

THERMAL MANAGEMENT PRODUCTS

- *Heat Sinks*
- *Thermal Link Retainers*
- *ZIF Circuit Card Retainers*



Forged Heat Sinks

Design Features:

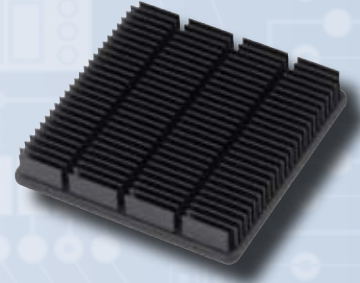
- Precision forging technology for high power applications
- Designed for BGA and other surface mount packages
- Various mounting methods available
- Select from multiple fin heights
- Thermal resistances as low as 0.9°C/W (200 LFPM convection flow conditions)

Product Benefits:

- Adhesive lap shear adhesion, 15 — 70 psi
- Applicable for BGA, PGA, PLCC, and QFP packages



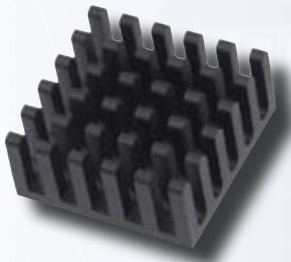
- Pin Fins
- Plate Fins



Available Dimensions	Length	Width	Height
Minimum	0.73in (18.5mm)	0.73in (18.5mm)	0.25in (18.6mm) / .375in (9.5mm) / 0.50in (12.7mm)
Maximum	1.76in (44.7mm)	1.76in (44.7mm)	0.455in (11.5mm) ~ 1.28in (32.5mm)

Adhesive Peel & Stick Heat Sinks

With pre-applied adhesive, just peel off the release liner and press onto the component

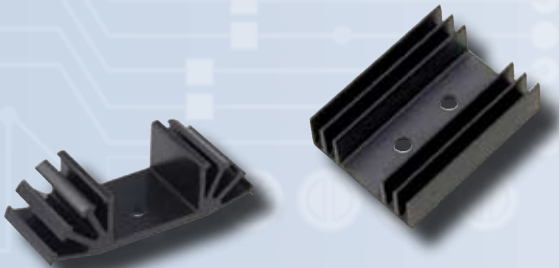


Design Features:

- Reduces assembly costs; no more messy adhesives or greases required
- Excellent mechanical bond
- Thermally optimized pin fin
- Omnidirectional
- Adhesive lap shear adhesion > 35 psi
- Applicable for BGA, PGA, PLCC, and QFP packages
- Thermal resistances as low as 2.2°C/W (400 LFPM convection flow conditions)

Available Dimensions	Length	Width	Height
Minimum	0.91in (23.1mm)	0.91in (23.1mm)	0.355in (9.0mm) / 0.605in (15.36mm)
Maximum	2.11in (53.6mm)	2.11in (53.6mm)	0.355in (9.0mm)

Extruded Heat Sinks



- Fanned Fins
- Flared Fins
- Vertical Fins



Design Features:

- Designed for TO-126, TO-202, TO-218, TO-220 Transistor packages
- Single or double component styles
- 6063-T5 aluminum
- Black anodize surface finish
- Select from multiple fin heights
- Optional vertical mounting pins
- Thermal resistances as low as 3.0°C/W (natural convection)

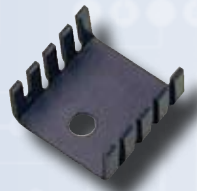
Available Dimensions	Length	Width	Height
Minimum	0.75in (19mm)	1.38in (35mm)	~ 0.5in (12.7mm)
Maximum	2.50in (63.5mm)	2.00in (50.8mm)	~ 0.5 (12.7mm)

Stamped Heat Sinks

Design Features:

- Designed for TO-3, TO-66, TO-126, TO-127 and TO-220 Transistor packages
- Single or double component styles
- 6063-T5 aluminum
- Black anodize surface finish
- Select from multiple fin heights
- Thermal resistances as low as 7.0°C/W (natural convection)

Available Dimensions	Length	Width	Height
Minimum	~ 0.7in (17.8mm)	~ 0.9in (22.9mm)	~ 0.3in (7.6mm)
Maximum	~ 1.8in (45.7mm)	~ 1.8in (45.7mm)	1.00in (25.4mm)



Thermal Link Retainers

Design Features:

- Designed for TO-5, TO-8, TO-18 Transistor packages
- Excellent retention under high shock loads
- Black Cadmium or Dull Nickel Finish
- Available with or without BeO insulators
- Available with or without mounting hardware
- Thermal resistances as low as 4.8°C/W (natural convection)

- Fan Top
- Barrel Style
- Flat Top



Available Dimensions	Fan Type	Barrel Style	Flat Top
Diameter Min/Max	0.5in (12.7mm) / 1.25in (31.75mm)	.220in (5.6mm) / .440in (11.2mm)	NA
Height Min/Max	0.12in (30.5mm) / 0.25in (6.35mm)	.40in (10.16mm) / .50in (12.7mm)	.25in (6.35mm)

ZIF Circuit Card Retainers

- ZIF Standard
- ZIF III
- ZIF Prime



Design Features:

- Quick 1/4-turn locking action
- Thermal resistances as low as 0.9°C/W per inch of retainer length
- Uniform clamping pressure eliminates hot spots, creating uniform heat transfer
- Designed for circuit board thicknesses (inches): .031; .050; .062; .084; .093; .125
- Design interchangeability makes field repairs quick and simple – no special tools required
- ZIF characteristics are unaffected by adverse environments typically encountered in military and industrial applications
- ZIF provides a visual indication that the rods are in the “open” or “closed” position relative to the position of the drive assembly

Available Dimensions	Length (Minimum) / (Maximum)	Width	Height (Minimum) / (Maximum)
ZIF Standard	1.5in (38mm) / 10.5in (266mm)	.385in (9.7mm)	.400in (10.2mm) / .478in (12.1mm)
ZIF III	1.5in (38mm) / 7.5in (190.5mm)	0.32in (8.1mm)	0.25in (6.35mm)
ZIF Prime	2.5in (63.5mm) / 7.5in (190.5mm)	0.32in (8.1mm)	0.25in (6.35mm)

See the complete list of available products and specifications at: www.ctscorp.com/components/

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