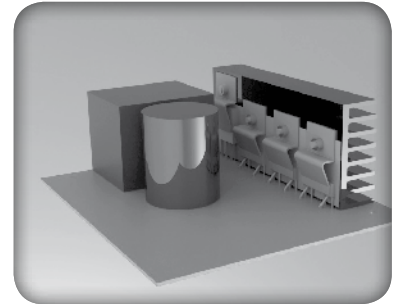
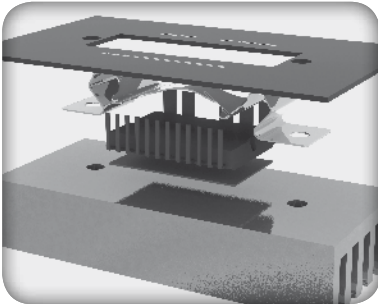


# POWERCLIPS®

Kunze POWERCLIPS® are ideal components for integrated heat management solutions:

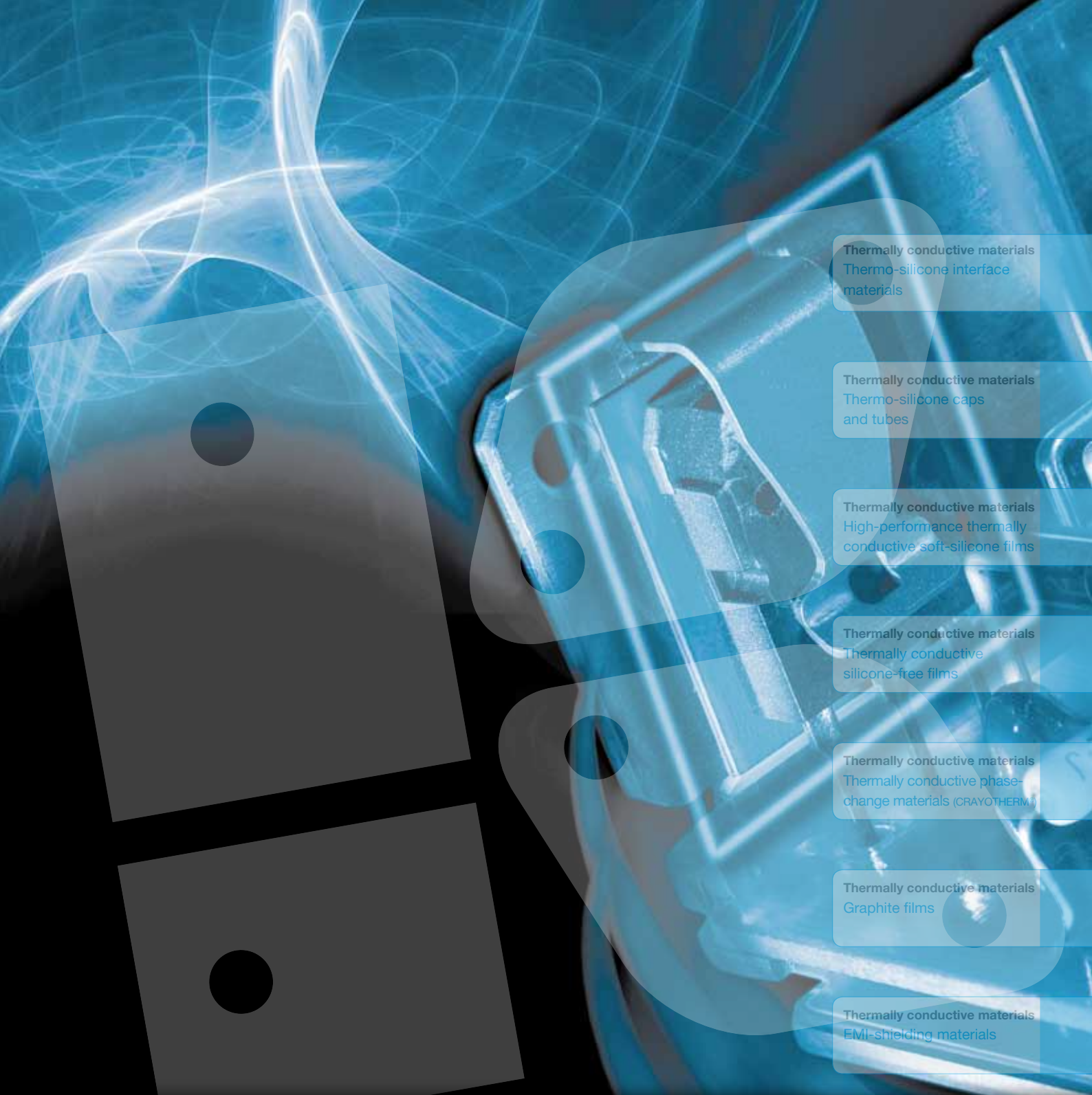
- Optimum interaction of transistor clips, interface materials and heat sinks through intelligent clip design
- Perfect application-specific implementation based on force-distance measurement
- Over 30 types of POWERCLIPS® constantly in stock
- Customized CAD-design and development of POWERCLIPS® on request
- Corrosion resistant steel CrNi 1.4310
- Quick prototype development
- All clips optionally available with insulation



## APPLICATION EXAMPLES

Process-reliable, mechanical connection of heat source (power semiconductors etc.) to heat sink.

- Power supplies
- UPS
- Battery chargers
- Frequency converters



Thermally conductive materials  
Thermo-silicone interface materials

Thermally conductive materials  
Thermo-silicone caps and tubes

Thermally conductive materials  
High-performance thermally conductive soft-silicone films

Thermally conductive materials  
Thermally conductive silicone-free films

Thermally conductive materials  
Thermally conductive phase-change materials (CRAYOTHERM)

Thermally conductive materials  
Graphite films

Thermally conductive materials  
EMI-shielding materials

## TECHNICAL DATA

Part	POWERCLIPS®	
General Properties		
Material	Corrosion resistant steel CrNi 1.4310	
Mechanical Properties		
Tensile strength	N/mm <sup>2</sup>	1300 - 1500
Elongation	%	> 40
Young modulus	kN/mm <sup>2</sup>	190

Thermally conductive materials  
Other products

Thermally conductive materials  
POWERCLIPS®

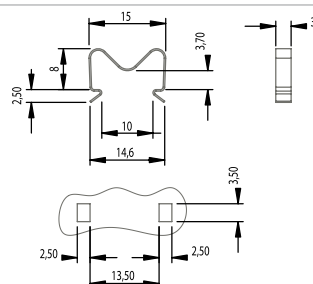
Thermally conductive materials  
Heat sinks

# POWERCLIPS®

## Finger Clips

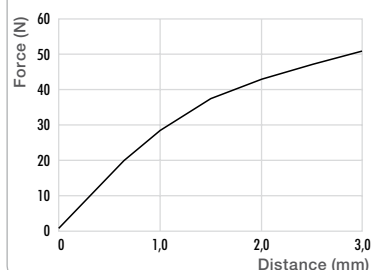


**Part-No. KU 3-381  
TO-220**

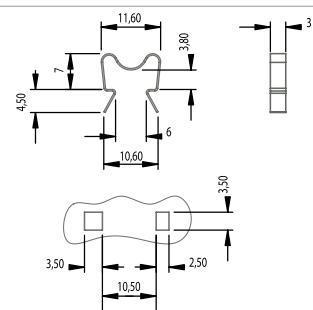


Mat. 0.3 mm, for sheet gauge 1.5-2.0 mm

**clamping force vs. distance**

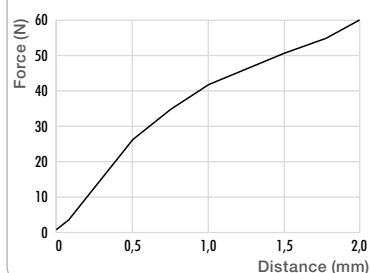


**Part-No. KU 3-383  
TO-126**



Mat. 0.3 mm, for sheet gauge 2.0 mm

**clamping force vs. distance**



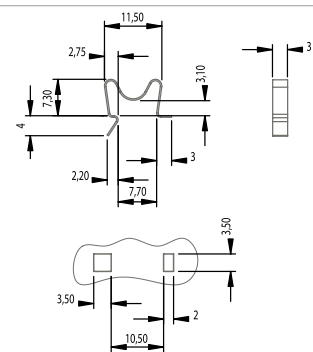
We disclaim all liability for the correctness of the information contained herein.

We reserve the right to make technical changes without notice.

All dimensions in mm.

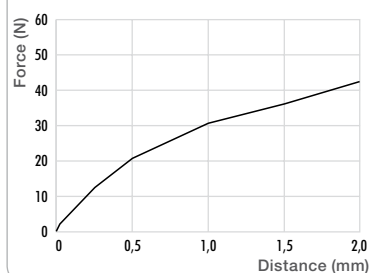


**Part-No. KU 3-384  
TO-126**

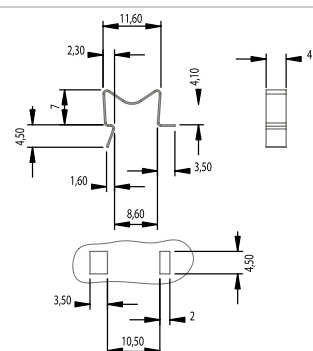


Mat. 0.3 mm, for sheet gauge 2.0 mm

**clamping force vs. distance**

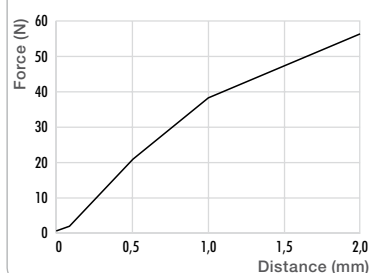


**Part-No. KU 3-385  
TO-126**



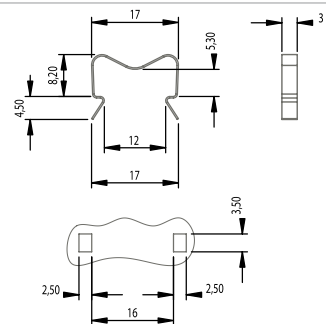
Mat. 0.3 mm, for sheet gauge 2.0 mm

**clamping force vs. distance**



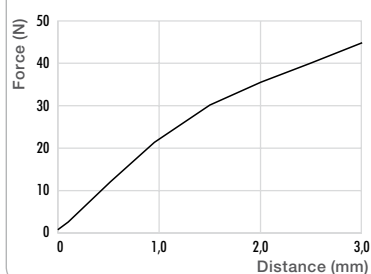


Part-No. KU 3-386  
TO-220

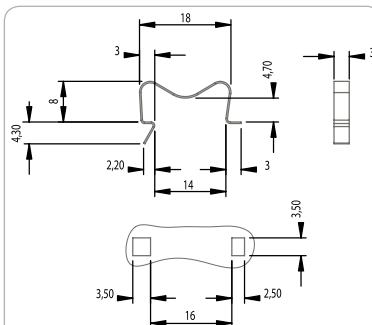


Mat. 0.3 mm, for sheet gauge 1.5-2.0 mm

clamping force vs. distance

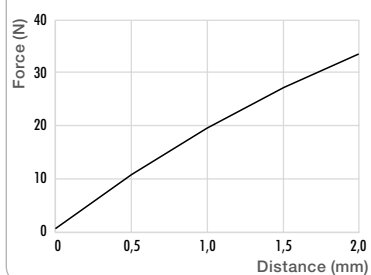


Part-No. KU 3-387  
TO-220

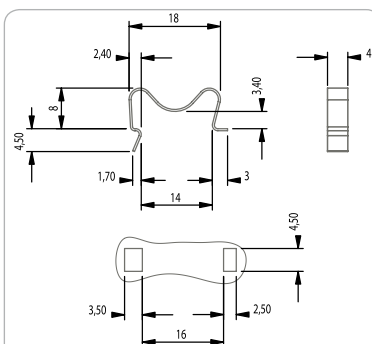


Mat. 0.3 mm, for sheet gauge 1.5-2.0 mm

clamping force vs. distance

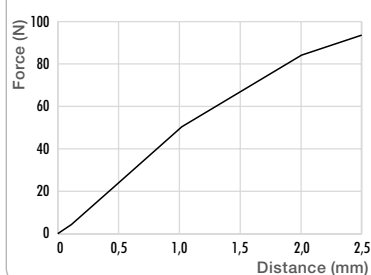


Part-No. KU 3-388  
TO-220

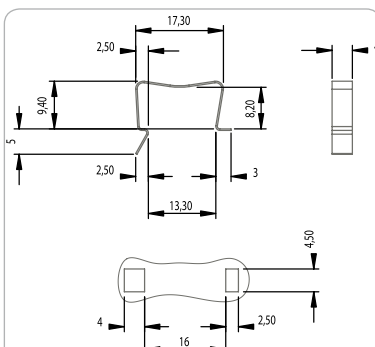


Mat. 0.4 mm, for sheet gauge 1.5-2.0 mm

clamping force vs. distance

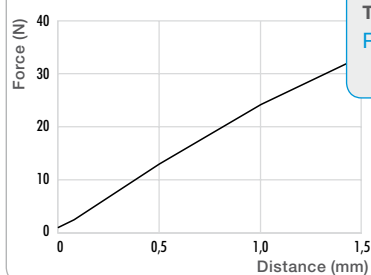


Part-No. KU 3-389  
TO-220



Mat. 0.3 mm, for sheet gauge 4.0 mm

clamping force vs. distance



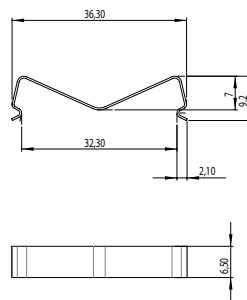
Thermally conductive materials  
POWERCLIPS®

# POWERCLIPS®

## Finger Clips

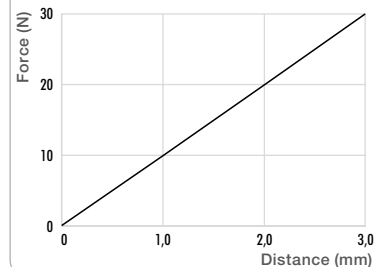


**Part-No. KU 3-391  
TO-126**

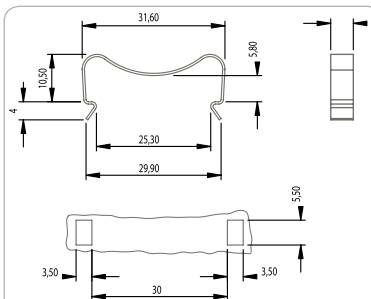


Mat. 0.4 mm, for sheet gauge 4.0 mm

**clamping force vs. distance**

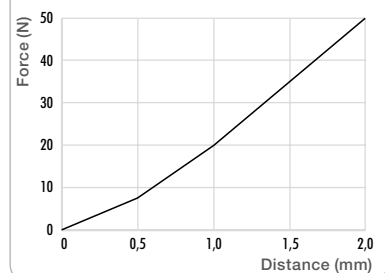


**Part-No. KU 3-392  
TO-3P · TO-247/248**



Mat. 0.5 mm, for sheet gauge 2.0 mm

**clamping force vs. distance**



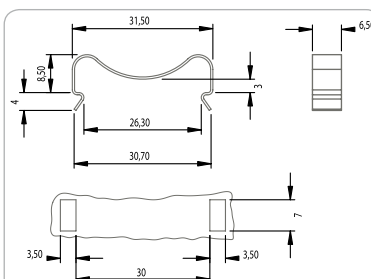
We disclaim all liability for the correctness of the information contained herein.

We reserve the right to make technical changes without notice.

All dimensions in mm.

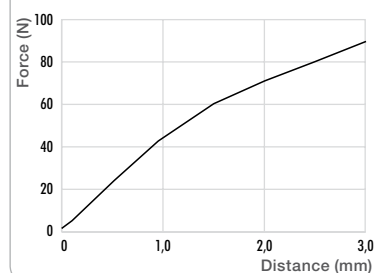


**Part-No. KU 3-393  
Low-profile bridge rectifier**

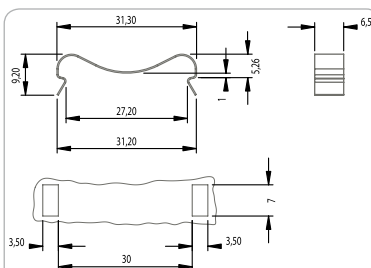


Mat. 0.5 mm, for sheet gauge 1.5 mm

**clamping force vs. distance**

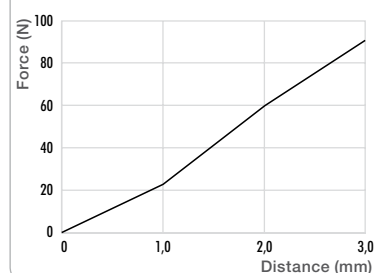


**Part-No. KU 3-394  
Multiwatt**



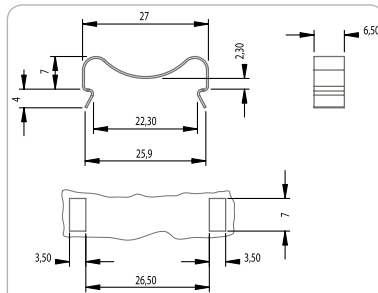
Mat. 0.3 mm, for sheet gauge 1.5-2.0 mm

**clamping force vs. distance**



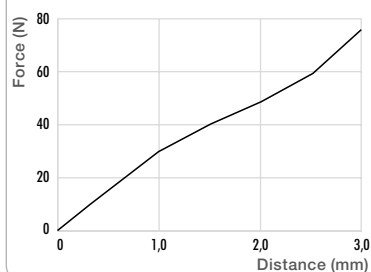


Part-No. KU 3-395  
TO-3P

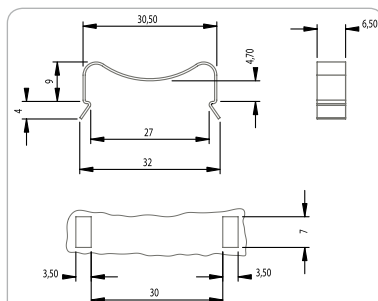


Mat. 0.4 mm, for sheet gauge 1.0-2.0 mm

clamping force vs. distance

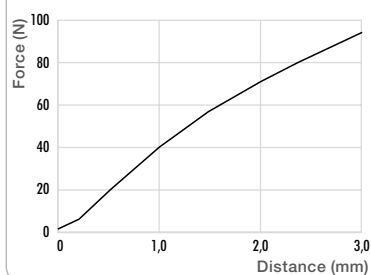


Part-No. KU 3-396  
TO-3P · TO-247/248

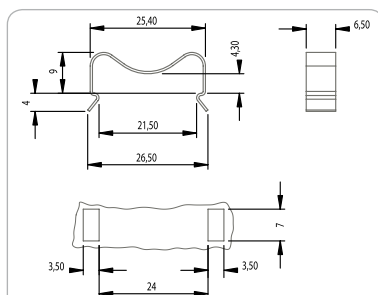


Mat. 0.5 mm, for sheet gauge 2.0 mm

clamping force vs. distance

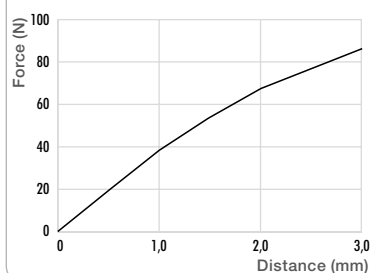


Part-No. KU 3-396/24  
TO-3P

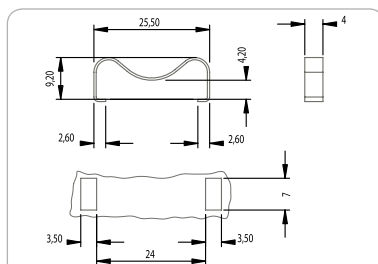


Mat. 0.5 mm, for sheet gauge 2.0 mm

clamping force vs. distance

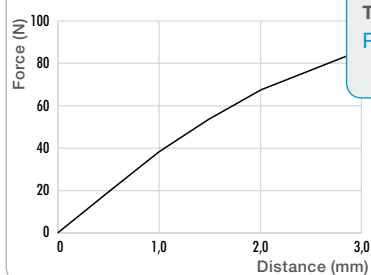


Part-No. KU 3-396/24/4  
TO-3P



Mat. 0.5 mm, for sheet gauge 2.0 mm

clamping force vs. distance



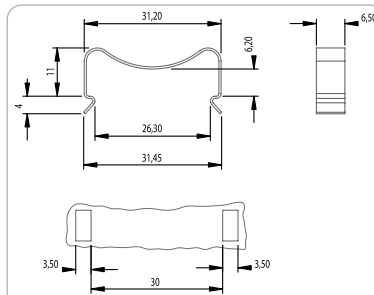
Thermally conductive materials  
POWERCLIPS®

# POWERCLIPS®

## Finger Clips

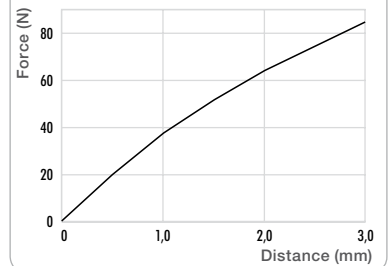


**Part-No. KU 3-397**  
**TO-3P · TO-247 / 248**

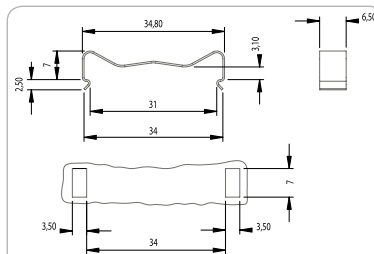


Mat. 0.5 mm, for sheet gauge 4.0 mm

clamping force vs. distance

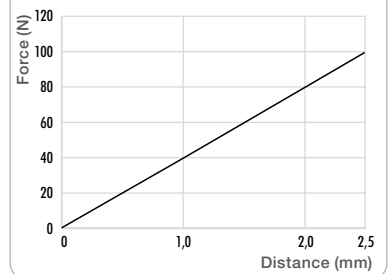


**Part-No. KU 3-398**  
**2 x TO-220**



Mat. 0.4 mm, for sheet gauge 1.0-1.5 mm

clamping force vs. distance



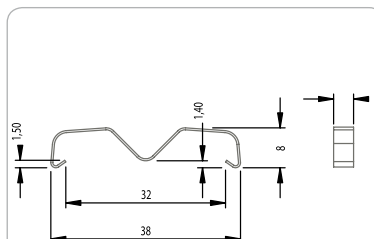
We disclaim all liability for the correctness of the information contained herein.

We reserve the right to make technical changes without notice.

All dimensions in mm.

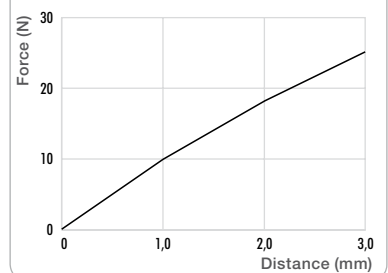


**Part-No. KU 3-399**  
**TO-220 / TO-3P**



Mat. 0.4 mm

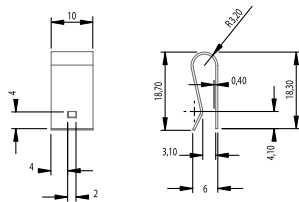
clamping force vs. distance





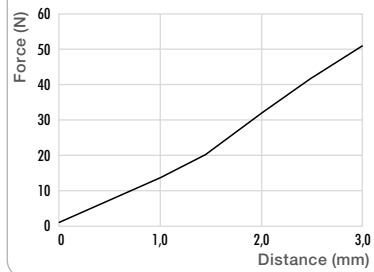


Part-No. KU 4-440/3.1  
TO-220 / TO-3P

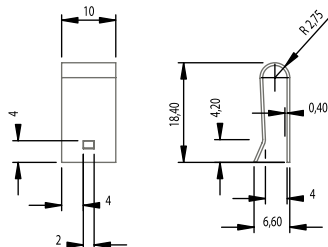


Mat. 0.5 mm, hardened spring steel

clamping force vs. distance

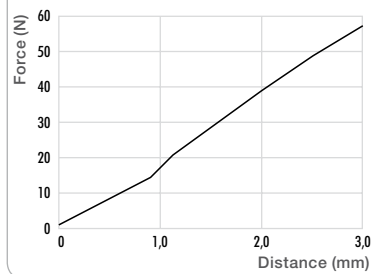


Part-No. KU 4-440/4.0  
TO-220 / TO-3P

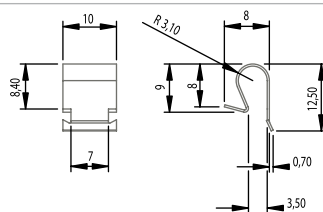


Mat. 0.5 mm, hardened spring steel

clamping force vs. distance

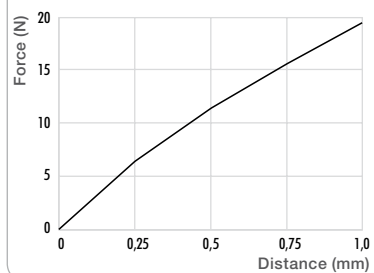


Part-No. KU 4-441  
TO-220 / TO-3P

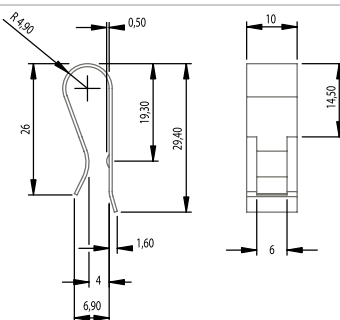


Mat. 0.4 mm

clamping force vs. distance

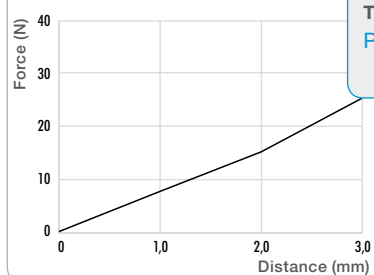


Part-No. KU 4-443  
TO-220 / TO-3P



Mat. 0.6 mm, hardened spring steel

clamping force vs. distance



Thermally conductive materials  
POWERCLIPS®

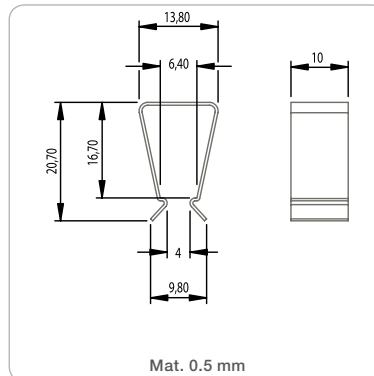


# POWERCLIPS®

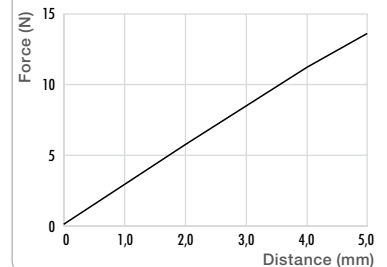
## Finger Clips



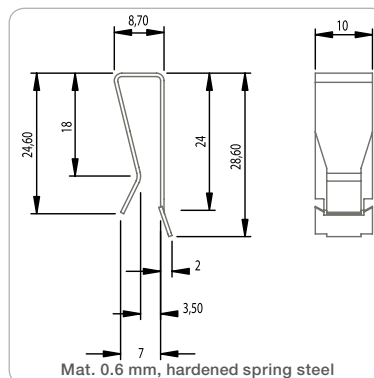
**Part-No. KU 4-445**  
TO-220 / TO-3P



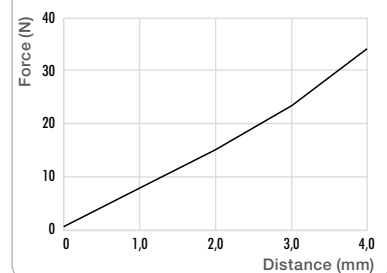
clamping force vs. distance



**Part-No. KU 4-450**  
TO-220 / TO-3P



clamping force vs. distance



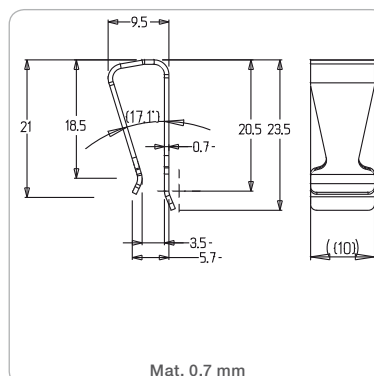
We disclaim all liability for the correctness of the information contained herein.

We reserve the right to make technical changes without notice.

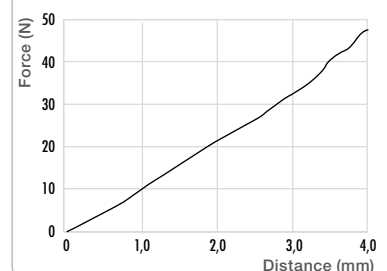
All dimensions in mm.



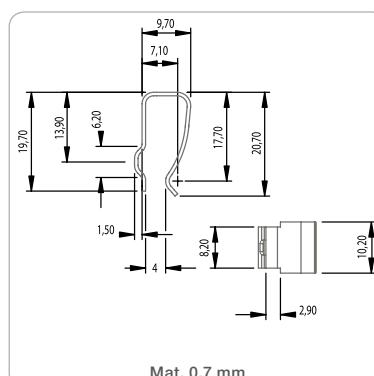
**Part-No. KU 4-451**



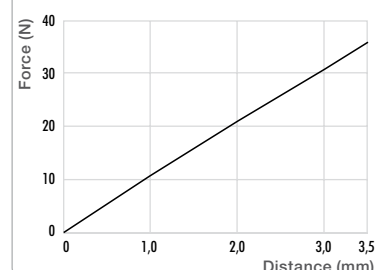
clamping force vs. distance



**Part-No. KU 4-453**  
TO-220 / TO-3P

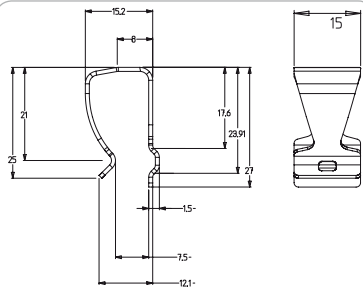


clamping force vs. distance



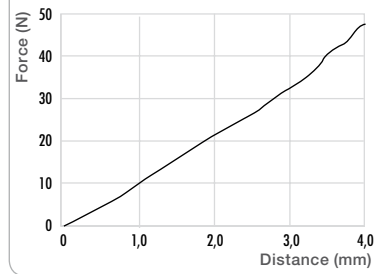


Part-No. KU 4-461

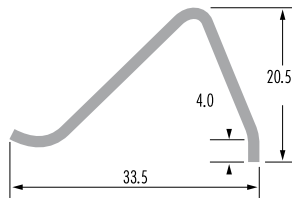


Mat. 0.9 mm

clamping force vs. distance



Part-No. KU 4-490  
TO-220 / TO-3P

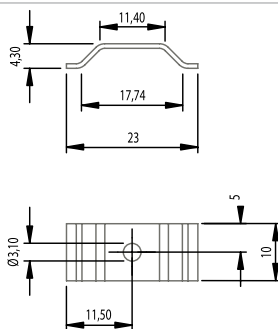


# POWERCLIPS®

## Gull wing clips and multiple transistor clips

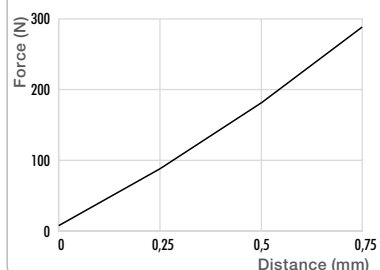


Part-No. KU 4-430



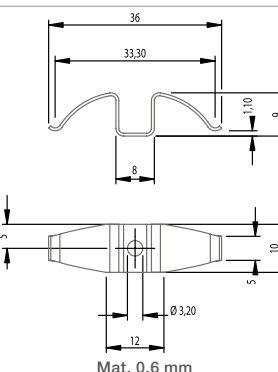
Mat. 0.8 mm

clamping force vs. distance



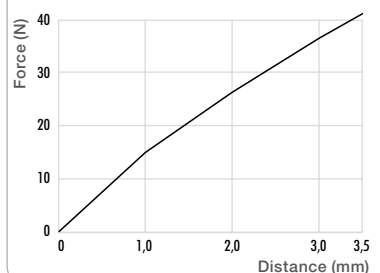
Gull Wing Clip

Part-No. KU 4-495



Mat. 0.6 mm

clamping force vs. distance



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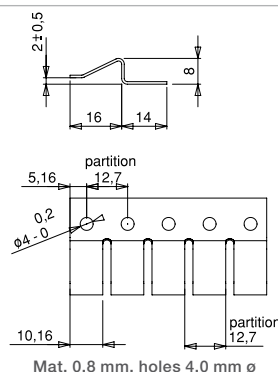
All dimensions in mm.



Multiple Transistor Clip

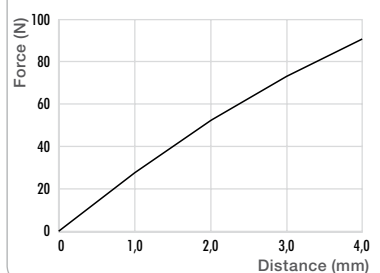
Part-No. KU 4-498/X  
TO-220

(X = Number of fingers)



Mat. 0.8 mm, holes 4.0 mm Ø

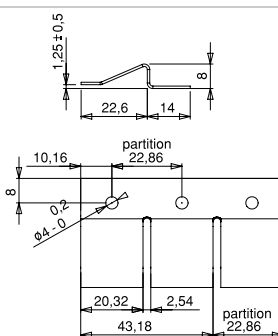
clamping force vs. distance



Multiple Transistor Clip

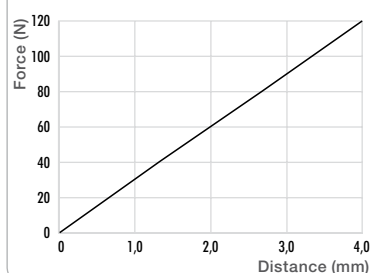
Part-No. KU 4-499/X  
TO-247 / TO-264

(X = Number of fingers)



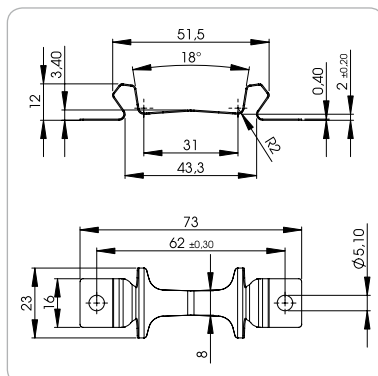
Mat. 0.8 mm, holes 4.0 mm Ø

clamping force vs. distance

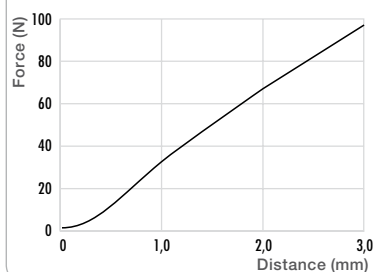




Part-No. KU 4-501  
ISOPLUS



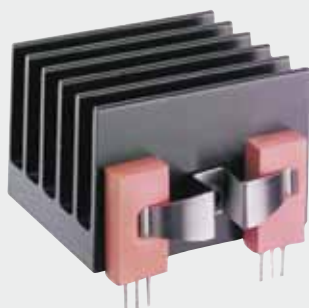
clamping force vs. distance



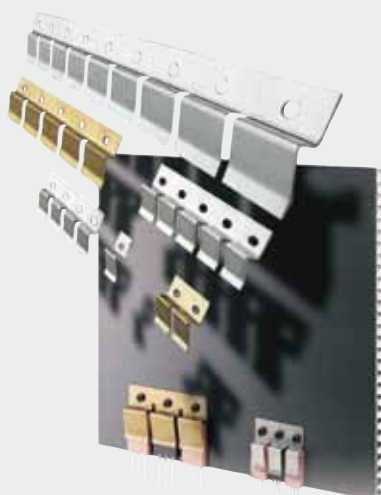
## APPLICATIONS



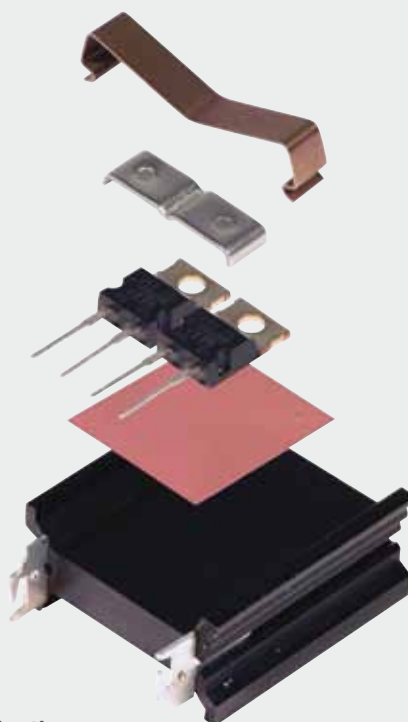
Application with KU 4-501



Application with Gull Wing Clips



Application with Multiple Transistor Clips



### Application

Heat sink:	KU 1-070
POWERCLIP®:	KU 3-391
Centering element:	KU 2-ZUB01-567
Mounting element:	KU 2-ZUB 38-1

Thermally conductive materials  
POWERCLIPS®