}\text{C}/\text{W}]$	0,0062	0,104	0,107	0,0228	
$Z_{thCA}$	$\tau [s]$	2,93	9,75	58,8	292	
$V_L = 90 \text{ l/s}$	$R_{th} [^{\circ}\text{C}/\text{W}]$	0,0062	0,104	0,0867	0,0231	
$Z_{thCA}$	$\tau [s]$	2,93	9,75	47,8	292	

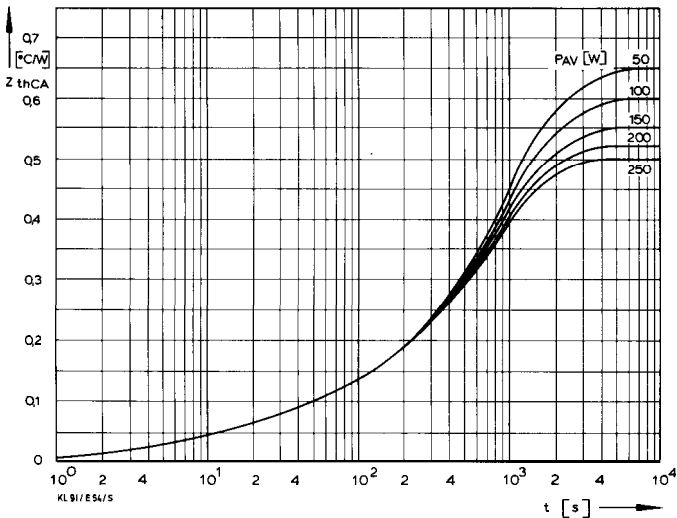
# Kühlkörper: Transienter Wärmewiderstand und thermisches Ersatzschaltbild

## Heatsinks: Transient thermal impedance and thermal equivalent circuit



Kühlkörper K0.55-M12-A/Thyristorgehäuse DIN 41892 204 B3 (Gewinde M12)/  
Luftselbstkühlung  
Heatsink K0.55-M12-A/thyristor case DIN 41892 204 B3 (thread M12)/  
natural air-cooling  
Parameter: Verlustleistung/Power dissipation  $P_{AV}$

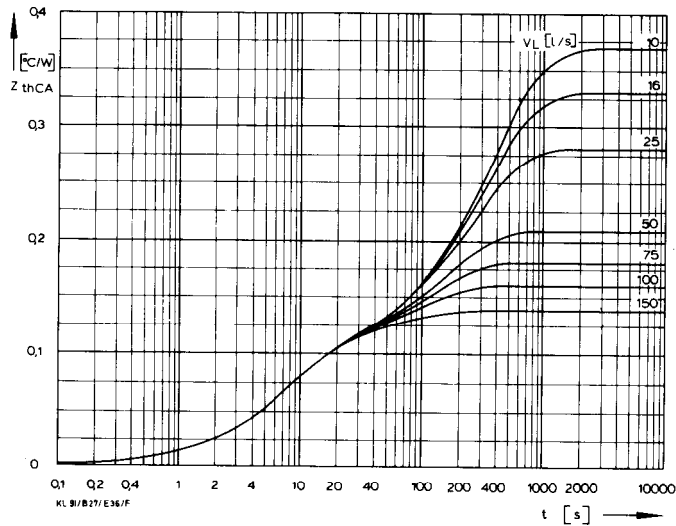
$P_{AV} = 50 \text{ W}$	$R_{th}$ [°C/W]	0,105	0,635		
$Z_{thCA}$	$\tau$ [s]	7,54	827		
$P_{AV} = 100 \text{ w}$	$R_{th}$ [°C/W]	0,105	0,535		
$Z_{thCA}$	$\tau$ [s]	7,54	697		
$P_{AV} = 150 \text{ W}$	$R_{th}$ [°C/W]	0,105	4,495		
$Z_{thCA}$	$\tau$ [s]	7,54	645		
$P_{AV} = 200 \text{ W}$	$R_{th}$ [°C/W]	0,105	0,465		
$Z_{thCA}$	$\tau$ [s]	7,54	606		
$P_{AV} = 250 \text{ W}$	$R_{th}$ [°C/W]	0,105	0,445		
$Z_{thCA}$	$\tau$ [s]	7,54	580		



Kühlkörper K0.55-FB54-A/Thyristorgehäuse DIN 41894 224 A4  
(Flachboden  $\varnothing 54$ )/Luftselbstkühlung  
Heatsink K0.55-FB54-A/thyristor case DIN 41894 224 A4 (flat base  $\varnothing 54$ )/  
natural air-cooling  
Parameter: Verlustleistung/Power dissipation  $P_{AV}$

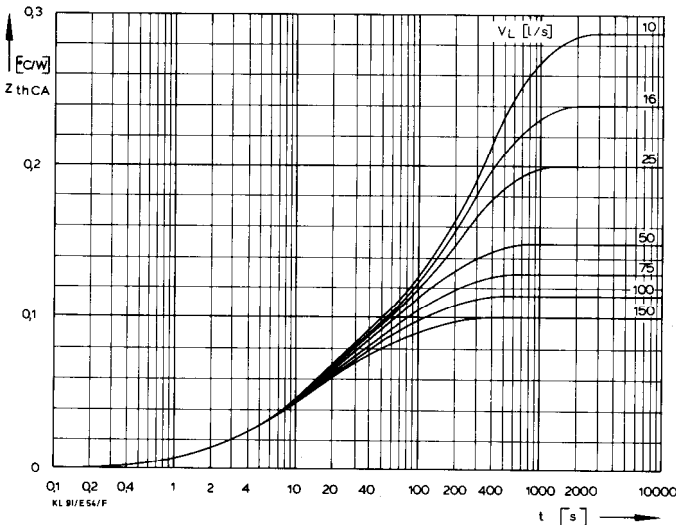
$P_{AV} = 50 \text{ w}$	$R_{th}$ [°C/W]	0,0102	0,0684	0,5814	
$Z_{thCA}$	$\tau$ [s]	3,24	18,2	953	
$P_{AV} = 100 \text{ w}$	$R_{th}$ [°C/W]	0,0082	0,0668	0,0301	0,4949
$Z_{thCA}$	$\tau$ [s]	2,95	16,1	442	910
$P_{AV} = 150 \text{ W}$	$R_{th}$ [°C/W]	0,0042	0,0652	0,0709	0,4096
$Z_{thCA}$	$\tau$ [s]	2,1	13,3	411	860
$P_{AV} = 200 \text{ W}$	$R_{th}$ [°C/W]	0,0062	0,0662	0,0294	0,4182
$Z_{thCA}$	$\tau$ [s]	2,6	14,6	441	759
$P_{AV} = 250 \text{ W}$	$R_{th}$ [°C/W]	0,0061	0,0661	0,0355	0,3923
$Z_{thCA}$	$\tau$ [s]	2,57	14,5	542	705

# Kühlkörper: Transienter Wärmewiderstand und thermisches Ersatzschaltbild Heatsinks: Transient thermal impedance and thermal equivalent circuit



Kühlkörper K0.55-M12-A/Thyristorgehäuse DIN 41892 204 B3 (Gewinde M12)/ verstärkte Luftkühlung  
Heatsink K0.55-M12-A/thyristor case DIN 41892 204 B3 (thread M12)/ forced air-cooling  
Parameter: Luftmenge/air volume  $V_L$

$V_L = 10$ l/s	$R_{th}$ [°C/W]	0,1	0,27		
$Z_{thCA}$	$\tau$ [s]	7,09	370		
$V_L = 16$ l/s	$R_{th}$ [°C/W]	0,1	0,23		
$Z_{thCA}$	$\tau$ [s]	7,09	315		
$V_L = 25$ l/s	$R_{th}$ [°C/W]	0,1	0,18		
$Z_{thCA}$	$\tau$ [s]	7,09	247		
$V_L = 50$ l/s	$R_{th}$ [°C/W]	0,1	0,11		
$Z_{thCA}$	$\tau$ [s]	7,09	151		
$V_L = 75$ l/s	$R_{th}$ [°C/W]	0,1	0,08		
$Z_{thCA}$	$\tau$ [s]	7,09	110		
$V_L = 100$ l/s	$R_{th}$ [°C/W]	0,1	0,06		
$Z_{thCA}$	$\tau$ [s]	7,09	82		
$V_L = 150$ l/s	$R_{th}$ [°C/W]	0,1	0,04		
$Z_{thCA}$	$\tau$ [s]	7,09	55		

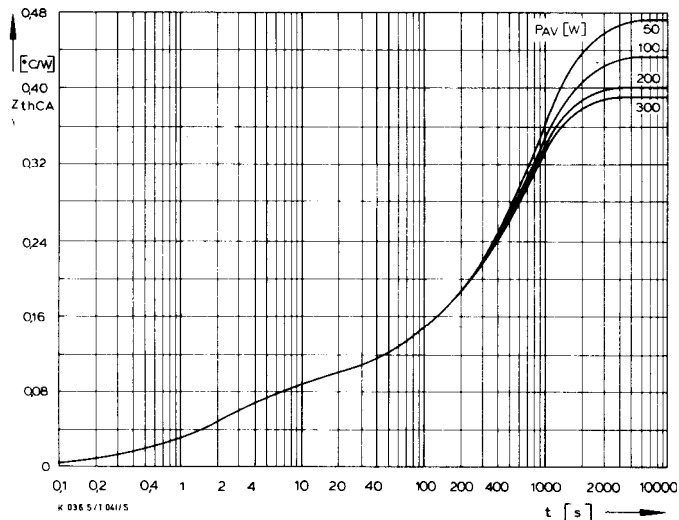


Kühlkörper K0.55-FB54-A/Thyristorgehäuse DIN 41894 224 A4 (Flachboden 0 54)/verstärkte Luftkühlung  
Heatsink K0.55-FB54-A/thyristor case DIN 41894 224 A4 (flat base 0 54)/ forced air-cooling  
Parameter: Luftmenge/air volume  $V_L$

$V_L = 10$ l/s	$R_{th}$ [°C/W]	0,0109	0,0691	0,21	
$Z_{thCA}$	$\tau$ [s]	3,57	17,7	405	
$V_L = 16$ l/s	$R_{th}$ [°C/W]	0,0135	0,0665	0,16	
$Z_{thCA}$	$\tau$ [s]	3,93	18,9	311	
$V_L = 25$ l/s	$R_{th}$ [°C/W]	0,0145	0,0608	0,1247	
$Z_{thCA}$	$\tau$ [s]	4,12	17,8	229	
$V_L = 50$ l/s	$R_{th}$ [°C/W]	0,0148	0,0005	0,054	0,0807
$Z_{thCA}$	$\tau$ [s]	4,26	5,57	16,5	129
$V_L = 75$ l/s	$R_{th}$ [°C/W]	0,0006	0,0228	0,049	0,0576
$Z_{thCA}$	$\tau$ [s]	3,45	5,32	19,6	114
$V_L = 100$ l/s	$R_{th}$ [°C/W]	0,0005	0,0308	0,0461	0,0366
$Z_{thCA}$	$\tau$ [s]	4,11	5,99	25,1	109
$V_L = 150$ l/s	$R_{th}$ [°C/W]	0,0008	0,0458	0,0034	0,05
$Z_{thCA}$	$\tau$ [s]	2,22	7,64	17,7	54,6

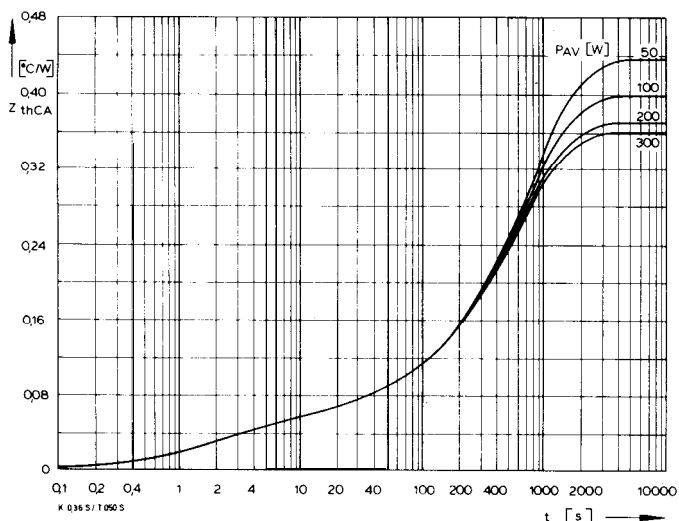
# Kühlkörper: Transienter Wärmewiderstand und thermisches Ersatzschaltbild

## Heatsinks: Transient thermal impedance and thermal equivalent circuit



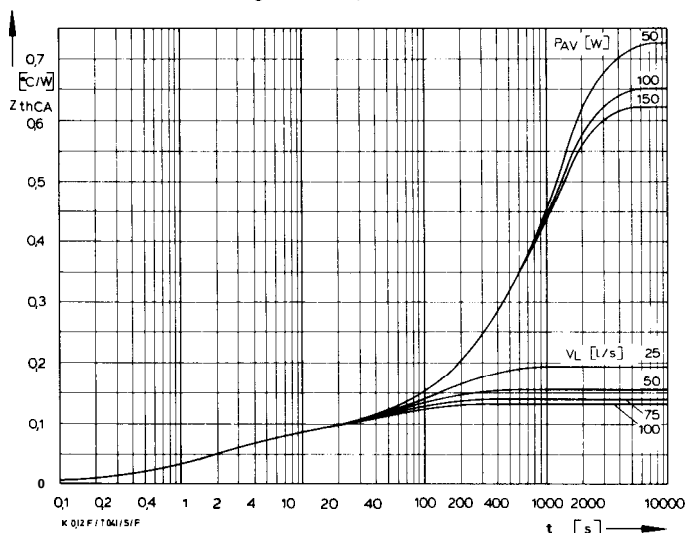
Kühlkörper K0.36S/Thyristorgehäuse DIN 41814 151 A4 (Scheibe 0 41)/  
Luftselbstkühlung  
Heatsink K0.36S/thyristor case DIN 41814 151 A4 (disc 0 41)/  
natural air-cooling  
Parameter: Verlustleistung/Power dissipation  $P_{AV}$

$P_{AV} = 50 \text{ w}$	$R_{th} [^{\circ}\text{C}/\text{W}]$	0,0042	0,063	0,0289	0,0279	0,346	
$Z_{thCA}$	$\tau [s]$	0,0396	1,93	15,7	162	883	
$P_{AV} = 100 \text{ w}$	$R_{th} [^{\circ}\text{C}/\text{W}]$	0,0051	0,0626	0,0315	0,0748	0,256	
$Z_{thCA}$	$\tau [s]$	0,427	2	17,6	363	859	
$P_{AV} = 200 \text{ w}$	$R_{th} [^{\circ}\text{C}/\text{W}]$	0,0059	0,0622	0,0331	0,0467	0,253	
$Z_{thCA}$	$\tau [s]$	0,479	2	18,9	532	657	
$P_{AV} = 300 \text{ w}$	$R_{th} [^{\circ}\text{C}/\text{W}]$	0,0056	0,062	0,0334	0,059	0,23	
$Z_{thCA}$	$\tau [s]$	0,471	1,99	18	580	637	



Kühlkörper K0.36S/Thyristorgehäuse DIN 41814 152 A4 (Scheibe 0 50)/  
Luftselbstkühlung  
Heatsink K0.36S/thyristor case DIN 41814 152 A4 (disc 0 50)/  
natural air-cooling  
Parameter: Verlustleistung/Power dissipation  $P_{AV}$

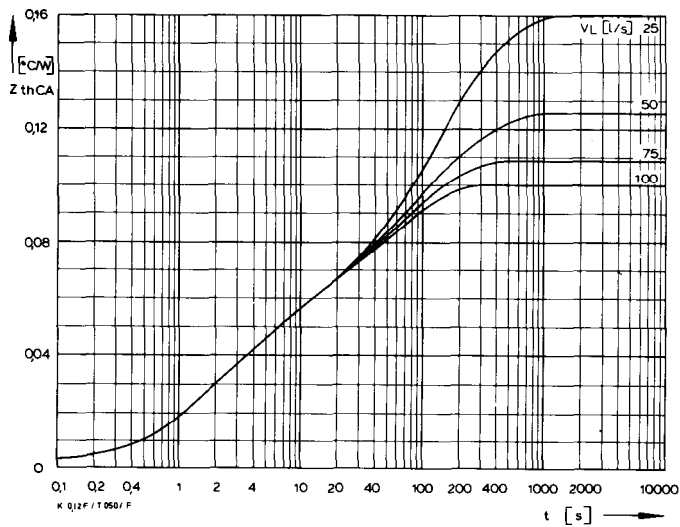
$P_{AV} = 50 \text{ W}$	$R_{th} [^{\circ}\text{C}/\text{W}]$	0,0095	0,0365	0,027	0,367		
$Z_{thCA}$	$\tau [s]$	0,578	2,7	38,5	824		
$P_{AV} = 100 \text{ W}$	$R_{th} [^{\circ}\text{C}/\text{W}]$	0,0014	0,0085	0,0365	0,0219	0,0277	0,304
$Z_{thCA}$	$\tau [s]$	0,145	1,15	2,74	31,5	445	735
$P_{AV} = 200 \text{ W}$	$R_{th} [^{\circ}\text{C}/\text{W}]$	0,00133	0,00937	0,0366	0,0161	0,0476	0,259
$Z_{thCA}$	$\tau [s]$	0,146	1,12	2,93	25,8	395	669
$P_{AV} = 300 \text{ W}$	$R_{th} [^{\circ}\text{C}/\text{W}]$	0,00134	0,00936	0,0367	0,0176	0,0250	0,27
$Z_{thCA}$	$\tau [s]$	0,146	1,12	2,93	27,5	575	606



Kühlkörper K0.12F/Thyristorgehäuse DIN 41814 151 A4 (Scheibe 0 41)/  
Luftselbstkühlung und verstärkte Luftkühlung  
Heatsink K0.12F/thyristor case DIN 41814 151 A4 (disc 0 41)/  
forced air-cooling  
Parameter: Verlustleistung/Power dissipation  $P_{AV}$   
Luftmenge/air volume  $V_L$

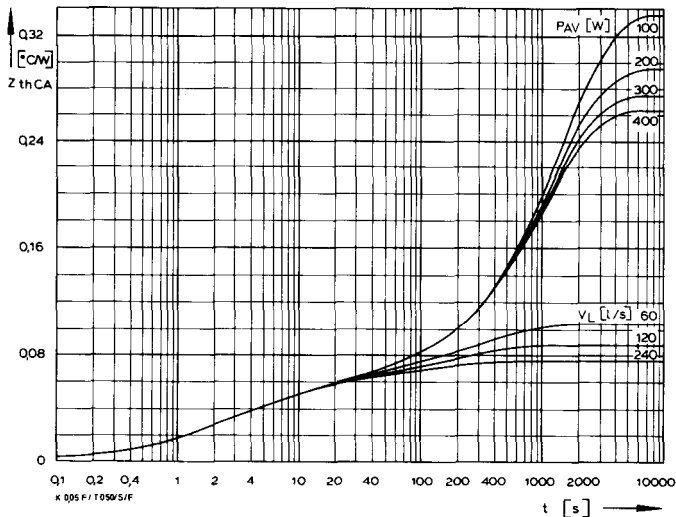
$V_L = 25 \text{ l/s}$	$R_{th} [^{\circ}\text{C}/\text{W}]$	0,0011	0,0532	0,0387	0,192		
$Z_{thCA}$	$\tau [s]$	0,163	1,5	11,8	151		
$V_L = 50 \text{ l/s}$	$R_{th} [^{\circ}\text{C}/\text{W}]$	0,0014	0,544	0,0525	0,1067		
$Z_{thCA}$	$\tau [s]$	0,2	1,55	15,3	128,5		
$V_L = 75 \text{ l/s}$	$R_{th} [^{\circ}\text{C}/\text{W}]$	0,0004	0,0412	0,032	0,0572	0,0542	
$Z_{thCA}$	$\tau [s]$	0,1	1,2	5,3	29	151,6	
$V_L = 100 \text{ l/s}$	$R_{th} [^{\circ}\text{C}/\text{W}]$	0,0004	0,0064	0,0475	0,0563	0,0544	
$Z_{thCA}$	$\tau [s]$	0,1	0,68	1,64	14,1	84	

# Kühlkörper: Transienter Wärmewiderstand und thermisches Ersatzschaltbild Heatsinks: Transient thermal impedance and thermal equivalent circuit



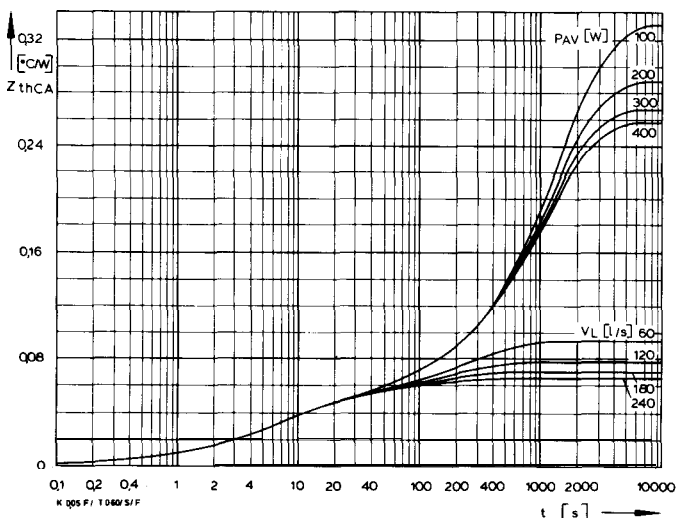
Kühlkörper K0.12F/Thyristorgehäuse DIN 41814 152 A4 (Scheibe 0 50)/  
verstärkte Luftkühlung  
Heatsink K0.12F/thyristor case DIN 41814 152 A4 (disc 0 50)/  
forced air-cooling  
Parameter: Luftmenge/air volume  $V_L$

$V_L = 25$ l/s	$R_{th}$ [°C/W]	0,0035	0,0395	0,0191	0,0264	0,0715
$Z_{thCA}$	$\tau$ [s]	0,35	2,33	21,8	87,9	222
$V_L = 50$ l/s	$R_{th}$ [°C/W]	0,0024	0,0387	0,0216	0,0257	0,0366
$Z_{thCA}$	$\tau$ [s]	0,24	2,18	16,8	73,8	186
$V_L = 75$ l/s	$R_{th}$ [°C/W]	0,0013	0,0383	0,0217	0,0467	
$Z_{thCA}$	$\tau$ [s]	0,13	2,05	13,7	85,4	
$V_L = 100$ l/s	$R_{th}$ [°C/W]	0,00044	0,0382	0,02086	0,0405	
$Z_{thCA}$	$\tau$ [s]	0,044	1,97	12,2	66,5	



Kühlkörper K0.05F/Thyristorgehäuse DIN 41814 152 A4 (Scheibe 0 50)/  
Luftselbstkühlung und verstärkte Luftkühlung  
Heatsink K0.05F/thyristor case DIN 41814 152 A4 (disc 0 50)/  
natural air-cooling and forced air-cooling  
Parameter: Verlustleistung/Power dissipation  $P_{AV}$   
Luftmenge/air volume  $V_L$

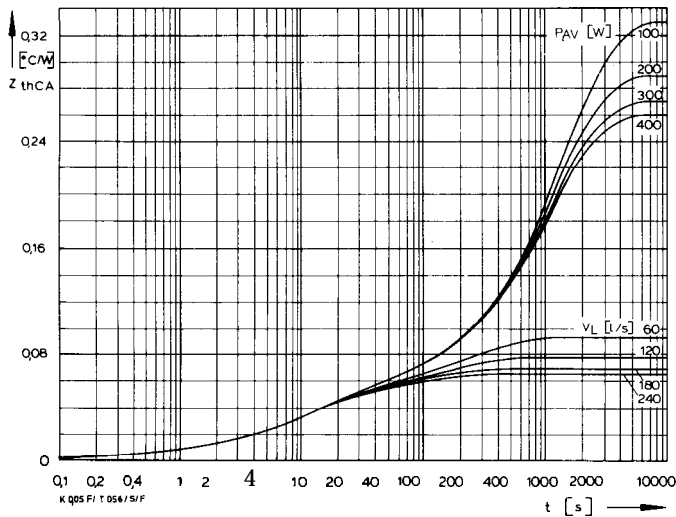
$P_{AV} = 100$ W	$R_{th}$ [°C/W]	0,00235	0,0321	0,0280	0,0125	0,260
$Z_{thCA}$	$\tau$ [s]	0,235	1,84	15,2	542	1443
$P_{AV} = 200$ W	$R_{th}$ [°C/W]	0,00216	0,0298	0,0283	0,0107	0,224
$Z_{thCA}$	$\tau$ [s]	0,216	1,70	12,0	564	1195
$P_{AV} = 300$ W	$R_{th}$ [°C/W]	0,00227	0,0304	0,0264	0,0122	0,2037
$Z_{thCA}$	$\tau$ [s]	0,227	1,76	11,6	498	1099
$P_{AV} = 400$ W	$R_{th}$ [°C/W]	0,00245	0,0325	0,0241	0,0083	0,1976
$Z_{thCA}$	$\tau$ [s]	0,245	1,9	13	451	1099
$V_L = 60$ l/s	$R_{th}$ [°C/W]	0,00251	0,0338	0,0276	0,040	
$Z_{thCA}$	$\tau$ [s]	0,251	1,96	16,5	334	
$V_L = 120$ l/s	$R_{th}$ [°C/W]	0,00253	0,0335	0,0257	0,0262	
$Z_{thCA}$	$\tau$ [s]	0,253	1,96	14,4	230	
$V_L = 240$ l/s	$R_{th}$ [°C/W]	0,00246	0,0313	0,0240	0,0182	
$Z_{thCA}$	$\tau$ [s]	0,246	1,90	10,4	121	



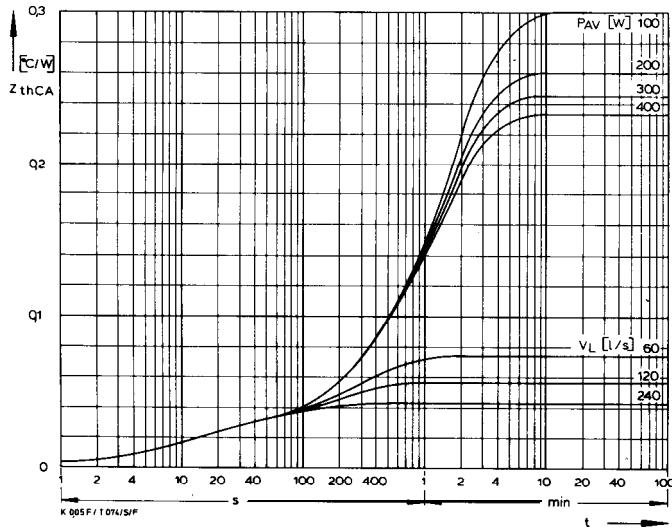
Kühlkörper K0.05F/Thyristorgehäuse DIN 41814 154 A4 (Scheibe 0 60)/  
Luftselbstkühlung und verstärkte Luftkühlung  
Heatsink K0.05F/thyristor case DIN 41814 154 A4 (disc 0 60)/  
natural air-cooling and forced air-cooling  
Parameter: Verlustleistung/Power dissipation  $P_{AV}$   
Luftmenge/air volume  $V_L$

$P_{AV} = 100$ W	$R_{th}$ [°C/W]	0,01	0,008	0,035	0,277	
$Z_{thCA}$	$\tau$ [s]	1,56	3,0	13,2	1397	
$P_{AV} = 200$ W	$R_{th}$ [°C/W]	0,01	0,0079	0,0341	0,238	
$Z_{thCA}$	$\tau$ [s]	1,56	3,0	12,7	1208	
$P_{AV} = 300$ W	$R_{th}$ [°C/W]	0,01	0,0075	0,0335	0,219	
$Z_{thCA}$	$\tau$ [s]	1,56	3,0	11,8	1098	
$P_{AV} = 400$ W	$R_{th}$ [°C/W]	0,01	0,0079	0,0331	0,209	
$Z_{thCA}$	$\tau$ [s]	1,56	3,0	12,0	1077	
$V_L = 60$ l/s	$R_{th}$ [°C/W]	0,01	0,0067	0,0325	0,0448	
$Z_{thCA}$	$\tau$ [s]	1,56	3,12	10,4	247	
$V_L = 120$ l/s	$R_{th}$ [°C/W]	0,01	0,0067	0,0325	0,0288	
$Z_{thCA}$	$\tau$ [s]	1,56	3,12	10,4	159	
$V_L = 180$ l/s	$R_{th}$ [°C/W]	0,01	0,0067	0,0325	0,0208	
$Z_{thCA}$	$\tau$ [s]	1,56	3,12	10,4	115	
$V_L = 240$ l/s	$R_{th}$ [°C/W]	0,01	0,0067	0,0325	0,0168	
$Z_{thCA}$	$\tau$ [s]	1,56	3,12	10,4	93	

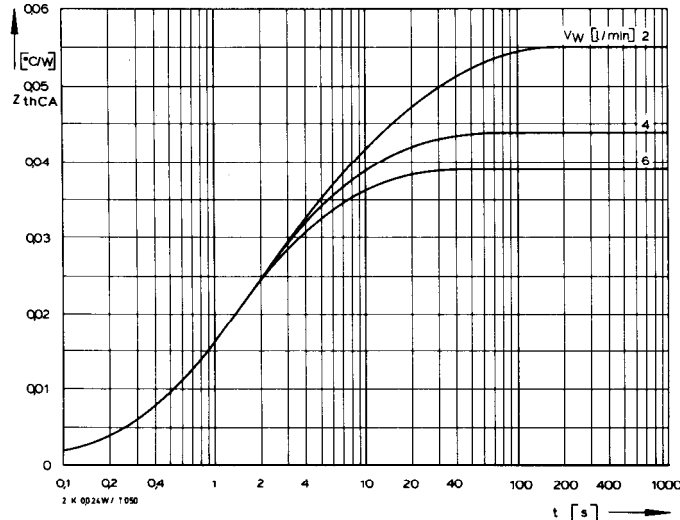
# Kühlkörper: Transienter Wärmewiderstand und thermisches Ersatzschaltbild Heatsinks: Transient thermal impedance and thermal equivalent circuit



Kühlkörper K0.05F/Thyristorgehäuse DIN 41814 153 C4 (Scheibe 0 56)/  
Luftselbstkühlung und verstärkte Luftkühlung  
Heatsink K0.05F/thyristor case DIN 41814 153 C4 (disc Ø56)/  
natural air-cooling and forced air-cooling  
Parameter: Verlustleistung/Power dissipation  $P_{AV}$   
Luftmenge/air volume  $V_L$



Kühlkörper K0.05F/Thyristorgehäuse DIN 41814 155 B4 (Scheibe 0 74)/  
Luftselbstkühlung und verstärkte Luftkühlung  
Heatsink K0.05F/thyristor case DIN 41814 155 B4 (disc 0 74)/  
natural air-cooling and forced air-cooling  
Parameter: Verlustleistung/Power dissipation  $P_{AV}$   
Luftmenge/air volume  $V_L$



Kühlkörper 2K0.024W/Thyristorgehäuse DIN 41814 152 A4 (Scheibe 0 50)/  
Wasserkühlung  
Heatsink 2K0.024W/thyristor case DIN 41814 152 A4 (disc 0 50)/  
water cooling  
Parameter: Kühlwassermenge/cooling water volume  $V_w$

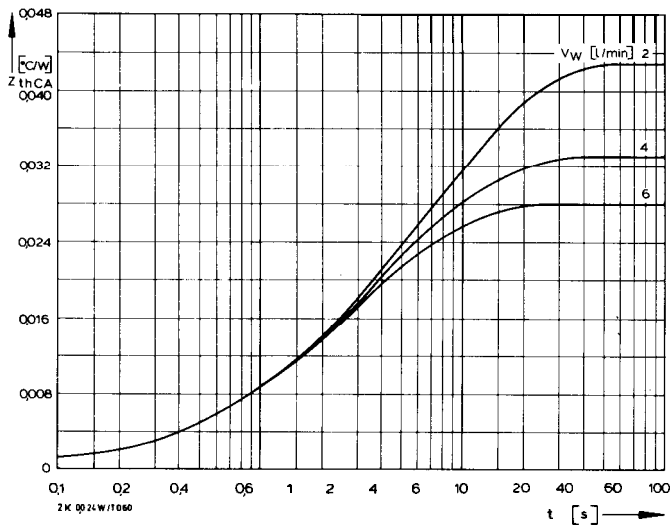
$P_{AV} = 100 \text{ W}$	$R_{th} [^{\circ}\text{C/W}]$	0,0114	0,0406	0,278		
$Z_{thCA}$	$\tau [s]$	2,3	14,2	1392		
$P_{AV} = 200 \text{ W}$	$R_{th} [^{\circ}\text{C/W}]$	0,0114	0,0406	0,238		
$Z_{thCA}$	$\tau [s]$	2,3	14,2	1192		
$P_{AV} = 300 \text{ W}$	$R_{th} [^{\circ}\text{C/W}]$	0,0114	0,0406	0,218		
$Z_{thCA}$	$\tau [s]$	2,3	14,2	1092		
$P_{AV} = 400 \text{ W}$	$R_{th} [^{\circ}\text{C/W}]$	0,0114	0,0406	0,208		
$Z_{thCA}$	$\tau [s]$	2,3	14,2	1041		
$V_L = 60 \text{ l/s}$	$R_{th} [^{\circ}\text{C/W}]$	0,0105	0,0385	0,045		
$Z_{thCA}$	$\tau [s]$	2,27	12	244		
$V_L = 120 \text{ l/s}$	$R_{th} [^{\circ}\text{C/W}]$	0,0105	0,0385	0,029		
$Z_{thCA}$	$\tau [s]$	2,27	12	157		
$V_L = 180 \text{ l/s}$	$R_{th} [^{\circ}\text{C/W}]$	0,0105	0,0385	0,021		
$Z_{thCA}$	$\tau [s]$	2,27	12	114		
$V_L = 240 \text{ l/s}$	$R_{th} [^{\circ}\text{C/W}]$	0,0105	0,0385	0,017		
$Z_{thCA}$	$\tau [s]$	2,27	12	92		

$P_{AV} = 100 \text{ W}$	$R_{th} [^{\circ}\text{C/W}]$	0,0011	0,0234	0,0068	0,2687	
$Z_{thCA}$	$\tau [s]$	1,4	11,5	909	1651	
$P_{AV} = 200 \text{ W}$	$R_{th} [^{\circ}\text{C/W}]$	0,0009	0,0223	0,0088	0,228	
$Z_{thCA}$	$\tau [s]$	1,3	10,4	461	1406	
$P_{AV} = 300 \text{ W}$	$R_{th} [^{\circ}\text{C/W}]$	0,0008	0,0223	0,0125	0,2094	
$Z_{thCA}$	$\tau [s]$	1,27	10,36	655	1338	
$P_{AV} = 400 \text{ W}$	$R_{th} [^{\circ}\text{C/W}]$	0,0008	0,0214	0,0253	0,1875	
$Z_{thCA}$	$\tau [s]$	1,26	9,6	568	1379	
$V_L = 60 \text{ l/s}$	$R_{th} [^{\circ}\text{C/W}]$	0,0034	0,0225	0,0491		
$Z_{thCA}$	$\tau [s]$	2,74	13,7	334		
$V_L = 120 \text{ l/s}$	$R_{th} [^{\circ}\text{C/W}]$	0,003	0,021	0,034		
$Z_{thCA}$	$\tau [s]$	2,7	12	209		
$V_L = 240 \text{ l/s}$	$R_{th} [^{\circ}\text{C/W}]$	0,0029	0,0191	0,0023		
$Z_{thCA}$	$\tau [s]$	2,73	10,9	100		

$V_w = 2 \text{ l/min}$	$R_{th} [^{\circ}\text{C/W}]$	0,0228	0,0188	0,0134		
$Z_{thCA}$	$\tau [s]$	1,19	6,34	27,7		
$V_w = 4 \text{ l/min}$	$R_{th} [^{\circ}\text{C/W}]$	0,0289	0,0151			
$Z_{thCA}$	$\tau [s]$	1,48	9,89			
$V_w = 6 \text{ l/min}$	$R_{th} [^{\circ}\text{C/W}]$	0,0252	0,0138			
$Z_{thCA}$	$\tau [s]$	1,25	6,44			

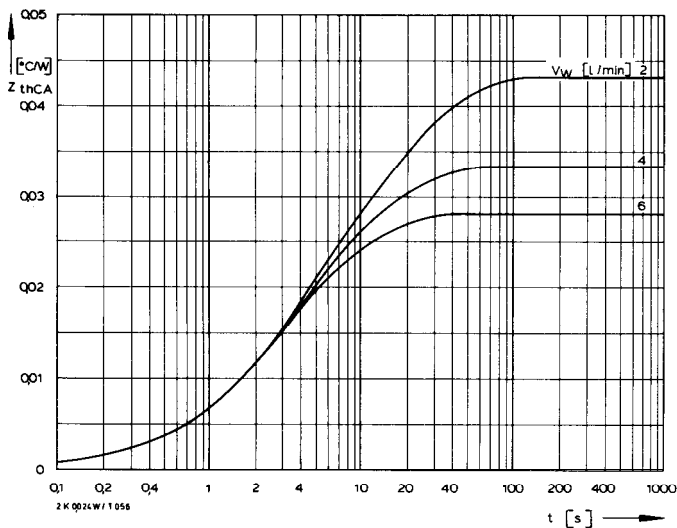
# Kühlkörper: Transienter Wärmewiderstand und thermisches Ersatzschaltbild

## Heatsinks: Transient thermal impedance and thermal equivalent circuit



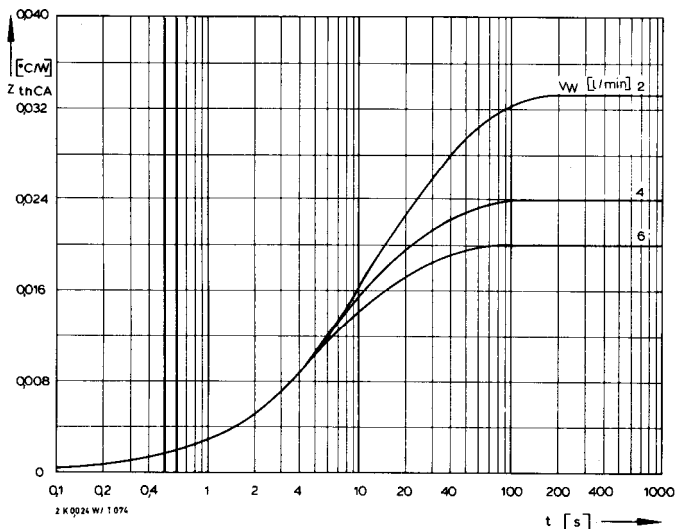
Kühlkörper 2K0.024W/Thyristorgehäuse DIN 41814 154 A4 (Scheibe 0 60)/  
Wasserkühlung  
Heatsink 2K0.024W/thyristor case DIN 41814 154 A4 (disc 0 60)/  
water cooling  
Parameter: Kühlwassermenge/cooling water volume  $V_W$

$V_W = 2$ l/min	$R_{th}$ [°C/W]	0,00104	0,0111	0,03086		
$Z_{thCA}$	$\tau$ [s]	0,553	1,7	10,1		
$V_W = 4$ l/min	$R_{th}$ [°C/W]	0,00104	0,0111	0,02086		
$Z_{thCA}$	$\tau$ [s]	0,553	1,7	6,82		
$V_W = 6$ l/min	$R_{th}$ [°C/W]	0,00104	0,0111	0,01586		
$Z_{thCA}$	$\tau$ [s]	0,553	1,7	5,19		



Kühlkörper 2K0.024W/Thyristorgehäuse DIN 41814 153 C4 (Scheibe 0 56)/  
Wasserkühlung  
Heatsink 2K0.024W/thyristor case DIN 41814 153 C4 (disc 0 56)/  
water cooling  
Parameter: Kühlwassermenge/cooling water volume  $V_W$

$V_W = 2$ l/min	$R_{th}$ [°C/W]	0,0198	0,0232			
$Z_{thCA}$	$\tau$ [s]	3,16	19,6			
$V_W = 4$ l/min	$R_{th}$ [°C/W]	0,0164	0,0166			
$Z_{thCA}$	$\tau$ [s]	2,63	11,0			
$V_W = 6$ l/min	$R_{th}$ [°C/W]	0,015	0,013			
$Z_{thCA}$	$\tau$ [s]	2,34	7,81			



Kühlkörper 2K0.024W/Thyristorgehäuse DIN 41814 155 B4 (Scheibe 0 74)/  
Wasserkühlung  
Heatsink 2K0.024W/thyristor case DIN 41814 155 B4 (disc 0 74)/  
water cooling  
Parameter: Kühlwassermenge/cooling water volume  $V_W$

$V_W = 2$ l/min	$R_{th}$ [°C/W]	0,0115	0,0215			
$Z_{thCA}$	$\tau$ [s]	4,95	27,5			
$V_W = 4$ l/min	$R_{th}$ [°C/W]	0,0143	0,0097			
$Z_{thCA}$	$\tau$ [s]	5,24	23,9			
$V_W = 6$ l/min	$R_{th}$ [°C/W]	0,0134	0,0066			
$Z_{thCA}$	$\tau$ [s]	4,65	19,4			