

A

Heatsinks for PGA

B

C

D

E

F

G

H

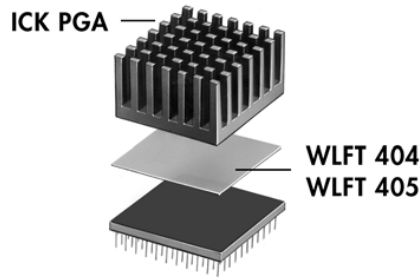
I

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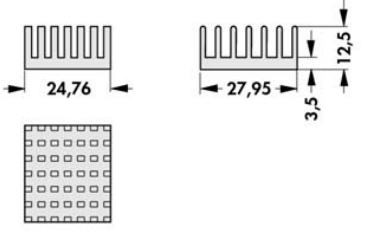
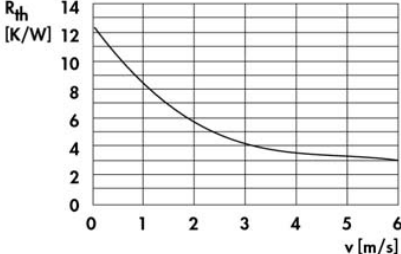
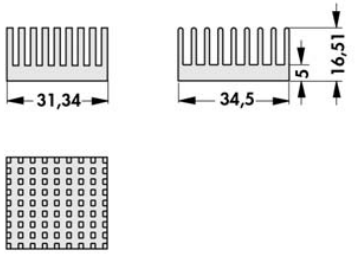
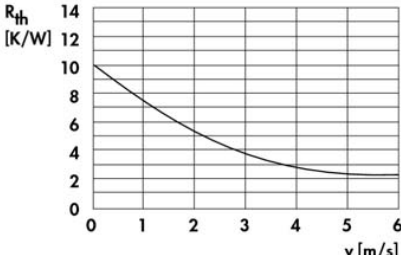
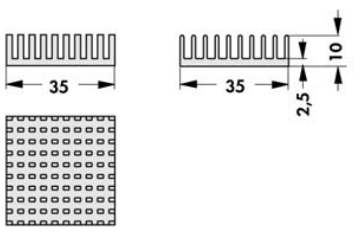
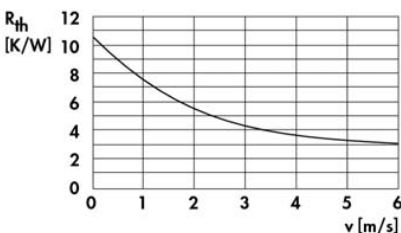
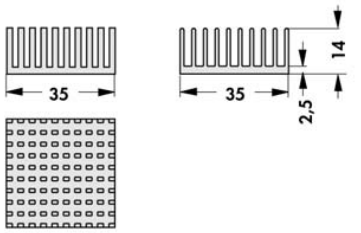
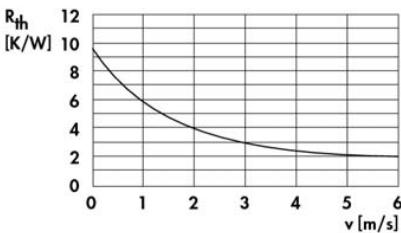
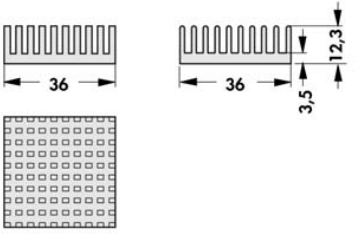
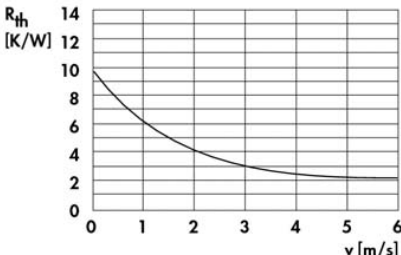
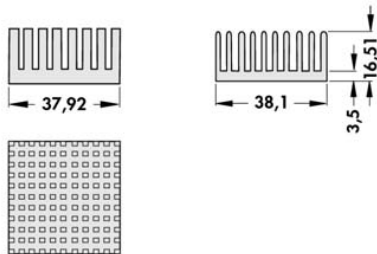
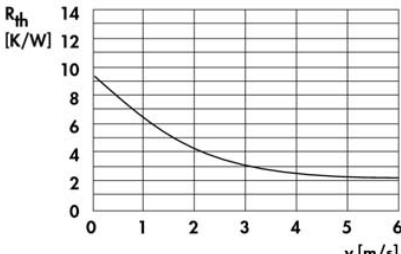


art. no.			
ICK PGA 6 x 6 x 14 WLF ... 14 x 14			
ICK PGA 8 x 8 x 12 WLF ... 23 x 23			
ICK PGA 9 x 9 WLF ... 24 x 24			
ICK PGA 11 x 11 x 8 WLF ... 24 x 27			
ICK PGA 11 x 11 WLF ... 24 x 27			

B 1

Thermal conduct. foil WLFT 404/405 → E ?
 Thermal conductive glue → E ?
 Thermal conductive paste → E ?
 Processor overview → B 2 - 7

SMD-heatsinks → B 29 - 31
 Mounting material for semiconduct. → E ? - ?
 Hole pattern → A 21
 Technical introduction → A 2 - 7

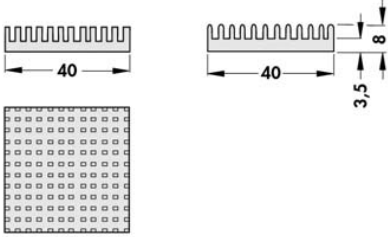
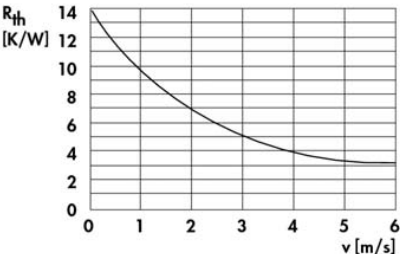
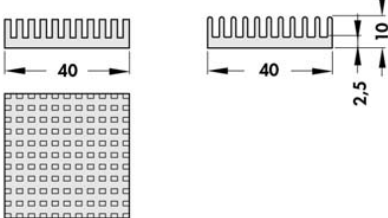
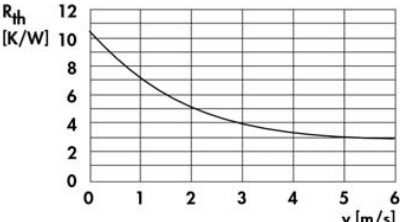
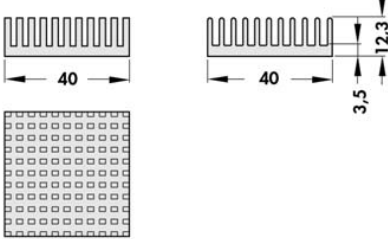
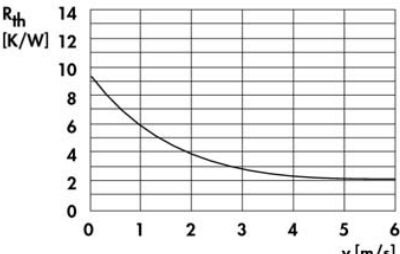
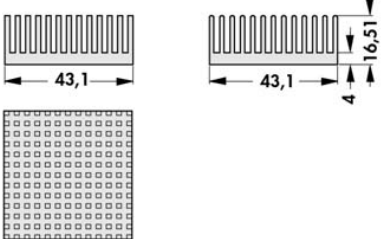
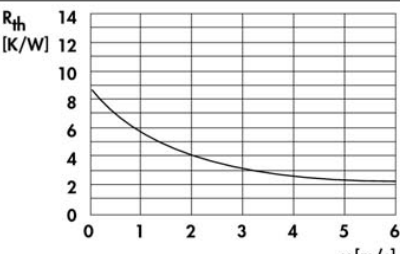
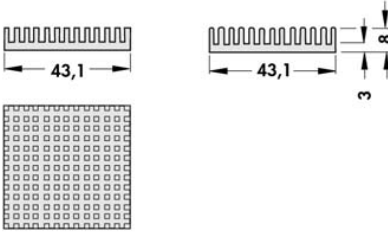
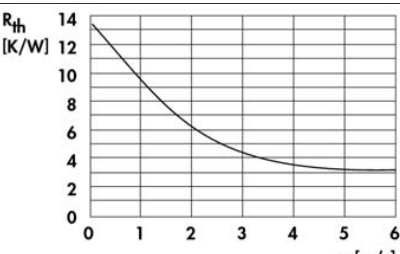
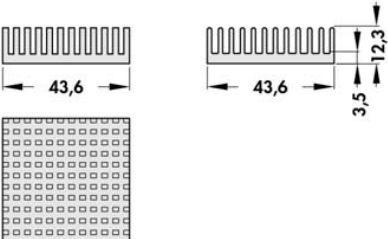
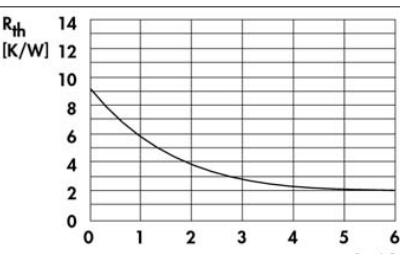
<p>art. no.</p> <p>ICK PGA 11 x 11 x 12 WLF ... 24 x 27</p>		
<p>art. no.</p> <p>ICK PGA 14 x 14 WLF ... 31 x 34</p>		
<p>art. no.</p> <p>ICK PGA 14 x 14 x 10 WLF ... 35 x 35</p>		
<p>art. no.</p> <p>ICK PGA 14 x 14 x 14 WLF ... 35 x 35</p>		
<p>art. no.</p> <p>ICK PGA 14 x 14 x 12 WLF ... 36 x 36</p>		
<p>art. no.</p> <p>ICK PGA 15 x 15 WLF ... 37 x 37</p>		

Thermal conduct. foil WLFT 404/405 → E ?
 Thermal conductive glue → E ?
 Thermal conductive paste → E ?
 Processor overview → B 2 - 7

SMD-heatsinks → B 29 - 31
 Mounting material for semiconduct. → E ? - ?
 Hole pattern → A 21
 Technical introduction → A 2 - 7

B 2

Heatsinks for PGA

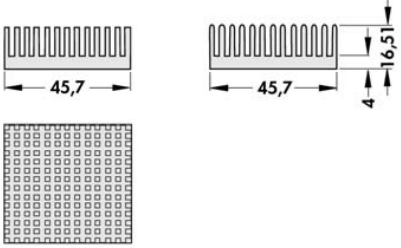
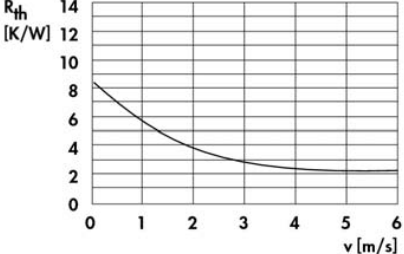
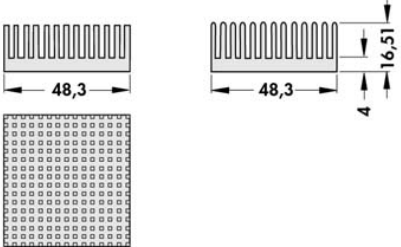
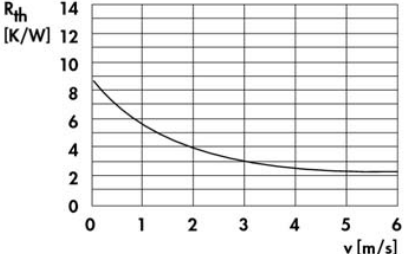
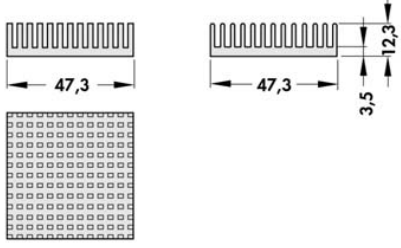
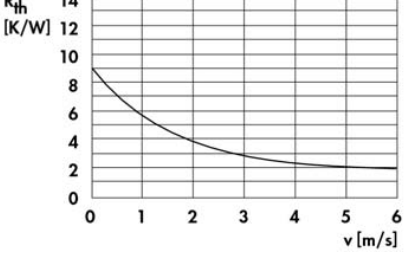
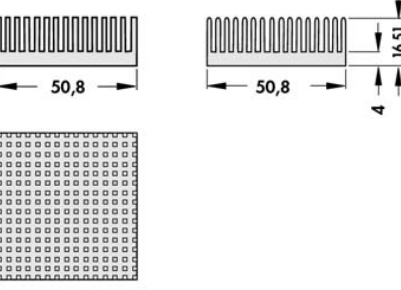
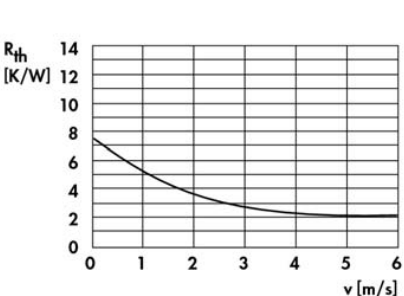
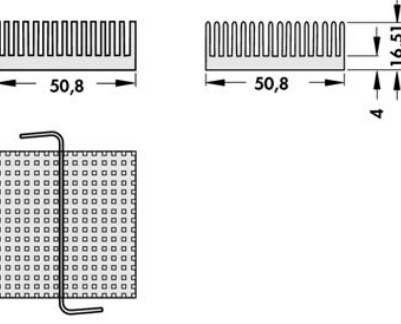
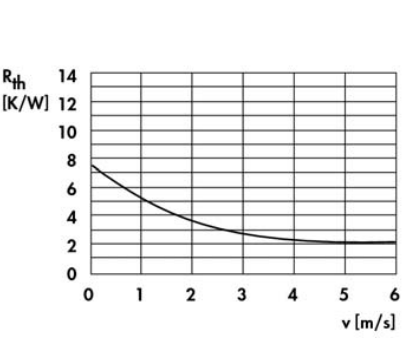
<p>art. no.</p> <p>ICK PGA 16 x 16 x 8 WLF ... 40 x 40</p>		
<p>art. no.</p> <p>ICK PGA 16 x 16 x 10 WLF ... 40 x 40</p>		
<p>art. no.</p> <p>ICK PGA 16 x 16 x 12 WLF ... 40 x 40</p>		
<p>art. no.</p> <p>ICK PGA 17 x 17 WLF ... 43 x 43</p>		
<p>art. no.</p> <p>ICK PGA 17 x 17 x 8 WLF ... 43 x 43</p>		
<p>art. no.</p> <p>ICK PGA 17 x 17 x 12 WLF ... 43 x 43</p>		

B 3

Thermal conduct. foil WLFT 404/405 → E ?
 Thermal conductive glue → E ?
 Thermal conductive paste → E ?
 Processor overview → B 2 - 7

SMD-heatsinks → B 29 - 31
 Mounting material for semiconduct. → E ? - ?
 Hole pattern → A 21
 Technical introduction → A 2 - 7

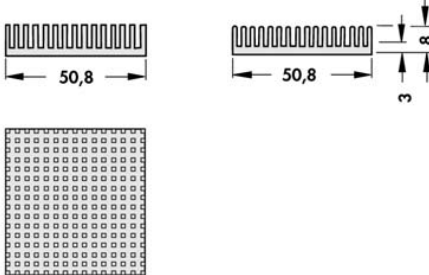
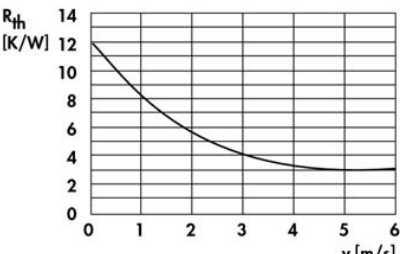
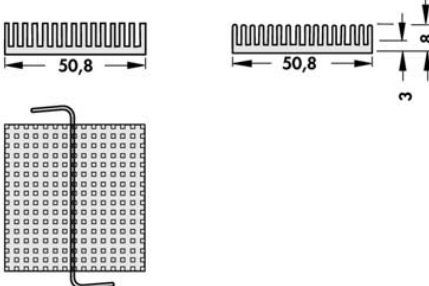
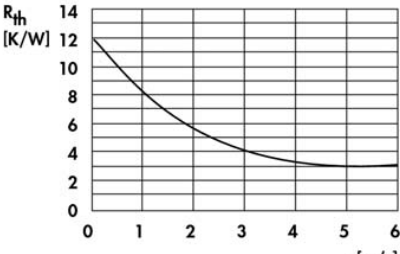
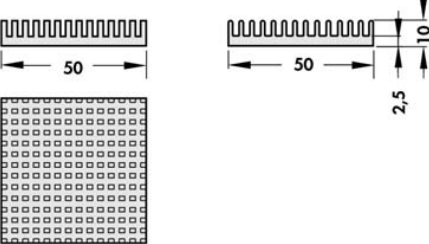
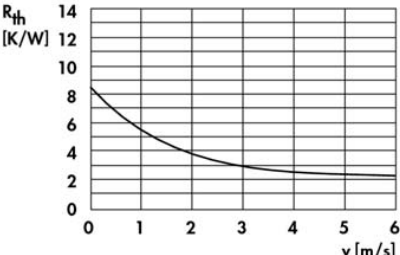
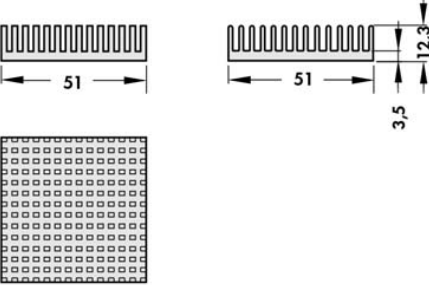
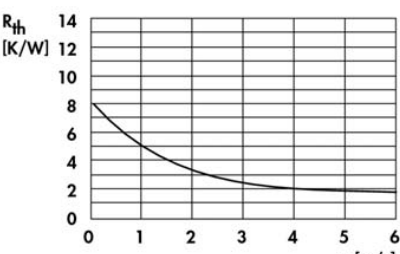
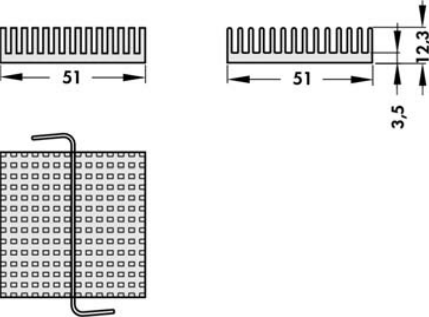
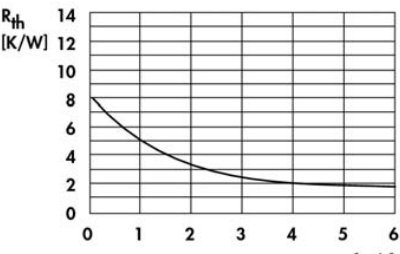
Heatsinks for PGA

<p>art. no.</p> <p>ICK PGA 18 x 18 WLF ... 45 x 45</p>		
<p>art. no.</p> <p>ICK PGA 19 x 19 WLF ... 48 x 48</p>		
<p>art. no.</p> <p>ICK PGA 19 x 19 x 12 WLF ... 47 x 47</p>		
<p>art. no.</p> <p>ICK PGA 20 x 20 WLF ... 50 x 50</p>		
<p>art. no.</p> <p>ICK PGA 20 x 20 K WLF ... 50 x 50</p>	 <p>with fixing clamp for socket 7 and socket 370</p>	

Thermal conduct. foil WLFT 404/405 → E ?
 Thermal conductive glue → E ?
 Thermal conductive paste → E ?
 Processor overview → B 2 - 7

SMD-heatsinks → B 29 - 31
 Mounting material for semiconduct. → E ? - ?
 Hole pattern → A 21
 Technical introduction → A 2 - 7

Heatsinks for PGA

<p>art. no.</p> <p>ICK PGA 20 x 20 x 8 WLF ... 50 x 50</p>		
<p>art. no.</p> <p>ICK PGA 20 x 20 x 8 K WLF ... 50 x 50</p>		
with fixing clamp for socket 7 and socket 370		
<p>art. no.</p> <p>ICK PGA 20 x 20 x 10 WLF ... 48 x 48</p>		
<p>art. no.</p> <p>ICK PGA 20 x 20 x 12 WLF ... 50 x 50</p>		
<p>art. no.</p> <p>ICK PGA 20 x 20 x 12 K WLF ... 50 x 50</p>		
with fixing clamp for socket 7 and socket 370		

B 5

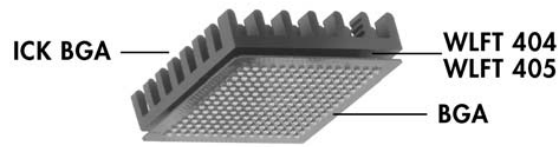
Thermal conduct. foil WLFT 404/405 → E ?
 Thermal conductive glue → E ?
 Thermal conductive paste → E ?
 Processor overview → B 2 - 7

SMD-heatsinks → B 29 - 31
 Mounting material for semiconduct. → E ? - ?
 Hole pattern → A 21
 Technical introduction → A 2 - 7

<p>art. no.</p> <p>ICK PGA 21 x 21 WLF ... 53 x 53</p>		
<p>art. no.</p> <p>ICK PGA 22 x 22 WLF ... 54 x 54</p>		
<p>art. no.</p> <p>ICK PGA 25 x 25 WLF ... 62 x 62</p>		

Thermal conduct. foil WLF 404/405 → E ?
 Thermal conductive glue → E ?
 Thermal conductive paste → E ?
 Processor overview → B 2 - 7

SMD-heatsinks → B 29 - 31
 Mounting material for semiconduct. → E ? - ?
 Hole pattern → A 21
 Technical introduction → A 2 - 7

Heatsinks for BGAs


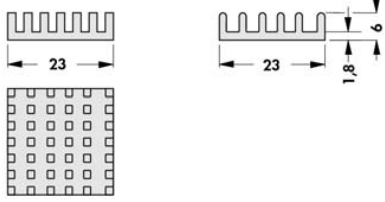
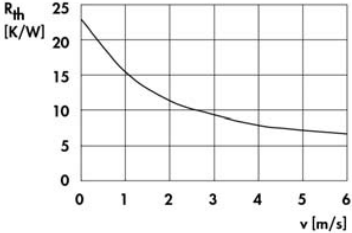
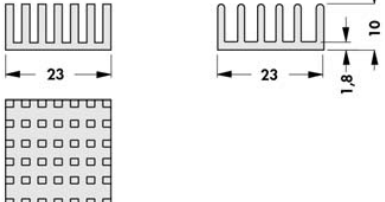
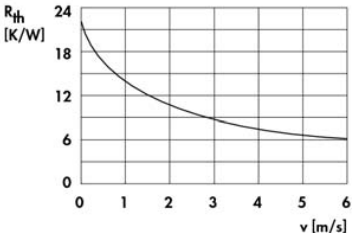
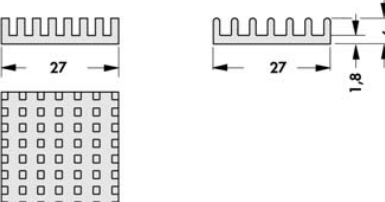
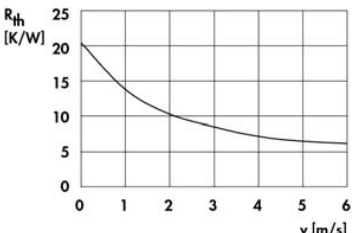
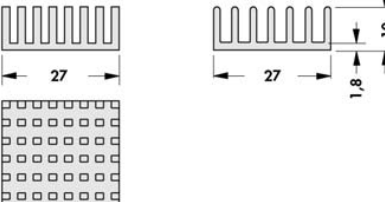
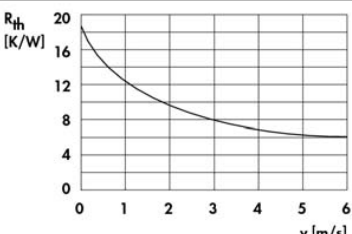
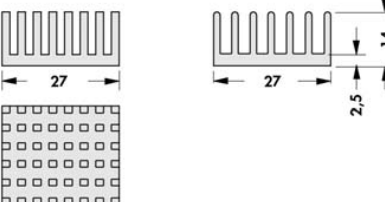
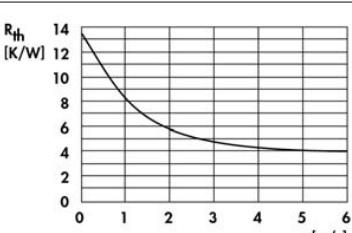
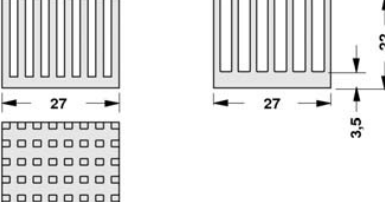
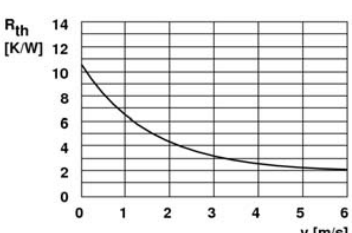
- particularly suited for **B**all **G**rid **A**rrays
- heatsink dimensions match the respective BGA-type
- can be glued directly on the BGA component

art. no. ICK BGA 10 x 10 WLF ... 10 x 10		
art. no. ICK BGA 10 x 10 x 10 WLF ... 10 x 10		
art. no. ICK BGA 14 x 14 WLF ... 14 x 14		
art. no. ICK BGA 14 x 14 x 10 WLF ... 14 x 14		
art. no. ICK BGA 21 x 21 WLF ... 21 x 21		

B 7

Thermal conduct. foil WLFT 404/405 → E ?
 Thermal conductive glue → E ?
 Thermal conductive paste → E ?
 Processor overview → B 2 - 7

SMD-heatsinks → B 29 - 31
 Mounting material for semiconduct. → E ? - ?
 Hole pattern → A 21
 Technical introduction → A 2 - 7

<p>art. no.</p> <p>ICK BGA 23 x 23 WLF ... 23 x 23</p>		
<p>art. no.</p> <p>ICK BGA 23 x 23 x 10 WLF ... 23 x 23</p>		
<p>art. no.</p> <p>ICK BGA 27 x 27 WLF ... 27 x 27</p>		
<p>art. no.</p> <p>ICK BGA 27 x 27 x 10 WLF ... 27 x 27</p>		
<p>art. no.</p> <p>ICK BGA 27 x 27 x 14 WLF ... 27 x 27</p>		
<p>art. no.</p> <p>ICK BGA 27 x 27 x 22 WLF ... 27 x 27</p>		

Thermal conduct. foil WLFT 404/405 → E ?
 Thermal conductive glue → E ?
 Thermal conductive paste → E ?
 Processor overview → B 2 - 7

SMD-heatsinks → B 29 - 31
 Mounting material for semiconduct. → E ? - ?
 Hole pattern → A 21
 Technical introduction → A 2 - 7

Heatsinks for BGAs

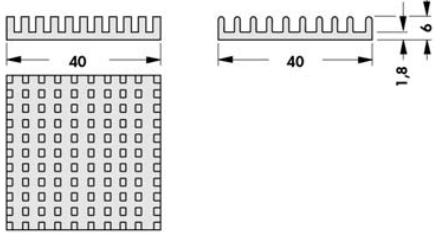
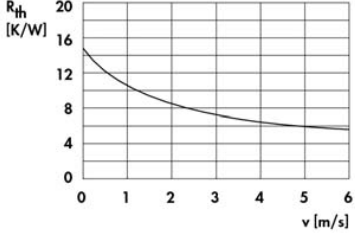
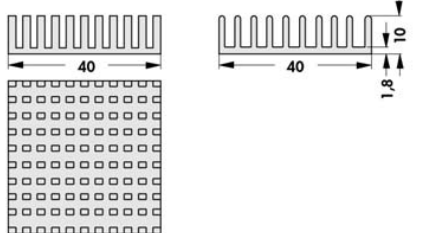
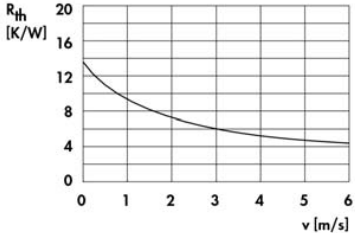
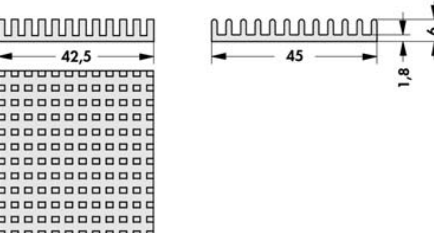
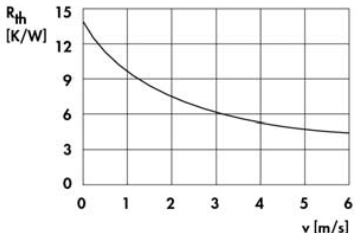
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art. no. ICK BGA 31 x 31 x 10 WLF ... 31 x 31		
art. no. ICK BGA 35 x 35 WLF ... 35 x 35		
art. no. ICK BGA 35 x 35 x 10 WLF ... 35 x 35		
art. no. ICK BGA 37 x 37 x 6 WLF ... 37 x 37		
art. no. ICK BGA 37 x 37 x 10 WLF ... 37 x 37		

B 9

Thermal conduct. foil WLFT 404/405 → E ?
 Thermal conductive glue → E ?
 Thermal conductive paste → E ?
 Processor overview → B 2 - 7

SMD-heatsinks → B 29 - 31
 Mounting material for semiconduct. → E ? - ?
 Hole pattern → A 21
 Technical introduction → A 2 - 7

Heatsinks for BGAs

<p>art. no.</p> <p>ICK BGA 40 x 40 WLF ... 40 x 40</p>		
<p>art. no.</p> <p>ICK BGA 40 x 40 x 10 WLF ... 40 x 40</p>		
<p>art. no.</p> <p>ICK BGA 42,5 x 45 WLF ... 42,5 x 45</p>		

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Thermal conduct. foil WLF 404/405 → E ?
 Thermal conductive glue → E ?
 Thermal conductive paste → E ?
 Processor overview → B 2 - 7

SMD-heatsinks → B 29 - 31
 Mounting material for semiconduct. → E ? - ?
 Hole pattern → A 21
 Technical introduction → A 2 - 7

B 10

N

A

Pin heatsinks

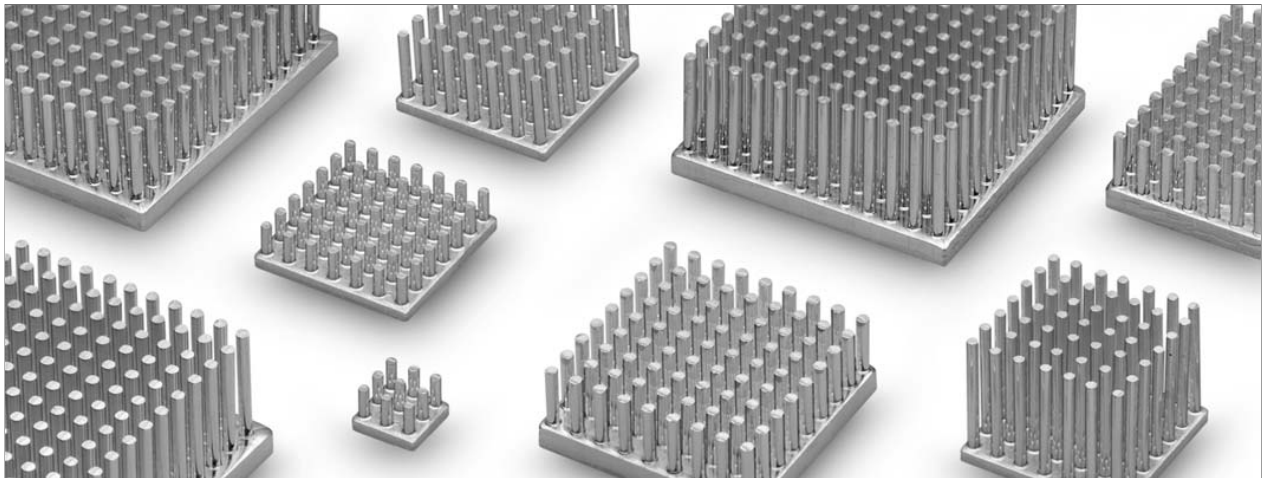
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- arrangement and number of pins for optimum air flow
- suitable for forced and free convection
- excellent thermal conductivity by the alloy material (Al99,5; 220 W/mK) and homogeneous arrangement of materials
- constant heat distribution in the base and the pins, in the direction of heat flow
- low weight achieved by optimised geometry
- Components fastened using glue, adhesive foil or clamps

customer-specific modifications and special designs; other pin-lengths and surfaces on request

surface: Al-natural

G

H


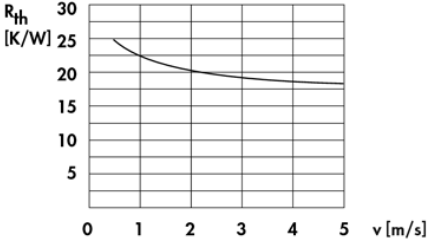

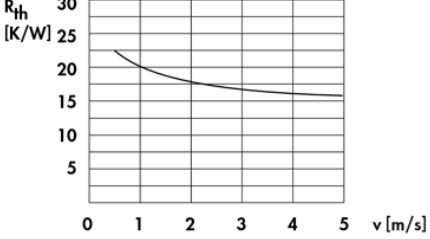

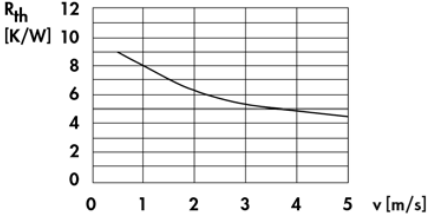
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art. no. ICK S 10 x 10 x 6,5 WLF ... 10 x 10 weight: 1 g		
art. no. ICK S 10 x 10 x 12,5 WLF ... 10 x 10 weight: 1.3 g		
art. no. ICK S 14 x 14 x 6,5 WLF ... 14 x 14 weight: 1.5 g		

B 11

Thermal conduct. foil WLFT 404/405 → E ?
 Thermal conductive glue → E ?
 Thermal conductive paste → E ?
 Processor overview → B 2 - 7

SMD-heatsinks → B 29 - 31
 Mounting material for semiconduct. → E ? - ?
 Hole pattern → A 21
 Technical introduction → A 2 - 7

Pin heatsinks

A

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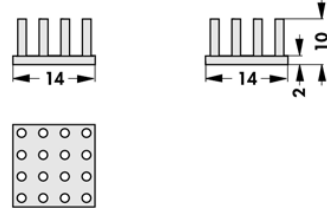
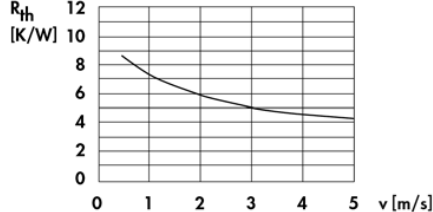
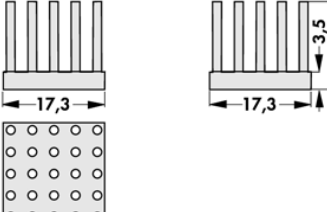
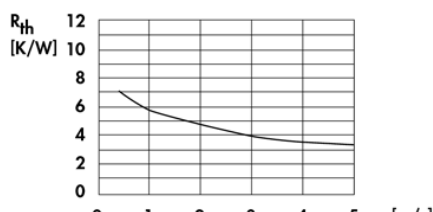
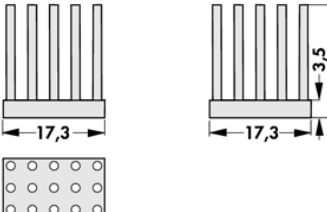
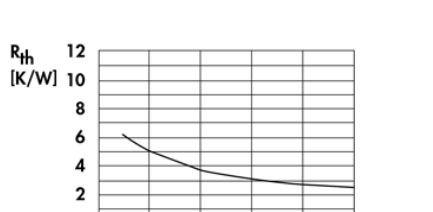
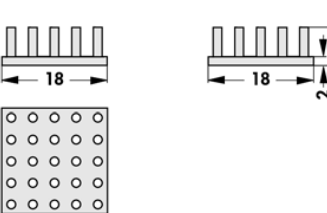
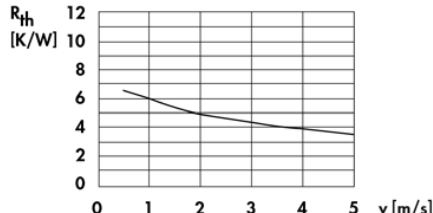
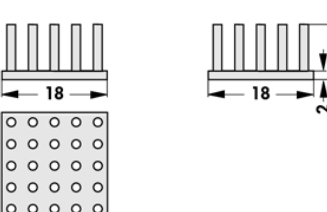
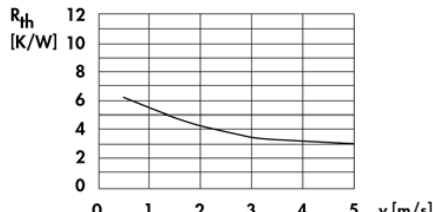
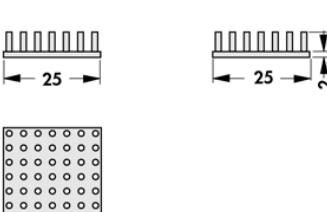
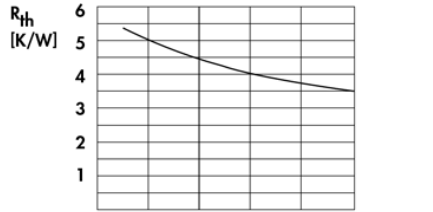
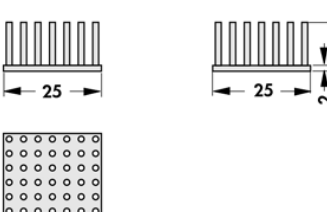
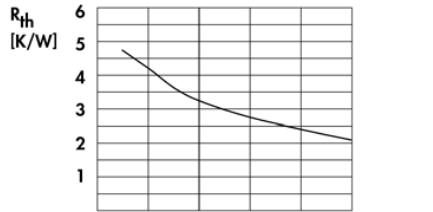
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<p>art. no.</p> <p>ICK S 14 x 14 x 10 WLF ... 14 x 14 weight: 1.9 g</p>		
<p>art. no.</p> <p>ICK S 17 x 17 x 15 WLF ... 17 x 17 weight: 4.7 g</p>		
<p>art. no.</p> <p>ICK S 17 x 17 x 20 WLF ... 17 x 17 weight: 5.6 g</p>		
<p>art. no.</p> <p>ICK S 18 x 18 x 6,5 WLF ... 18 x 18 weight: 2.5 g</p>		
<p>art. no.</p> <p>ICK S 18 x 18 x 10 WLF ... 18 x 18 weight: 3.1 g</p>		
<p>art. no.</p> <p>ICK S 25 x 25 x 6,5 WLF ... 25 x 25 weight: 4 g</p>		
<p>art. no.</p> <p>ICK S 25 x 25 x 12,5 WLF ... 25 x 25 weight: 6 g</p>		

Thermal conduct. foil WLF 404/405 → E ?
 Thermal conductive glue → E ?
 Thermal conductive paste → E ?
 Processor overview → B 2 - 7

SMD-heatsinks → B 29 - 31
 Mounting material for semiconduct. → E ? - ?
 Hole pattern → A 21
 Technical introduction → A 2 - 7

B 12

A

Pin heatsinks

B

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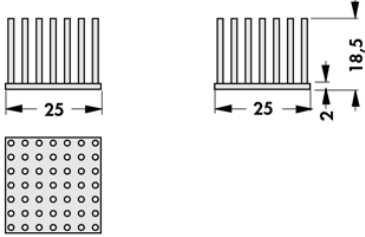
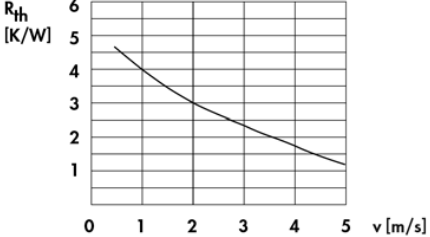
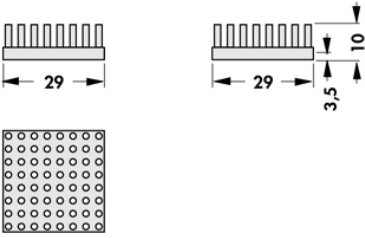
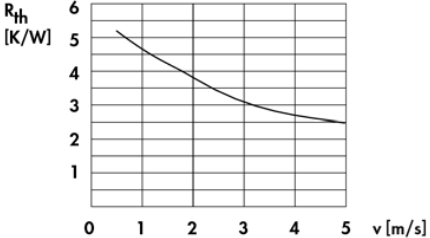
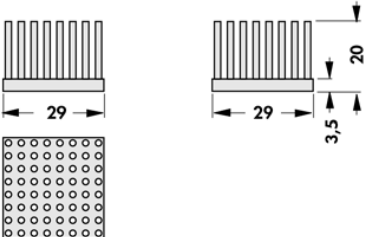
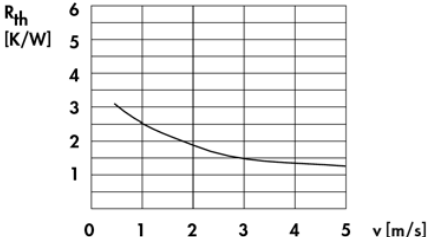
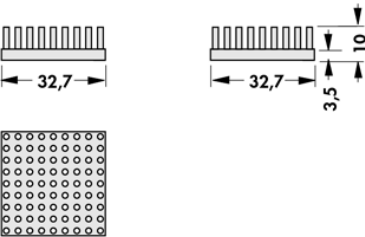
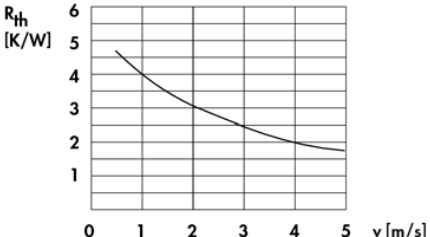
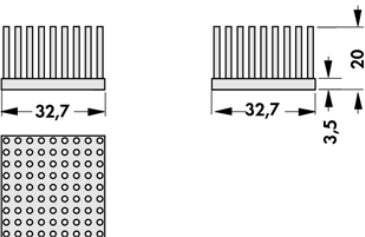
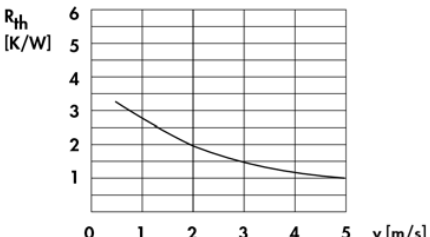
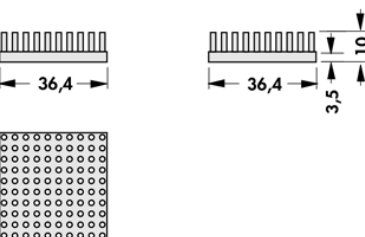
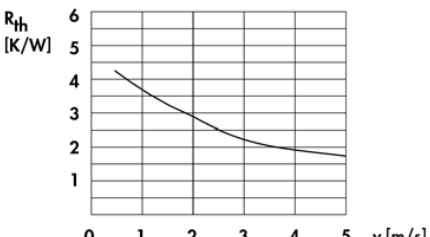
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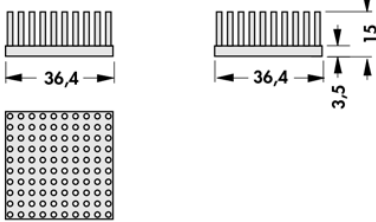
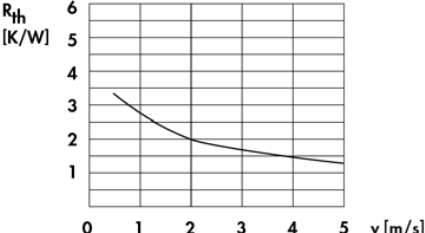
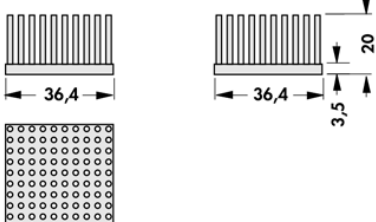
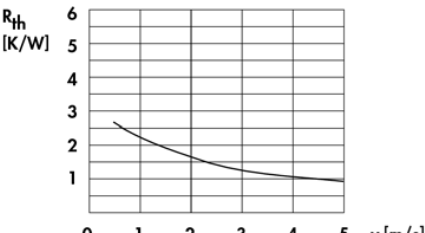
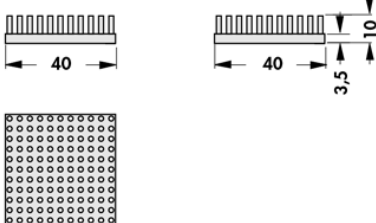
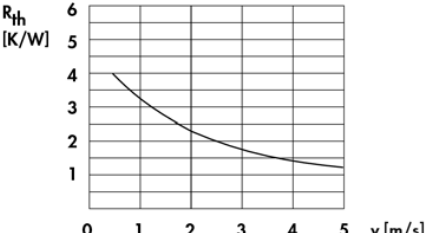
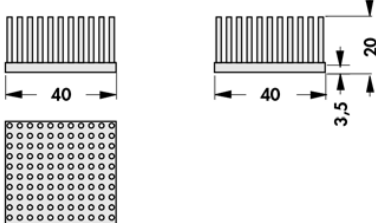
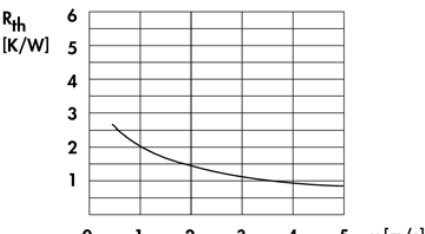
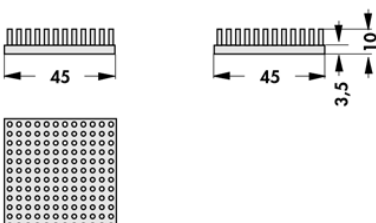
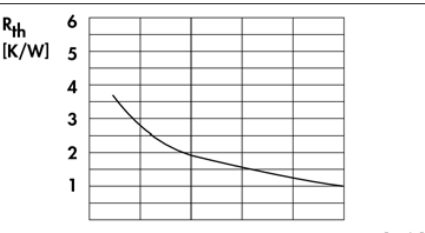
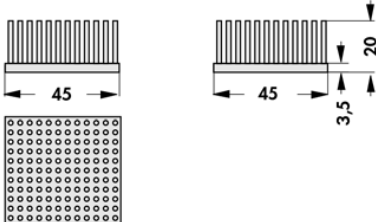
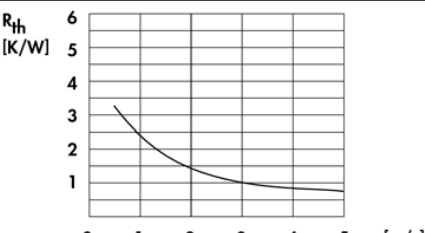
art. no. ICK S 25 x 25 x 18,5 WLF ... 25 x 25 weight: 7 g		
art. no. ICK S 29 x 29 x 10 WLF ... 29 x 29 weight: 11 g		
art. no. ICK S 29 x 29 x 20 WLF ... 29 x 29 weight: 15 g		
art. no. ICK S 32 x 32 x 10 WLF ... 32 x 32 weight: 14 g		
art. no. ICK S 32 x 32 x 20 WLF ... 32 x 32 weight: 19 g		
art. no. ICK S 36 x 36 x 10 WLF ... 36 x 36 weight: 17 g		

B 13

Thermal conduct. foil WLFT 404/405 → E ?
 Thermal conductive glue → E ?
 Thermal conductive paste → E ?
 Processor overview → B 2 - 7

SMD-heatsinks → B 29 - 31
 Mounting material for semiconduct. → E ? - ?
 Hole pattern → A 21
 Technical introduction → A 2 - 7

Pin heatsinks

<p>art. no.</p> <p>ICK S 36 x 36 x 15 WLF ... 36 x 36 weight: 20 g</p>		
<p>art. no.</p> <p>ICK S 36 x 36 x 20 WLF ... 36 x 36 weight: 24 g</p>		
<p>art. no.</p> <p>ICK S 40 x 40 x 10 WLF ... 40 x 40 weight: 21 g</p>		
<p>art. no.</p> <p>ICK S 40 x 40 x 20 WLF ... 40 x 40 weight: 29 g</p>		
<p>art. no.</p> <p>ICK S 45 x 45 x 10 WLF ... 45 x 45 weight: 26 g</p>		
<p>art. no.</p> <p>ICK S 45 x 45 x 20 WLF ... 45 x 45 weight: 36 g</p>		

Thermal conduct. foil WLFT 404/405 → E ?
 Thermal conductive glue → E ?
 Thermal conductive paste → E ?
 Processor overview → B 2 - 7

SMD-heatsinks → B 29 - 31
 Mounting material for semiconduct. → E ? - ?
 Hole pattern → A 21
 Technical introduction → A 2 - 7

B 14

A

B

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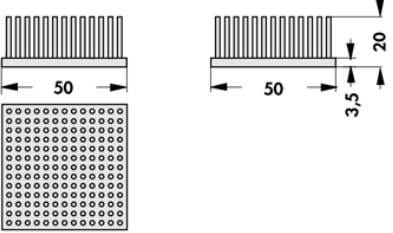
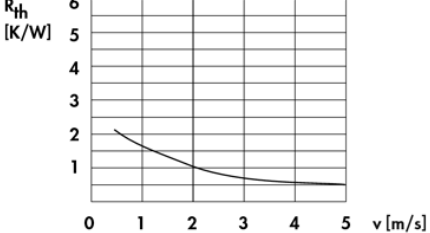
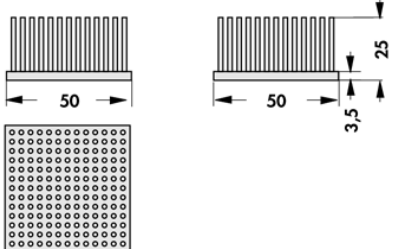
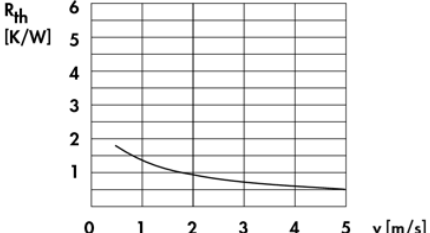
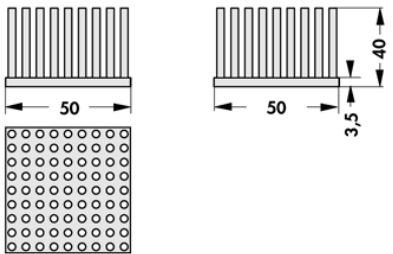
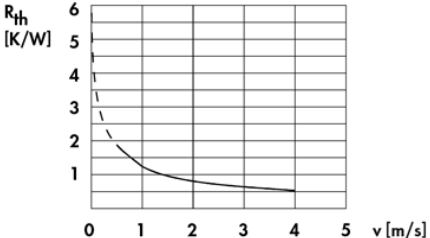
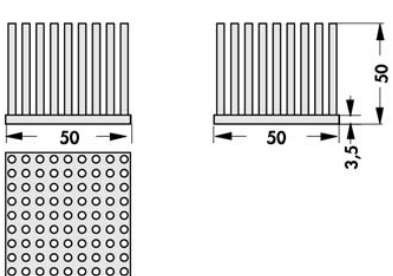
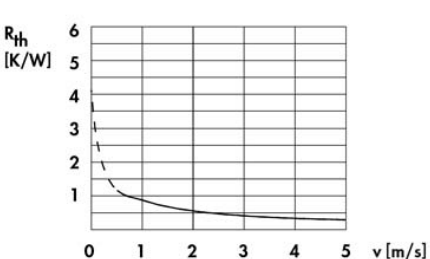
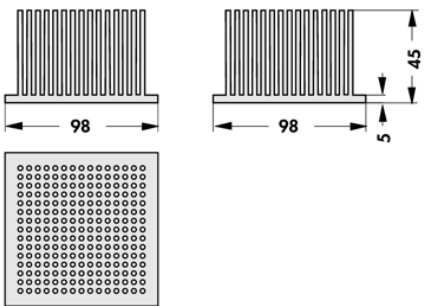
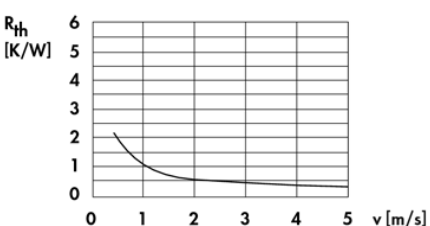
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Pin heatsinks

<p>art. no.</p> <p>ICK S 50 x 50 x 20 WLF ... 50 x 50 weight: 43 g</p>		
<p>art. no.</p> <p>ICK S 50 x 50 x 25 WLF ... 50 x 50 weight: 49 g</p>		
<p>art. no.</p> <p>ICK S 50 x 50 x 40 WLF ... 50 x 50 weight: 80.05 g</p>		
<p>art. no.</p> <p>ICK S 50 x 50 x 50 WLF ... 50 x 50 weight: 95.51 g</p>		
<p>art. no.</p> <p>ICK S 98 x 98 x 45 WLF ... 98 x 98 weight: 301.3 g</p>		

B 15

Thermal conduct. foil WLFT 404/405 → E ?
 Thermal conductive glue → E ?
 Thermal conductive paste → E ?
 Processor overview → B 2 - 7

SMD-heatsinks → B 29 - 31
 Mounting material for semiconduct. → E ? - ?
 Hole pattern → A 21
 Technical introduction → A 2 - 7

Pin heatsinks

Dome

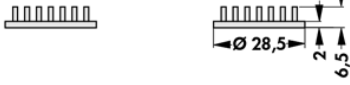
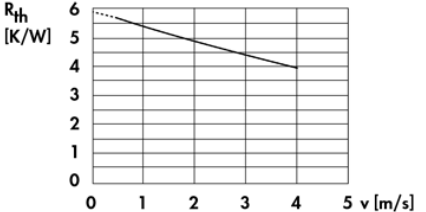
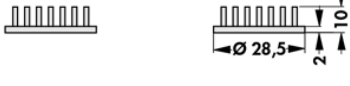
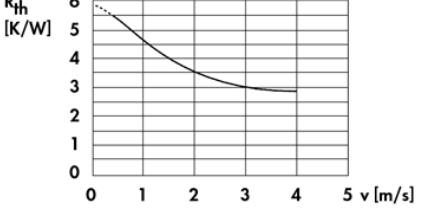
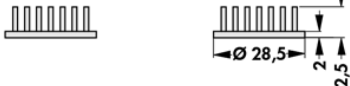
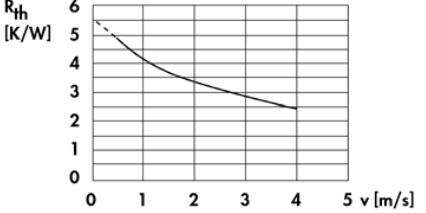

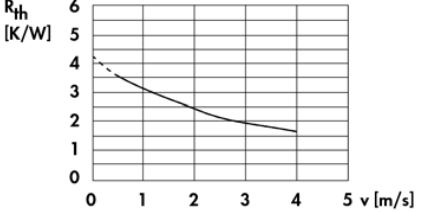

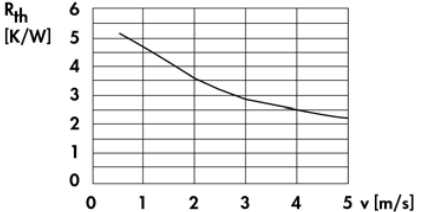

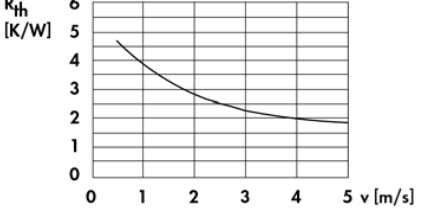

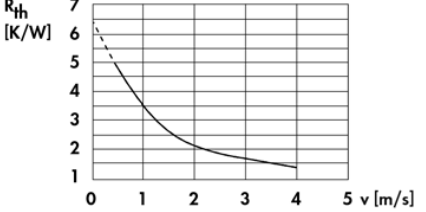
<p>art. no.</p> <p>ICK S D 12 x 12 x 7,5 WLF ... 12 x 12 weight: 1.8 g</p>		
<p>art. no.</p> <p>ICK S D 18 x 12 x 7,5 WLF ... 12 x 18 weight: 2.7 g</p>		
<p>art. no.</p> <p>ICK S D 24 x 18 x 7,5 WLF ... 18 x 24 weight: 4.4 g</p>		
<p>art. no.</p> <p>ICK S D 98 x 98 x 10 WLF ... 98 x 98 weight: 154 g</p>		

Thermal conduct. foil WLF 404/405 → E ?
Thermal conductive glue → E ?
Thermal conductive paste → E ?
Processor overview → B 2 - 7

SMD-heatsinks → B 29 - 31
Mounting material for semiconduct. → E ? - ?
Hole pattern → A 21
Technical introduction → A 2 - 7

Pin heatsinks

Round

art. no. ICK S R 28,5 x 6,5 WLF ... D 28,5 weight: 4.41 g		
art. no. ICK S R 28,5 x 10 WLF ... D 28,5 weight: 5.16 g		
art. no. ICK S R 28,5 x 12,5 WLF ... D 28,5 weight: 5.7 g		
art. no. ICK S R 28,5 x 18,5 WLF ... D 28,5 weight: 6.98 g		
art. no. ICK S R 32,5 x 10 WLF ... D 32 weight: 9.7 g		
art. no. ICK S R 32,5 x 20 WLF ... D 32 weight: 13.8 g		
art. no. ICK S R 36,5 x 20 WLF ... D 36,5 weight: 17.59 g		

B 17

Thermal conductive glue → E ?
 Thermal conductive paste → E ?
 SMD-heatsinks → B 29 - 31
 Thermal conduct. foil WLFT 404/405 → E ?

Mounting material for semiconduct. → E ? - ?
 Thermal conduct. foil WLFT 404/405 → E ?
 Hole pattern → A 21
 Technical introduction → A 2 - 7

Pin heatsinks

A

B

C

D

E

F

G

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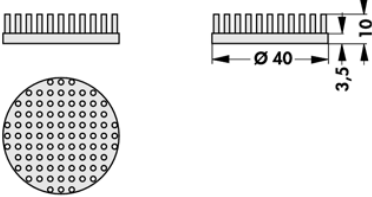
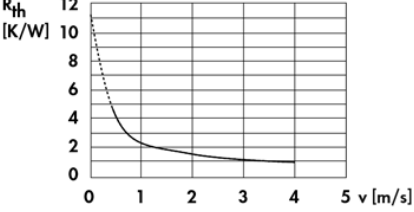
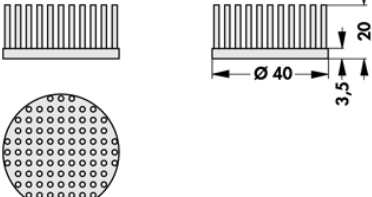
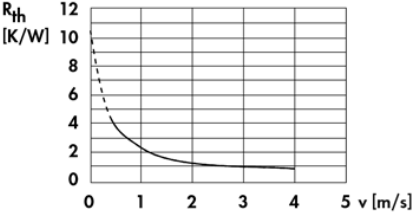
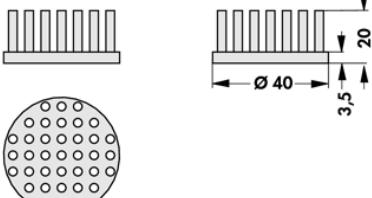
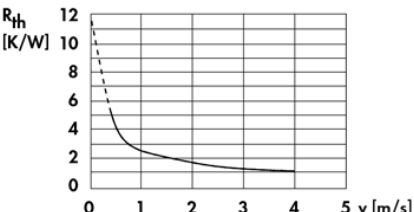
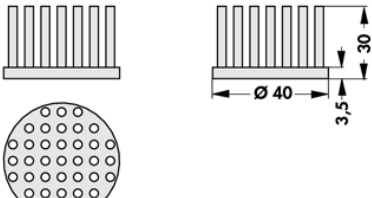
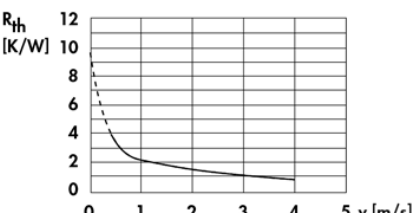
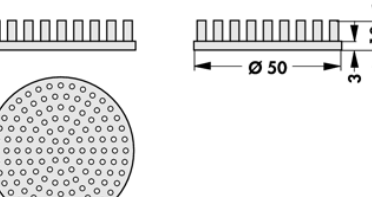
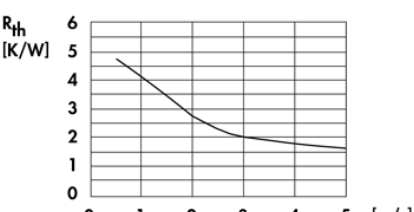
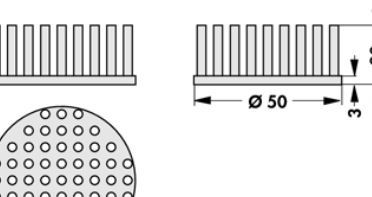
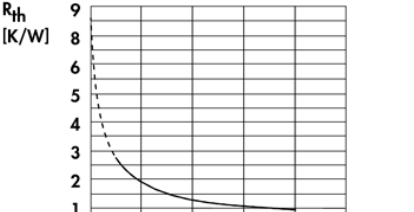
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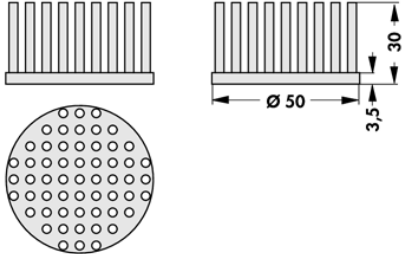
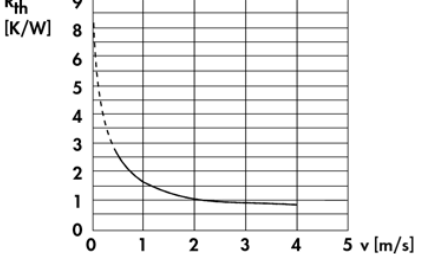
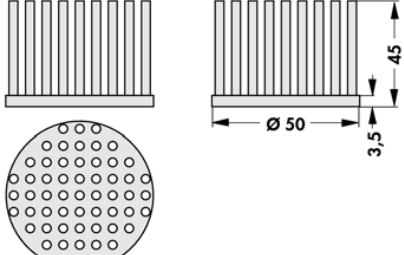
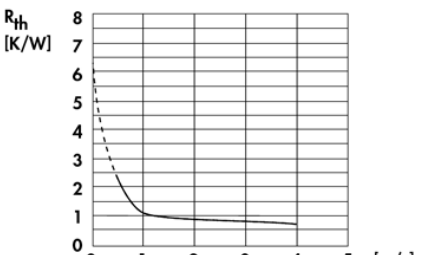
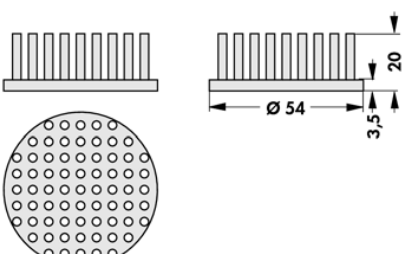
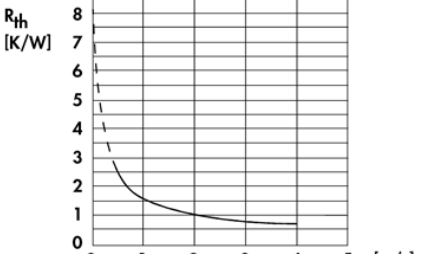
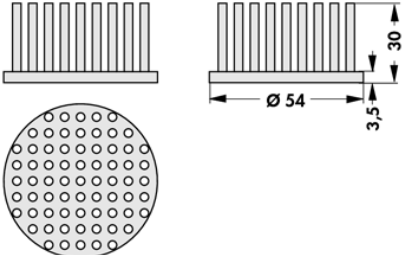
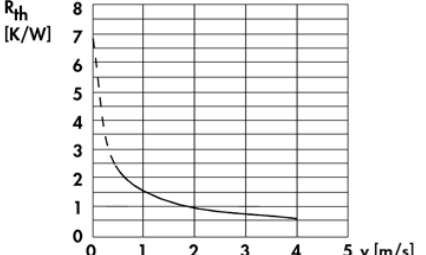
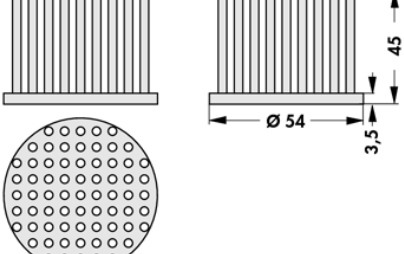
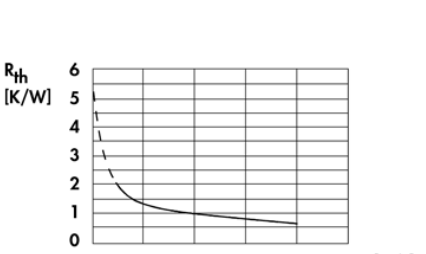
<p>art. no.</p> <p>ICK S R 40 x 10 WLF ... D 40 weight: 15.85 g</p>		
<p>art. no.</p> <p>ICK S R 40 x 20 WLF ... D 40 weight: 21.96 g</p>		
<p>art. no.</p> <p>ICK S R A 40 x 20 WLF ... D 40 weight: 22.18 g</p>		
<p>art. no.</p> <p>ICK S R 40 x 30 WLF ... D 40 weight: 29.24 g</p>		
<p>art. no.</p> <p>ICK S R 50 x 10 WLF ... D 50 weight: 22 g</p>		
<p>art. no.</p> <p>ICK S R 50 x 20 WLF ... D 50 weight: 34.39 g</p>		

Thermal conductive glue → E ?
 Thermal conductive paste → E ?
 SMD-heatsinks → B 29 - 31
 Thermal conduct. foil WLFT 404/405 → E ?

Mounting material for semiconduct. → E ? - ?
 Thermal conduct. foil WLFT 404/405 → E ?
 Hole pattern → A 21
 Technical introduction → A 2 - 7

B 18

Pin heatsinks

<p>art. no.</p> <p>ICK S R 50 x 30 WLF ... D 50 weight: 45.28 g</p>		
<p>art. no.</p> <p>ICK S R 50 x 45 WLF ... D 50 weight: 61.59 g</p>		
<p>art. no.</p> <p>ICK S R 54 x 20 WLF ... D 54 weight: 40.94 g</p>		
<p>art. no.</p> <p>ICK S R 54 x 30 WLF ... D 54 weight: 54.11 g</p>		
<p>art. no.</p> <p>ICK S R 54 x 45 WLF ... D 54 weight: 73.86 g</p>		

B 19

Thermal conductive glue → E ?
 Thermal conductive paste → E ?
 SMD-heatsinks → B 29 - 31
 Thermal conduct. foil WLFT 404/405 → E ?

Mounting material for semiconduct. → E ? - ?
 Thermal conduct. foil WLFT 404/405 → E ?
 Hole pattern → A 21
 Technical introduction → A 2 - 7



- suitable for free or forced convection
 - heat sink dimensions are fitted to the respective LED type
 - simple mounting by using thermally conductive adhesive foil, glue or screw mounting
 - specific versions on customer's request
 - special design, surfaces and modification to customer specification on request
- surface:** black anodised

art. no.			$R_{th} = 18,58 \text{ K/W}$
ICK LED R 23,5 x 14 WLF ... D 23			
art. no.			
ICK LED R 23,5 x 14 G WLF ... D 23			
art. no.			$R_{th} = 17,69 \text{ K/W}$
ICK LED R 27 x 10 WLF ... D 27			
art. no.			
ICK LED R 27 x 10 G WLF ... D 27			
art. no.			$R_{th} = 15,24 \text{ K/W}$
ICK LED R 28 x 15 WLF ... D 28			

Mounting material for semiconduct. → E ? - ?
 SMD-heatsinks → B 29 - 31
 Thermal conductive paste → E ?
 Processor overview → B 2 - 8

Thermally conductive material → E ?
 Thermal conduct. foil WLF 404/405 → E ?
 Hole pattern → A 21
 Technical introduction → A 2 - 7

B 20

A

Heatsinks for LEDs

B

C

D

E

F

G

H

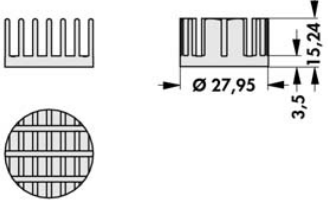
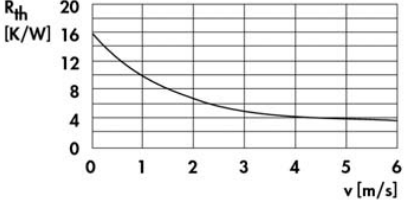
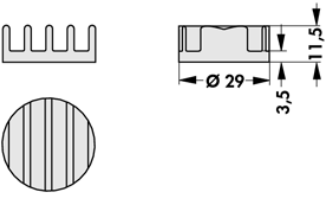
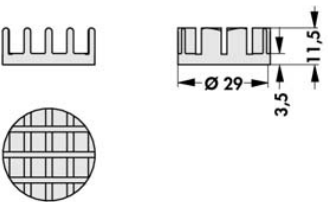
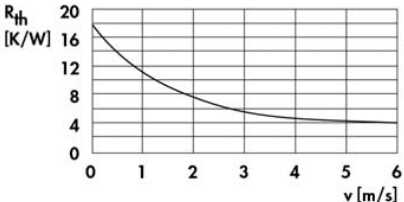
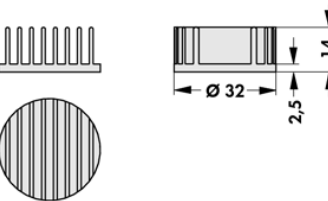
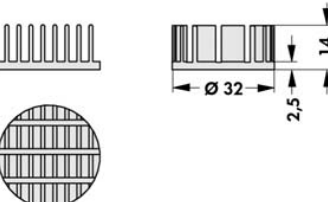
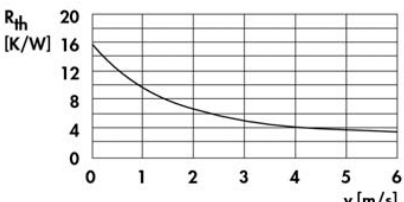
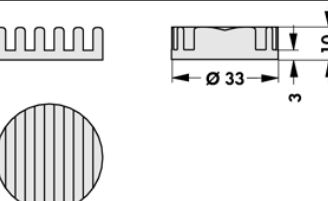
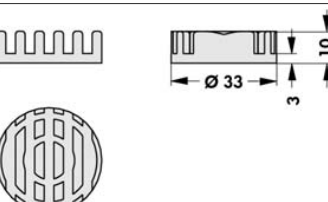
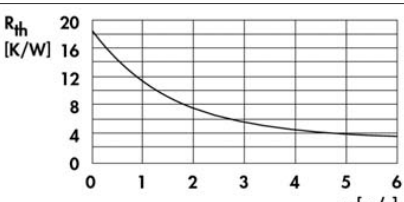
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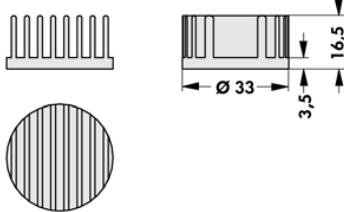
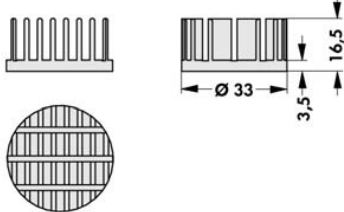
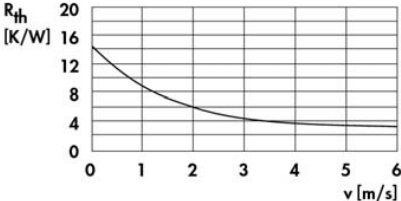
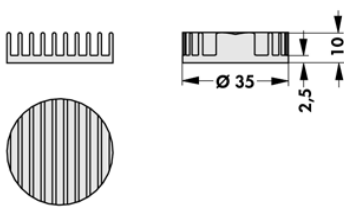
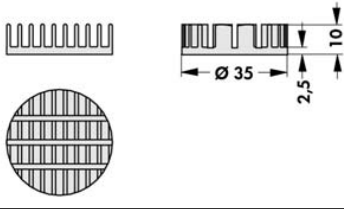
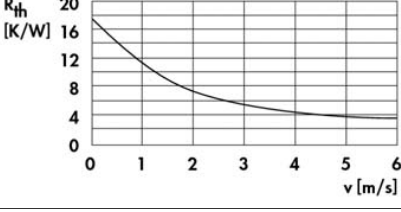
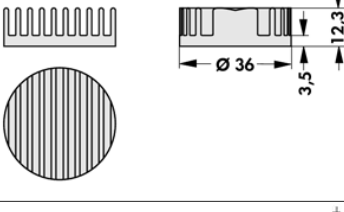
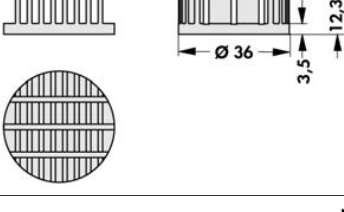

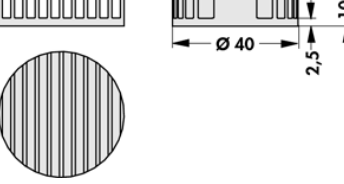
N

art. no. ICK LED R 28 x 15 G WLF ... D 28		
art. no. ICK LED R 29 x 11,5 WLF ... D 29		<p style="text-align: center;">R_{th} = 17,26 K/W</p>
art. no. ICK LED R 29 x 11,5 G WLF ... D 29		
art. no. ICK LED R 32 x 14 WLF ... D 32		<p style="text-align: center;">R_{th} = 15,23 K/W</p>
art. no. ICK LED R 32 x 14 G WLF ... D 32		
art. no. ICK LED R 33 x 10 WLF ... D 33		<p style="text-align: center;">R_{th} = 17,6 K/W</p>
art. no. ICK LED R 33 x 10 G WLF ... D 33		

B 21

Mounting material for semiconduct. → E ? - ?
 SMD-heatsinks → B 29 - 31
 Thermal conductive paste → E ?
 Processor overview → B 2 - 8

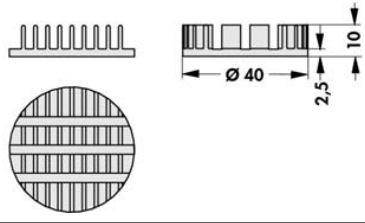
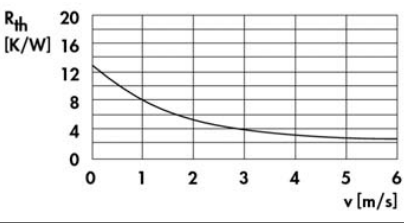
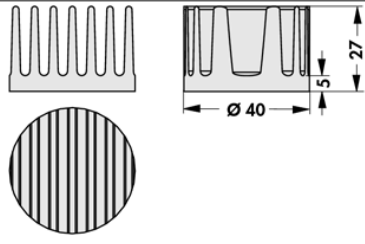
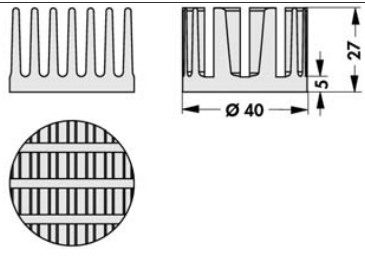
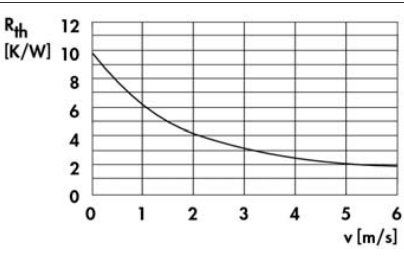
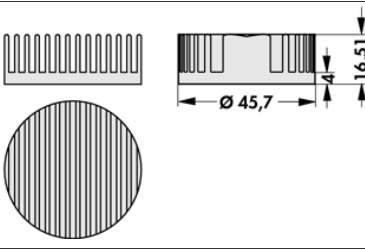
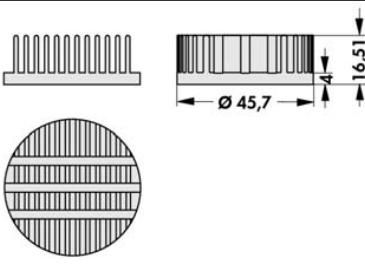
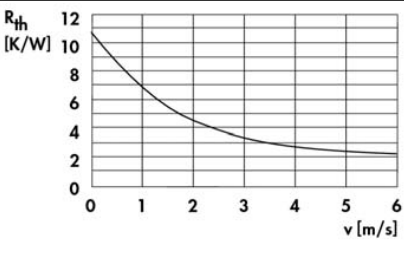
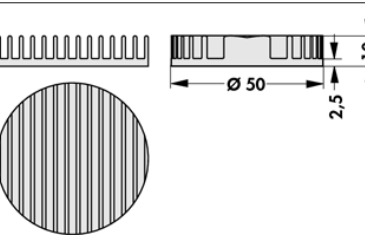
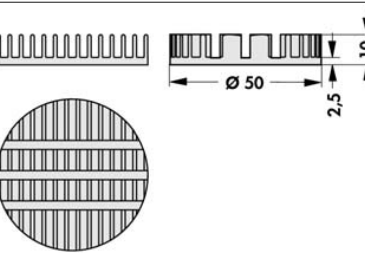
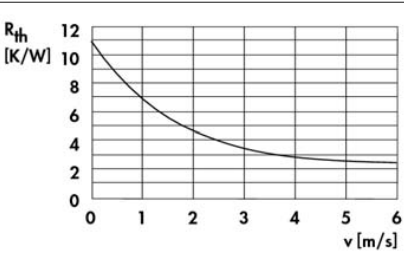
Thermally conductive material → E ?
 Thermal conduct. foil WLFT 404/405 → E ?
 Hole pattern → A 21
 Technical introduction → A 2 - 7

<p>art. no.</p> <p>ICK LED R 33 x 16,5 WLF ... D 33</p>		<p>$R_{th} = 13,87 \text{ K/W}$</p>
<p>art. no.</p> <p>ICK LED R 33 x 16,5 G WLF ... D 33</p>		
<p>art. no.</p> <p>ICK LED R 35 x 10 WLF ... D 35</p>		<p>$R_{th} = 16,9 \text{ K/W}$</p>
<p>art. no.</p> <p>ICK LED R 35 x 10 G WLF ... D 35</p>		
<p>art. no.</p> <p>ICK LED R 36 x 12 WLF ... D 36</p>		<p>$R_{th} = 12,88 \text{ K/W}$</p>
<p>art. no.</p> <p>ICK LED R 36 x 12 G WLF ... D 36</p>		
<p>art. no.</p> <p>ICK LED R 40 x 10 WLF ... D 40</p>		<p>$R_{th} = 12,28 \text{ K/W}$</p>

Mounting material for semiconduct. → E ? - ?
 SMD-heatsinks → B 29 - 31
 Thermal conductive paste → E ?
 Processor overview → B 2 - 8

Thermally conductive material → E ?
 Thermal conduct. foil WLF 404/405 → E ?
 Hole pattern → A 21
 Technical introduction → A 2 - 7

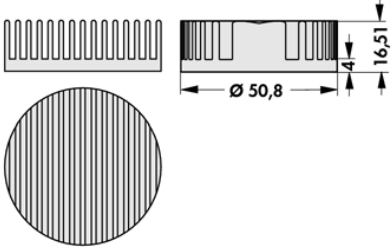
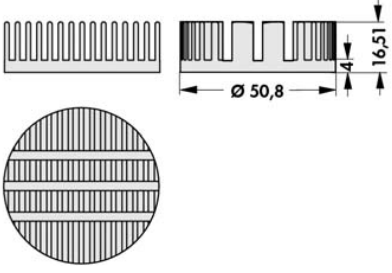
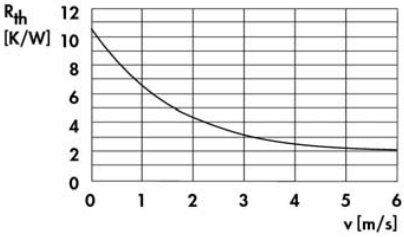
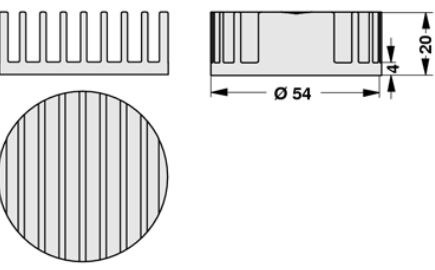
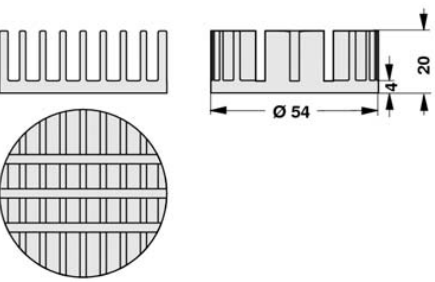
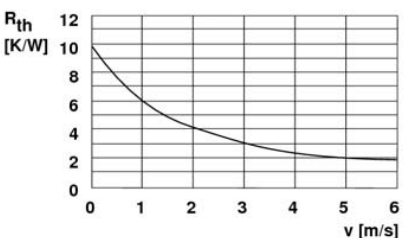
Heatsinks for LEDs

<p>art. no.</p> <p>ICK LED R 40 x 10 G WLF ... D 40</p>		
<p>art. no.</p> <p>ICK LED R 40 x 27 WLF ... D 40</p>		<p>$R_{th} = 9,41 \text{ K/W}$</p>
<p>art. no.</p> <p>ICK LED R 40 x 27 G WLF ... D 40</p>		
<p>art. no.</p> <p>ICK LED R 45,7 x 16,5 WLF ... D 45</p>		<p>$R_{th} = 10,46 \text{ K/W}$</p>
<p>art. no.</p> <p>ICK LED R 45,7 x 16,5 G WLF ... D 45</p>		
<p>art. no.</p> <p>ICK LED R 50 x 10 WLF ... D 50</p>		<p>$R_{th} = 10,57 \text{ K/W}$</p>
<p>art. no.</p> <p>ICK LED R 50 x 10 G WLF ... D 50</p>		

B 23

Mounting material for semiconduct. → E ? - ?
SMD-heatsinks → B 29 - 31
Thermal conductive paste → E ?
Processor overview → B 2 - 8

Thermally conductive material → E ?
Thermal conduct. foil WLFT 404/405 → E ?
Hole pattern → A 21
Technical introduction → A 2 - 7

<p>art. no.</p> <p>ICK LED R 50,8 x 16,5 WLF ... D 50</p>		<p>$R_{th} = 10,17 \text{ K/W}$</p>
<p>art. no.</p> <p>ICK LED R 50,8 x 16,5 G WLF ... D 50</p>		
<p>art. no.</p> <p>ICK LED R 54 x 20 WLF ... D 54</p>		<p>$R_{th} = 9,48 \text{ K/W}$</p>
<p>art. no.</p> <p>ICK LED R 54 x 20 G WLF ... D 54</p>		

Mounting material for semiconduct. → E ? - ?
 SMD-heatsinks → B 29 - 31
 Thermal conductive paste → E ?
 Processor overview → B 2 - 8

Thermally conductive material → E ?
 Thermal conduct. foil WLF 404/405 → E ?
 Hole pattern → A 21
 Technical introduction → A 2 - 7

A

Heatsinks for LEDs

B

C

D

E

F

G

H

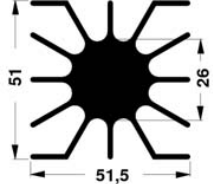
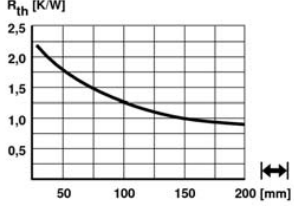
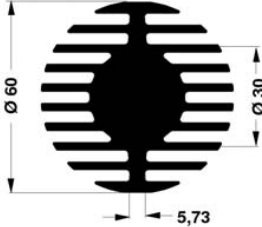
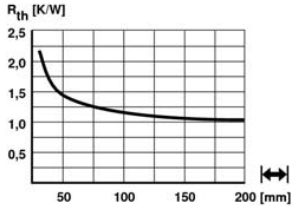
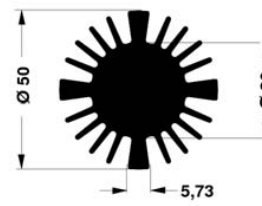
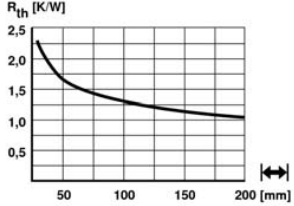
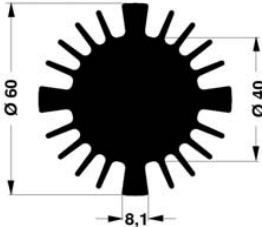
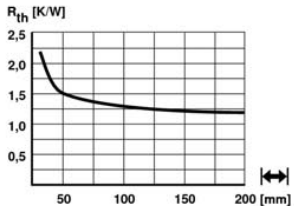
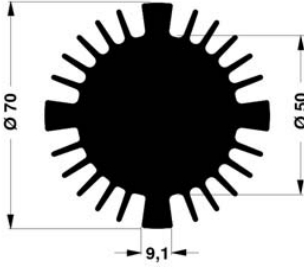
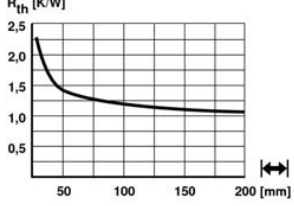

I

K

L

M

N

art. no. SK 46 ...		
art. no. SK 578 ...		
art. no. SK 577 ...		
art. no. SK 569 ...		
art. no. SK 570 ...		
please indicate: ...  10 15 20 25 37.5 50 100 mm		

special design, surfaces and modification to customer specification on request

surface: black anodised

B 25

 Pin heatsinks Ø
 Heatsinks for LED Ø
 Special heatsink design
 Thermal conductive paste

 → B 17 - 19
 → B 20 - 24
 → A 135 - 136
 → E ?

 Thermal conduct. foil WLFT 404/405
 Thermally conductive material
 SMD-heatsinks
 Technical annotations

 → E ?
 → E ?
 → B 29 - 31
 → A 2 - 7

Heatsinks for LEDs

A

B

C

D

E

F

G

H

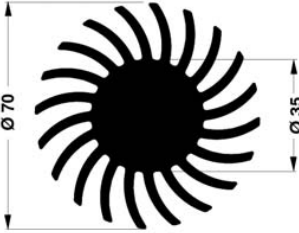
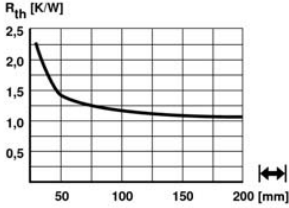

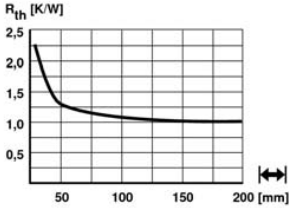

I

K

L

M

N

<p>art. no.</p> <p>SK 571 ...</p>	 
<p>art. no.</p> <p>SK 572 ...</p>	 
<p>please indicate: ... </p> <p>10 15 20 25 37.5 50 1000 mm</p>	

special design, surfaces and modification to customer specification on request

surface: black anodised

Pin heatsinks Ø
 Heatsinks for LED Ø
 Special heatsink design
 Thermal conductive paste

→ B 17 - 19
 → B 20
 → A 135 - 136
 → E ?

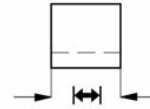
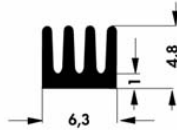
Thermal conduct. foil WLFT 404/405
 Thermally conductive material
 Technical annotations
 SMD-heatsinks

→ E ?
 → E ?
 → A 2 - 7
 → B 29

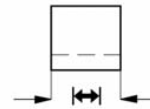
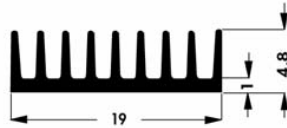
B 26

A

B

Heatsinks for DIL-IC


art. no.	for housings	↔ [mm]	R _{th} [K/W]
ICK 6 8 L	6/8 contacts	8.5	83
ICK 14 16 L	14/16 contacts	19.0	46
ICK 20 L	20 contacts	25.0	34

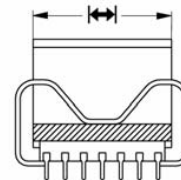
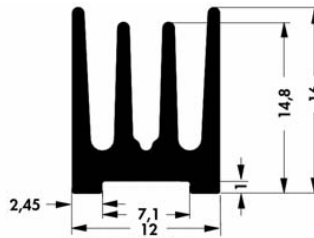


art. no.	for housings	↔ [mm]	R _{th} [K/W]
ICK 14 16 B	14/16 contacts	6.3	50.0
ICK 24 B	24 contacts	33.0	13.0
ICK 28 B	28 contacts	37.0	11.5
ICK 36 B	36 contacts	47.0	9.5
ICK 40 B	40 contacts	51.0	8.5
ICK 1000 B	–	1000.0	–

other length on request
surface: black anodised

with clip

H



art. no.	for housings	↔ [mm]	R _{th} [K/W]
ICK 14 H	14 contacts	18.0	20
ICK 16 H	16 contacts	20.5	18
ICK 18 H	18 contacts	23.0	16
ICK 1000 H	–	1000.0	–

other length on request
surface: black anodised

M

N

B 27


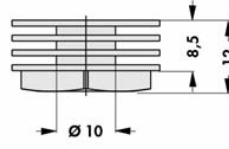
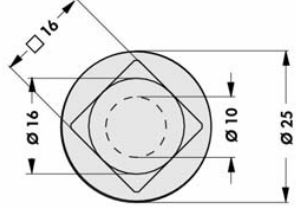

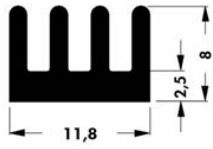
Aluminium oxide wafers
 Mica wafers
 Kapton insulator washers
 Insulating clamping parts

→ E ? - ?
 → E ?
 → E ?
 → E ?

Profiles for PCB components
 Heatsinks for PCB
 Hole pattern
 Profiles for PCB mounting

→ A ?
 → A ?
 → A 21
 → A ? - ?

Heatsinks for PLCC

		
<p>art. no.</p> <p>ICK R</p>	<p>↔ [mm]</p> <p>25</p>	<p>R_{th} [K/W]</p> <p>19</p>
		
<p>art. no.</p> <p>ICK PLCC 28</p>	<p>↔ [mm]</p> <p>11.8</p>	<p>R_{th} [K/W]</p> <p>25</p>

surface: black anodised

Thermal conduct. foil WLFT 404/405 → E ?
 Thermal conductive paste → E ?
 Mounting material for semiconduct. → E ? - ?
 Mounting parts for heatsinks → E ? - ?

Unsupported thermal conductive film → E ?
 Thermal conductive glue → E ?
 Heatsinks for PLCC → B 28
 Thermal. conductive silicone foam foil → E ?

B 28

A

B

C

D

E

F

G

H

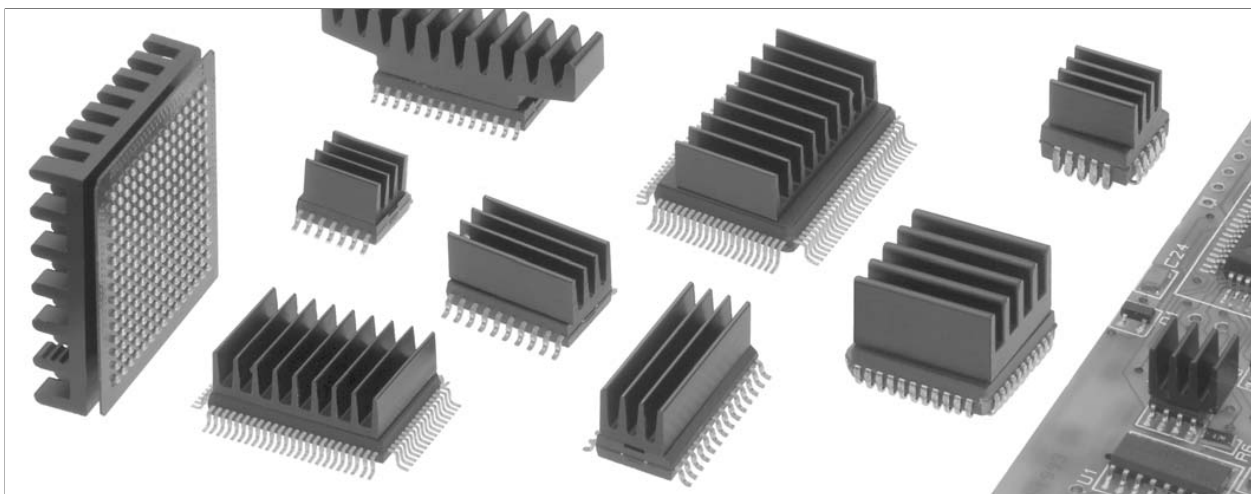
I

K

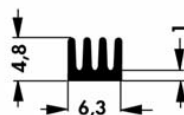
L

M

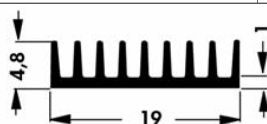
N

Heatsinks for SMD


- particularly suitable for SMD components
- low profile
- reduced weight
- effective heat dissipation
- can be glued directly onto the component
- soudable versions
- customer specific versions on request
- special packaging like tape and reel, bar magazin, tary etc. on request



art. no.	↕ [mm]	R_{th} [K/W]
ICK SMD A 5 ...	5	123
ICK SMD A 8 ...	8	87
ICK SMD A 10 ...	10	75
ICK SMD A 13 ...	13	63
ICK SMD A 17 ...	17	51
ICK SMD A 22 ...	22	34



art. no.	↕ [mm]	R_{th} [K/W]
ICK SMD B 5 ...	5	56
ICK SMD B 7 ...	7	47
ICK SMD B 10 ...	10	35
ICK SMD B 13 ...	13	29
ICK SMD B 19 ...	19	22

please indicate:

... surface treatment
SA=black anodised
MI=solderable surface

B 29

Aluminium oxide wafers
 Mica wafers
 Kapton insulator washers
 Insulating clamping parts

→ E ? - ?
 → E ?
 → E ?
 → E ?

Profiles for PCB components
 Heatsinks for PCB
 SMD-heatsinks
 Profiles for PCB mounting

→ A ?
 → A ?
 → B 29 - 31
 → A ? - ?

Heatsinks for SMD

art. no.	↳ [mm]	R _{th} [K/W]
ICK SMD C 7 ...	7	33
ICK SMD C 10 ...	10	26
ICK SMD C 17 ...	17	17
art. no.	↳ [mm]	R _{th} [K/W]
ICK SMD E 15 ...	15.3	27
ICK SMD E 22 ...	22.3	21
ICK SMD E 29 ...	29.0	18
art. no.	↳ [mm]	R _{th} [K/W]
ICK SMD F 8 ...	8	74
ICK SMD F 10 ...	10	71
ICK SMD F 17 ...	17	42
ICK SMD F 19 ...	19	37
ICK SMD F 21 ...	21	33
ICK SMD F 26 ...	26	26
art. no.	↳ [mm]	R _{th} [K/W]
ICK SMD G 8 ...	8	73
ICK SMD G 10 ...	10	70
ICK SMD G 13 ...	13	61
ICK SMD G 17 ...	17	41
ICK SMD G 19 ...	19	36
ICK SMD G 21 ...	21	32
please indicate:	... surface treatment SA=black anodised MI=solderable surface	

A

B

C

D

E

F

G

H

I

K

L

M

Thermal conduct. foil WLFT 404/405 → E ?
 Thermal conductive glue → E ?
 Thermal conductive paste → E ?
 Silicone wafers → E ? - ?

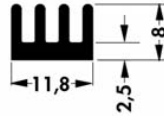
Profiles for PCB mounting → A ? - ?
 U-shaped heatsink → A ? - ?
 Heatsinks for PCB → A ? - ?
 Pin heatsinks for IC → B 11 - 18

B 30

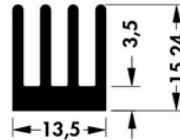
N

A

B

Heatsinks for SMD


art. no.	↔ [mm]	R_{th} [K/W]
ICK SMD H 8 ...	8	33.0
ICK SMD H 10 ...	10	29.0
ICK SMD H 17 ...	17	24.5
ICK SMD H 19 ...	19	23.0
ICK SMD H 22 ...	22	21.5
ICK SMD H 25 ...	25	20.0



art. no.	↔ [mm]	R_{th} [K/W]
ICK SMD K 8 ...	8	25.6
ICK SMD K 10 ...	10	23.4
ICK SMD K 13 ...	13	21.5
ICK SMD K 17 ...	17	19.4
ICK SMD K 19 ...	19	18.0
ICK SMD K 21 ...	21	16.5



art. no.	↔ [mm]	R_{th} [K/W]
ICK SMD M 8 ...	8	72.0
ICK SMD M 10 ...	10	66.0
ICK SMD M 17 ...	17	40.0
ICK SMD M 19 ...	19	35.0
ICK SMD M 21 ...	21	31.0
ICK SMD M 26 ...	26	30.2

please indicate: ... surface treatment
 SA=black anodised
 MI=solderable surface

G

H

I

K

Sample box SMD heatsinks


art. no.
ICK SMD BOX 1

Contains an assortment of SMD heatsinks with anodised and solderable surface as well as thermally conductive glue (WLK) and double-sided adhesive thermal foil (WLF).


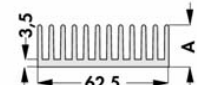
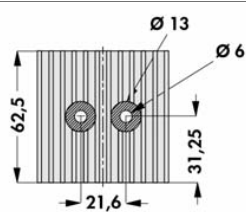

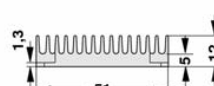
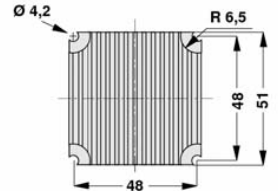
M

N

B 31

Thermal conduct. foil WLFT 404/405 → E ?
 Thermal conductive glue → E ?
 Thermal conductive paste → E ?
 Silicone wafers → E ? - ?

Profiles for PCB mounting → A ? - ?
 U-shaped heatsink → A ? - ?
 Heatsinks for PCB → A ? - ?
 Pin heatsinks for IC → B 11 - 18


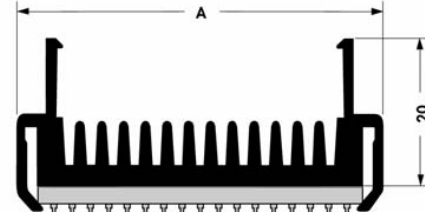
			
art. no.	R_{th} [K/W]	suitable for processor type	dim. [mm]
ICK A 10	6.1	DEC Alpha-AXP	A 10
ICK A 20	4.5	DEC Alpha-AXP	20
			
art. no.	R_{th} [K/W]	suitable for processor type	
ICK PPC 51	8.1	Power PC	

fixing method:

SB = screw fixing

special design and modification to customer specification on request

surface: black anodised

				
art. no.	R_{th} [K/W]	suitable for processor type	dim. [mm]	
			A	B
SK 428 43 SA	9.0	Intel® 80486	47.3	43
SK 430 50 SA	7.6	Intel® Pentium®	52.0	50
SK 449 50 SA	7.9	Intel® Pentium® 200/ MMX	52.0	50

thermal conductive foil for

SK 428 43 SA: **art. no.:** **WLFA 17 x 17**

SK 430 50 SA: **art. no.:** **WLFA 21 x 21**

SK 449 50 SA: **art. no.:** **WLFA PEN 200**

special design and modification to customer specification on request

surface: black anodised

Fan cooler, universal → B 35
 Processor overview → B 2 - 7
 Fan cooler for Pentium PRO → B 37
 fan cooler for Pentium and MMX → B 37

Thermal conduct. foil WLFT 404/405 → E ?
 Thermal conductive glue → E ?
 Fan cooler for P II-mobile module → B 39

B 32

A

Passive heatsinks for processors

B

C

D

E

F

G

H


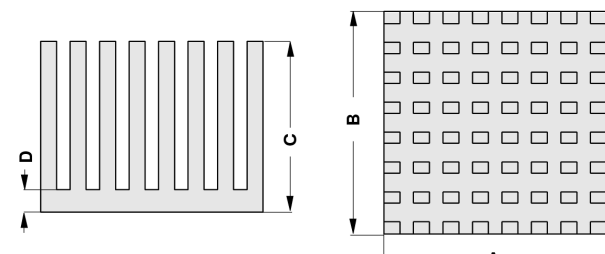
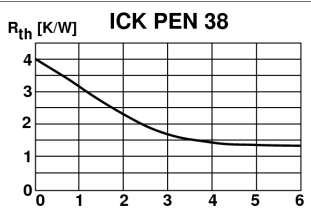
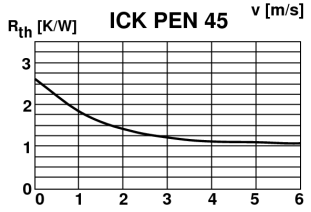

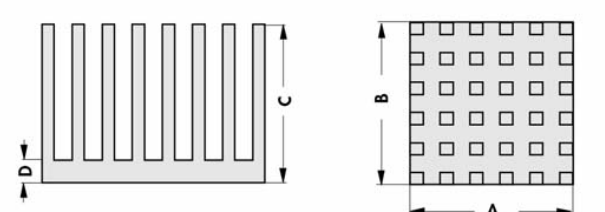
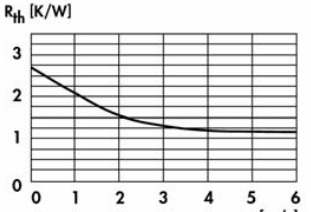
I

K


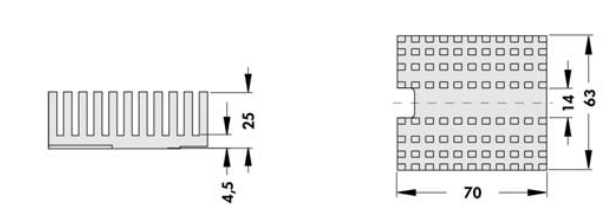
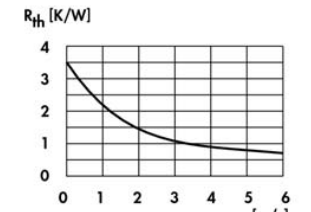
L

M

N

										
				art. no.	R_{th} [K/W]	suitable for processor type	dim. [mm]			
				ICK PEN 38 F	4.0	MMX/ Intel® Pentium®/ AMD® K6-2/ AMD® K6-III/ IDT C6/ IDT W2A	A	B	C	D
				ICK PEN 38 K	4.0	MMX/ Intel® Pentium®/ AMD® K6-2/ AMD® K6-III/ IDT C6/ IDT W2A	49.5	49.5	38	5.0
				ICK PEN 38 W	4.0	MMX/ Intel® Pentium®/ AMD® K6-2/ AMD® K6-III/ IDT C6/ IDT W2A	49.5	49.5	38	5.0
ICK PEN 45 W	3.5	MMX/ Intel® Pentium®/ AMD® K6-2/ AMD® K6-III/ IDT C6/ IDT W2A	50.0	50.0	45	3.5				
										
			art. no.	R_{th} [K/W]	suitable for processor type	dim. [mm]				
			ICK PRO 40 W	2.7	Intel® Pentium® PRO	A	B	C	D	
			65	67.5	40	4.5				

K = with fixing clamp (incl. one-sided adherent conductive foil); **F** = with double-sided thermally conductive adhesive foil;
W = for thermally conductive adhesive (please order separately) **WLK ...** → D ?

		
ICK PEN 3 FC	3.5	Intel® Pentium® III FC PGA (Mendocino, Coppermine)



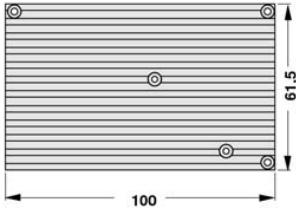
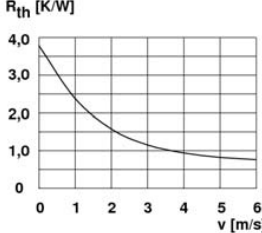
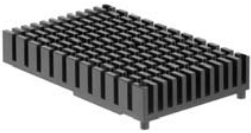
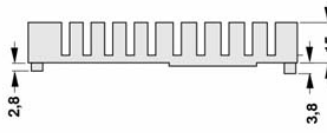
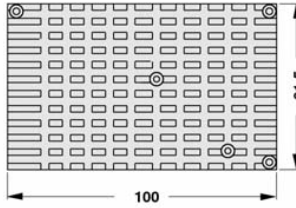
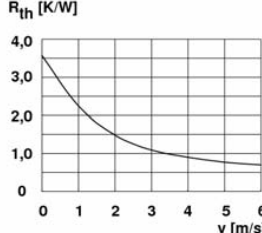
fixing method: K = with fixing clamp (incl. onesided adherent thermal foil)
customer specific versions and modifications on request

B 33

Fan cooler, universal
Processor overview
Fan cooler for Pentium PRO
fan cooler for Pentium and MMX

→ B 35
→ B 2 - 7
→ B 37
→ B 37

Thermal conduct. foil WLFT 404/405 → E ?
Thermal conductive glue → E ?
Fan cooler for P II-mobile module → B 39

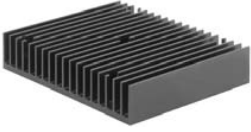
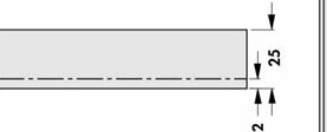
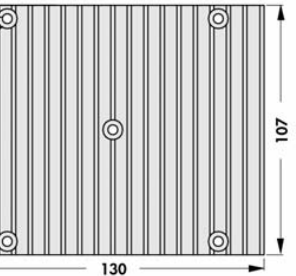
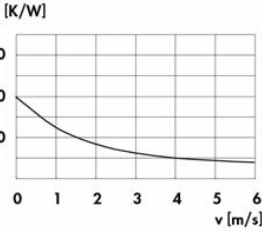
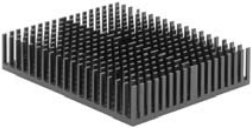
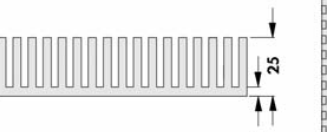
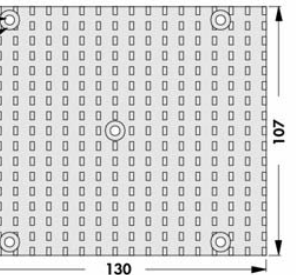
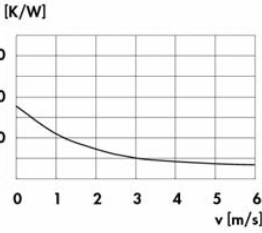
			
art. no.	R_{th} [K/W]	suitable for processor type	
ICK PEN 2 MM	3.8	Intel® Pentium® II-Mobile Module/ Intel® Pentium® III-Mobile Module	
			
art. no.	R_{th} [K/W]	suitable for processor type	
ICK PEN 2 MM 1	3.6	Intel® Pentium® II-Mobile Module/ Intel® Pentium® III-Mobile Module	

fixing method:

SB = screw fixing

suitable cuts for thermal conductive foil on request: **art. no.: GEL 05 MM, art. no.: WSF 32 MM**

special design and modification to customer specification on request

			
art. no.	R_{th} [K/W]	suitable for processor type	
ICK PEN 3 XE	2	Intel® Pentium® III-Xeon™ Slot II Format	
			
art. no.	R_{th} [K/W]	suitable for processor type	
ICK PEN 3 XE 1	1.8	Intel® Pentium® III-Xeon™ Slot II Format	

fixing method:

SB = screw fixing

special design and modification to customer specification on request

Heatsinks for BGA
Fan cooler for Pentium IV
Fan cooler, universal
Heatsinks for PGA

→ B 7 – 10
→ B 40
→ B 35
→ B 1 – 6

Fan cooler for Pentium PRO
Fan cooler for P II-mobile module
Fan cooler for Pentium III-Xeon

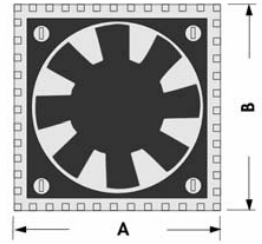
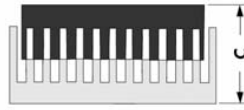
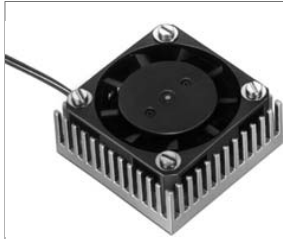
→ B 37
→ B 39
→ B 39

B 34

A

Active heatsinks for processors

B



C

D

art. no.	R_{th} [K/W]	suitable for processor type	dim. [mm]		
			A	B	C
LA ICK 15 x 15 ...	2.3	universal	37.92	38.10	20
LA ICK 17 x 17 ...	1.6	universal	43.10	43.10	20
LA ICK 18 x 18 ...	1.5	universal	45.70	45.70	20
LA ICK 21 x 21 ...	1.4	universal	53.34	53.34	20

please indicate:

... mounting method	... operating voltage of the fan motor	... mountings (optional)
F = thermally conductive foil	5 = 5 V	SM = molex connection plug
W = thermally conductive adhesive	12 = 12 V	A = alarm exit

E

alarm output can not be ordered for LA ICK 15 x 15

used fans:

5 volt = Sepa MFB 40 H 05

12 volt = Sepa MFB 40 H 12

F = with double-sided thermally conductive adhesive foil

W = for thermally conductive adhesive (please order separately) **WLK ...** → D ?

F

G

H

I

K

L

M

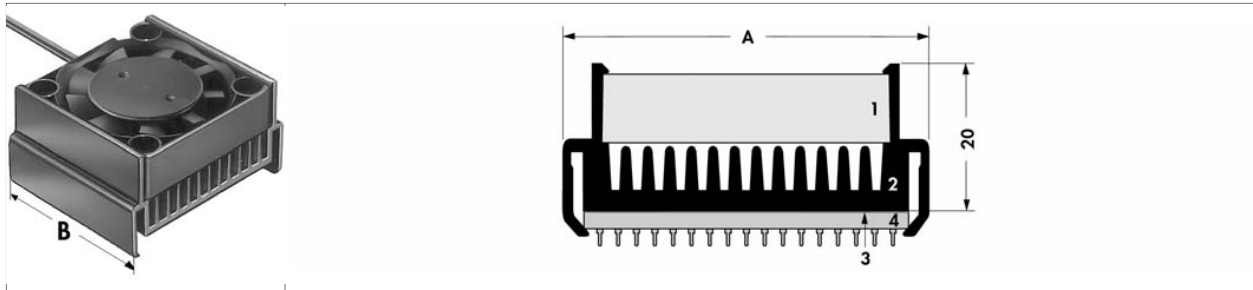
N

B 35

Heatsinks for BGA
Heatsinks for PGA
Heatsinks for microprocessors
Heatsinks for Pentium PRO

→ B 7 - 10
→ B 1 - 6
→ B 32
→ B 32

Heatsinks for DEC Alpha-AXP → B 32
Heatsinks for Pentium II → B 34
Heatsinks for Pentium III-Xeon → B 34 - ?
Thermal conduct. foil WLFT 404/405 → B 40



art. no.	R _{th} [K/W]	suitable for processor type	dim. [mm]	
			A	B
LAK ICK 17 X 17 ...	1.9	Intel® 80486	47.3	43
LAK ICK 21 X 21 ...	1.6	Intel® Pentium®	52.0	50
LAK ICK PEN 200 ...	1.8	Intel® Pentium® 200/ MMX	52.0	50

please indicate:

... fan type
5 KUL =Sepa MFB 40 H 05
12 KUL=Sepa MFB 40 H 12
5 GEL =ebmpapst 405 F
12 GEL=ebmpapst 412 F

- 1) fan
- 2) heatsink
- 3) thermal conductive foil
- 4) PGA-cases

- integrated retaining spring fixes the fan cooler safely on the IC
- good heat transition ensured by inserted adherent thermally conductive foil
- easy assembly and exchange of fan by insertion into integrated retaining device

Technical data of the fans → B 41

Heatsinks for BGA → B 7 – 10
 Heatsinks for PGA → B 1 – 6
 Heatsinks for microprocessors → B 32
 Heatsinks for Pentium PRO → B 32

Heatsinks for DEC Alpha-XP → B 32
 Heatsinks for Pentium II → B 34
 Heatsinks for Pentium III-Xeon → B 34 – ?
 Thermal conduct. foil WLFT 404/405 → B 40

Heatsinks for DEC Alpha-XP → B 32
 Heatsinks for Pentium II → B 34
 Heatsinks for Pentium III-Xeon → B 34 – ?
 Thermal conduct. foil WLFT 404/405 → B 40

B 36

A

Active heatsinks for processors

easy assembly on ZIF socket by fixing clamp

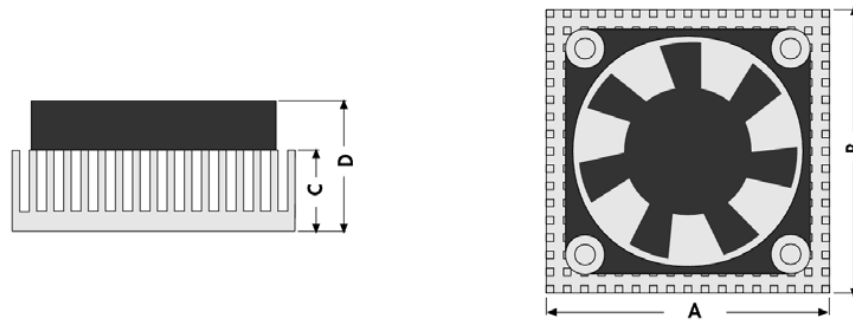
B



C

D

E



F

art. no.	R_{th} [K/W]	suitable for processor type	dim. [mm]			
			A	B	C	D
LA ICK PEN 8 ...	2.50	Intel® Pentium®/ MMX/ AMD® K6-2/ AMD® K6-III/ IDT C6/ IDT W2A/ Cyrix M II and similar	50.8	50.8	8.00	9.00
LA ICK PEN 16 ...	1.20	Intel® Pentium®/ MMX/ AMD® K6-2/ AMD® K6-III/ IDT C6/ IDT W2A/ Cyrix M II and similar	50.8	50.8	16.51	26.51
LA ICK PEN 18 ...	1.60	Intel® Pentium®/ MMX/ AMD® K6-2/ AMD® K6-III/ IDT C6/ IDT W2A/ Cyrix M II and similar	50.8	50.8	8.00	18.00
LA ICK PEN 38 ...	1.10	Intel® Pentium®/ MMX/ AMD® K6-2/ AMD® K6-III/ IDT C6/ IDT W2A/ Cyrix M II and similar	49.5	49.5	38.00	48.00
LA ICK PEN 45 ...	0.94	Intel® Pentium®/ MMX/ AMD® K6-2/ AMD® K6-III/ IDT C6/ IDT W2A/ Cyrix M II and similar	50.0	50.0	45.00	55.00
LA ICK PEN 50 ...	0.85	Intel® Pentium®/ MMX/ AMD® K6-2/ AMD® K6-III/ IDT C6/ IDT W2A/ Cyrix M II and similar	49.5	49.5	50.00	60.00
LA ICK PRO 25 ...	0.97	Intel® Pentium® PRO	63.5	67.5	25.00	35.00
please indicate:	... mounting method K = fixing clamp F = thermally conductive foil W = thermally conductive adhesive	... operating voltage of the fan motor 5 = 5 V 12 = 12 V	... mountings (optional) SM = molex connection plug A = alarm exit			

G

H

I

K

L

fixing clamp not suitable for LA ICK PEN 8

used fans:

5 Volt = Sepa MFB 50 E 05

12 Volt = Sepa MFB 50 E 12

LA ICK PEN 8:

5 Volt = Sepa HFB 44 X 05 A

12 Volt = Sepa HFB 44 B 12 A

K = with fixing clamp (incl. one-sided adherent conductive foil); **F** = with double-sided thermally conductive adhesive foil

W = for thermally conductive adhesive (please order separately) **WLK ...** → D ?

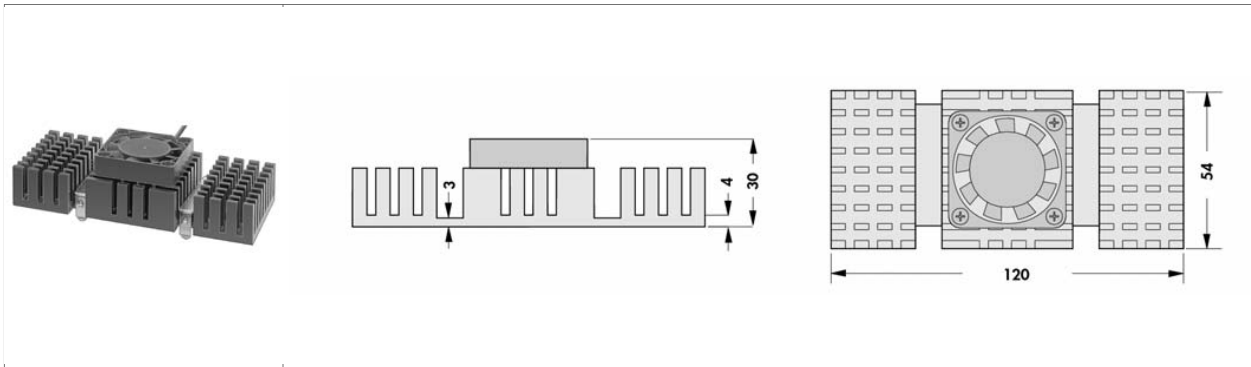
M

N

B 37

Technical data of the fans → B 41
Heatsinks for Pentium PRO → B 33
Fan cooler for AMD Athlon/Duron → B 40
Fan cooler for Pentium III-Xeon → B 39

Fan cooler for P II-mobile module → B 39
Fan cooler, universal → B 35
Processor overview → B 2 - 7



art. no.	R_{th} [K/W]	suitable for processor type
LA ICK PEN 2 1 K ...	1.1	Intel® Pentium® II/ AMD® Athlon®
please indicate:	... operating voltage of the fan motor 5 = 5 V 12 = 12 V	... mountings (optional) SM = molex connection plug A = alarm exit

fixing method:

K = with fixing clamp (incl. one sided adherent thermal foil)

used fans:

5 Volt = Sepa MFB 40 H 05

12 Volt = Sepa MFB 40 H 12

Technical data of the fans → B 41
 Heatsinks for Pentium PRO → B 33
 Fan cooler for AMD Athlon/Duron → B 40
 Fan cooler for Pentium III-Xeon → B 39

Fan cooler for P II-mobile module → B 39
 Fan cooler, universal → B 35
 Processor overview → B 2 - 7

B 38

A

Active heatsinks for processors

B

art. no.	R_{th} [K/W]	suitable for processor type
LA ICK PEN 2 MM ...	2.1	Intel® Pentium® II-Mobile Module/ Intel® Pentium® III-Mobile Module
art. no.	R_{th} [K/W]	suitable for processor type
LA ICK PEN 2 MM 1 ...	1.2	Intel® Pentium® II-Mobile Module/ Intel® Pentium® III-Mobile Module
please indicate:	... operating voltage of the fan motor 5 = 5 V 12 = 12 V	... mountings (optional) SM = molex connection plug A = alarm exit

used fans:

LA ICK PEN 2 MM:

5 Volt = Sepa HFB 44 X 05 A

12 Volt = Sepa HFB 44 B 12 A

LA ICK PEN 2 MM 1:

5 Volt = Sepa MFB 40 H 05

12 Volt = Sepa MFB 40 H 12

suitable cuts for thermal conductive: **art. no.:** GEL 05 MM; **art. no.:** WSF 32 MM

G

H

I

K

art. no.	R_{th} [K/W]	suitable for processor type
LA ICK PEN 3 XE ...	0.8	Intel® Pentium® III-Xeon™
please indicate:	... operating voltage of the fan motor 5 = 5 V 12 = 12 V	... mountings (optional) SM = molex connection plug A = alarm exit

fixing method:**SB** = screw fixing

used fans:

5 Volt = Sepa MFB 50 E 05

12 Volt = Sepa MFB 50 E 12

L

M


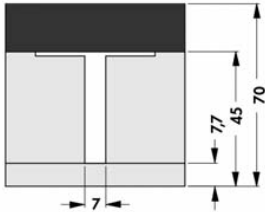
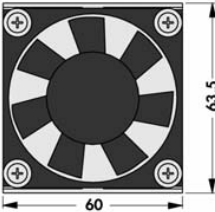

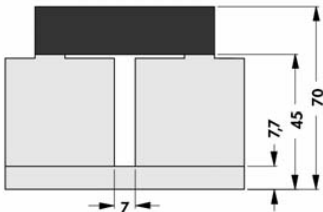
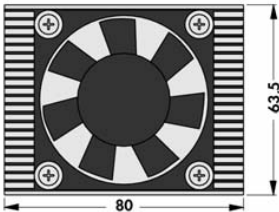

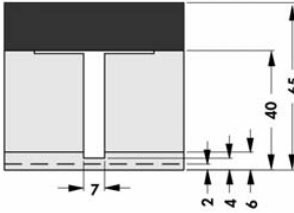
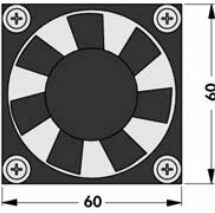

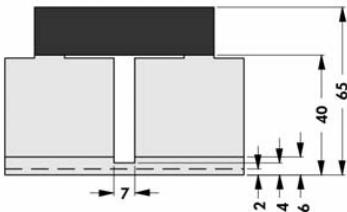
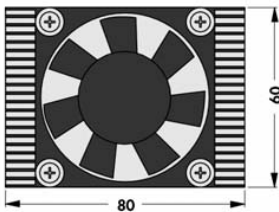
N

B 39

Heatsinks for Pentium III-Xeon → B 34
 Heatsinks for P II-Mobile Module → B 34
 Lamella heatsinks → A ?
 Technical data of the fans → B 41

Processor overview → B 2 - 7
 Heatsinks for PGA → B 1 - 6
 Heatsinks for power-pc → B 32
 Fan cooler, universal → B 35

→ B 2 - 7
 → B 1 - 6
 → B 32
 → B 35

		
art. no. LA ICK PEN 4 K ...	R_{th} [K/W] 0.69	suitable for processor type Intel® Pentium® IV
		
art. no. LA ICK PEN 4 1 K ...	R_{th} [K/W] 0.6	suitable for processor type Intel® Pentium® IV
		
art. no. LA ICK AMD 1 K ...	R_{th} [K/W] 0.8	suitable for processor type AMD® Athlon®/ AMD® Duron®
		
art. no. LA ICK AMD 2 K ...	R_{th} [K/W] 0.7	suitable for processor type AMD® Athlon®/ AMD® Duron®
please indicate:	... mountings (optional) SM=molex connection plug	

fixing method:

K = with fixing clamp

operating voltage of the fan motor: 12 Volt (Papst 612 NHH)

with copper base plate

customer specific designs and modifications on request

Heatsinks for Pentium III-Xeon → B 34
 Heatsinks for P II-Mobile Module → B 34
 Lamella heatsinks → A ?
 Technical data of the fans → B 41

Processor overview → B 2 - 7
 Heatsinks for PGA → B 1 - 6
 Heatsinks for power-pc → B 32
 Fan cooler, universal → B 35

B 40

Technical data of the fans



molex crimp case series: 6471; molex crimp terminals: 2759

5 volt fan

	Sepa MFB 25 A 05 H	Sepa MFB 40 H 05	Sepa MFB 40 H 05 A	Sepa MFB 50 E 05	Sepa HFB 44 X 05 A	ebmpapst 405 F
circuit voltage	4.5 - 5.5 V DC	4.5 - 5.5 V DC	4.5 - 5.5 V DC	4.5 - 5.5 V DC	4.5 - 5.5 V DC	4.5 - 5.5 V DC
bearing type	double ball bearing	double ball bearing	double ball bearing	double ball bearing	ball bearing	double slide bearing
fan dimensions	25 x 25 x 10 mm	40 x 40 x 10 mm	40 x 40 x 10 mm	50 x 50 x 10 mm	44 x 44 x 6,2 mm	40 x 40 x 10 mm
cur. consumpt.	85 mA	120 mA	90 mA	50 mA	110 mA	140 mA
max. iinitial current	220 mA	250 mA	250 mA	120 mA	160 mA	–
max. volume flow	32 l/min 1.92 m ³ /h	110 l/min 6.6 m ³ /h	184 l/min 11 m ³ /h	169 l/min 10,1 m ³ /h	50 l/min 3.0 m ³ /h	132 l/min 8 m ³ /h
max. static pressure	2.3 mm H ₂ O 22.6 Pa	3.0 mm H ₂ O 29.4 Pa	3.1 mm H ₂ O 30.5 Pa	1.6 mm H ₂ O 15.6 Pa	2.6 mm H ₂ O 25.5 Pa	3.06 mm H ₂ O 30 Pa
noise level	17 dB(A), 1 m lateral	21 dB(A), 1 m lateral	24 dB(A), 1 m lateral	16 dB(A), 1 m lateral	28 dB(A), 1 m lateral	22,1 dB(A), 1 m lateral
temperature range	-40°C ... +80°C	-40°C ... +80°C	-40°C ... +80°C	-40°C ... +80°C	-40°C ... +80°C	-20°C ... +70°C
failure rate (L₁₀)	95.000 h	95.000 h	95.000 h	95.000 h	75.000 h	45.000 h (20 °C)
MTBF	280.000 h (20°C) 80.000 h (70°C)	280.000 h (20°C) 80.000 h (70°C)	280.000 h (20°C) 80.000 h (70°C)	280000	210.000 h (60°C)	–
weight	8 g	13 g	13 g	19 g	7 g	17 g
cases	plastic PBT (UL E54695)	plastic PBT (UL E54695)	plastic PBT (UL E54695)	plastic PBT (UL E54695)	plastic PBT (UL E54695)	plastic PBT (UL E38324)

Sepa-fan 24 h BURN-IN tested

12 volt fan

	Sepa MFB 25 F 12	Sepa MFB 40 H 12	Sepa MFB 40 H 12 A	Sepa MFB 50 E 12	Sepa HFB 44 B 12 A	ebmpapst 412 F
circuit voltage	10.2 - 13.8 V DC	10.2 - 13.8 V DC	10.2 - 13.8 V DC	10.2 - 13.8 V DC	10.2 - 13.8 V DC	10 - 14 V DC
bearing type	double ball bearing	double ball bearing	double ball bearing	ball bearing	ball bearing	double slide bearing
fan dimensions	25 x 25 x 10 mm	40 x 40 x 10 mm	40 x 40 x 10 mm	50 x 50 x 10 mm	44 x 44 x 6,2 mm	40 x 40 x 10 mm
cur. consumpt.	70 mA	40 mA	40 mA	40 mA	40 mA	60 mA
max. iinitial current	150 mA	90 mA	90 mA	100 mA	70 mA	–
max. volume flow	68 l/min 4 m ³ /h	185 l/min 11 m ³ /h	185 l/min 11 m ³ /h	238 l/min 14,3 m ³ /h	50 l/min 3.0 m ³ /h	132 l/min 8 m ³ /h
max. static pressure	2.24 mm H ₂ O 41.5 Pa	2.9 mm H ₂ O 28 Pa	2.9 mm H ₂ O 28 Pa	2.7 mm H ₂ O 26.9 Pa	2.6 mm H ₂ O 25.5 Pa	3.06 mm H ₂ O 30 Pa
noise level	23 dB(A), 1 m lateral	24 dB(A), 1 m lateral	24 dB(A), 1 m lateral	25 dB(A), 1 m lateral	28 dB(A), 1 m lateral	22,1 dB(A), 1 m lateral
temperature range	-40 °C ... +70 °C	-40°C ... +80°C	-40°C ... +80°C	-40°C ... +80°C	-40°C ... +80°C	-20°C ... +70°C
failure rate (L₁₀)	95.000 h (20°C) 20.000 h (70°C)	95.000h (20°C) 29.000h (70°C)	95.000h (20°C) 29.000h (70°C)	95.000h (20°C) 29.000h (70°C)	75.000 h	45.000 h (20 °C)
MTBF	280.000 h (20°C) 55.000 h (70°C)	280.000 h (20°C) 80.000 h (70°C)	280.000 h (20°C) 80.000 h (70°C)	280.000 h (20°C) 80.000 h (70°C)	210.000 h (60°C)	–
weight	8 g	13 g	13 g	19 g	7 g	17 g
cases	plastic PBT (UL E54695)	plastic PBT (UL E54695)	plastic PBT (UL E54695)	plastic PBT (UL E54695)	plastic PBT (UL E54695)	plastic PBT (UL E38324)

Sepa-fan 24 h BURN-IN tested

Fans with pulse output - Technical data of fans with pulse output:

- pulse output for activation of the alarm control
- pulse similar to a square pulse with three times the frequency of the rotor speed
- when the rotor is blocked, the output signal may be L ($\leq 0,8$ V) or H ($V_{cc}-1$ V)
- the pulse output must not be connected to GND or Vcc without protective resistor ($\beta 10$ K)
- in order to avoid short circuits, the pulse output not being used must be insulated

B 41

Fan cooler for AMD Athlon/Duron → **B 40**
 Fan cooler, universal → **B 35**
 Fan cooler for Pentium III-Xeon → **B 39**
 Fan cooler for P II-mobile module → **B 39**

Fan cooler for Pentium IV → **B 40**
 Fan cooler for Pentium PRO → **B 37**
 fan cooler for Pentium and MMX → **B 37**