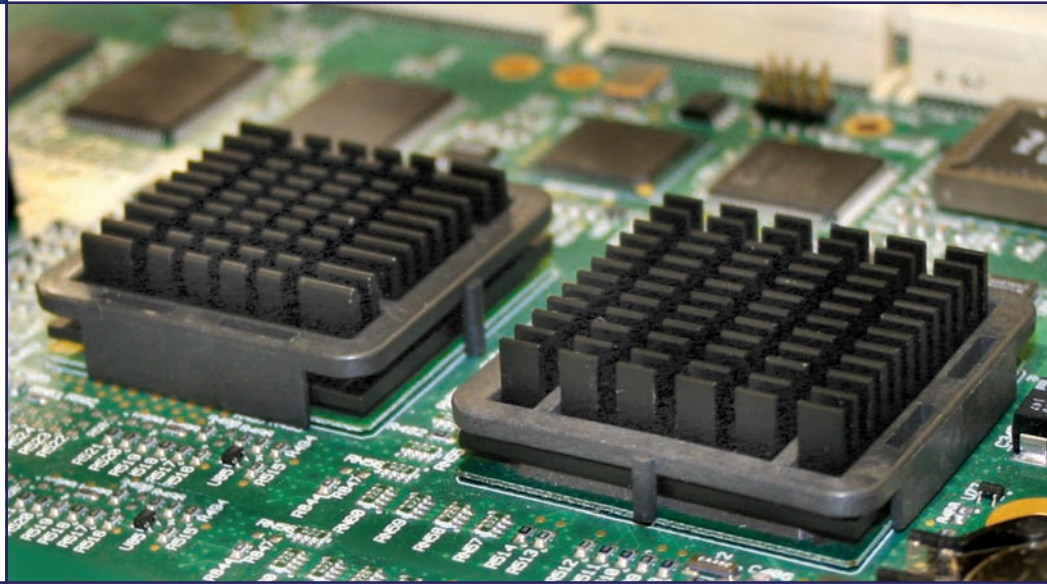


INE Series

Aluminum Cross-Cut Fin BGA Heatsinks

Removable Heatsinks for BGA Chipsets



The INESeries of Aluminum Cross-Cut Fin BGA Heatsinks are high efficiency cooling products which are ideal for linear air flow environments.

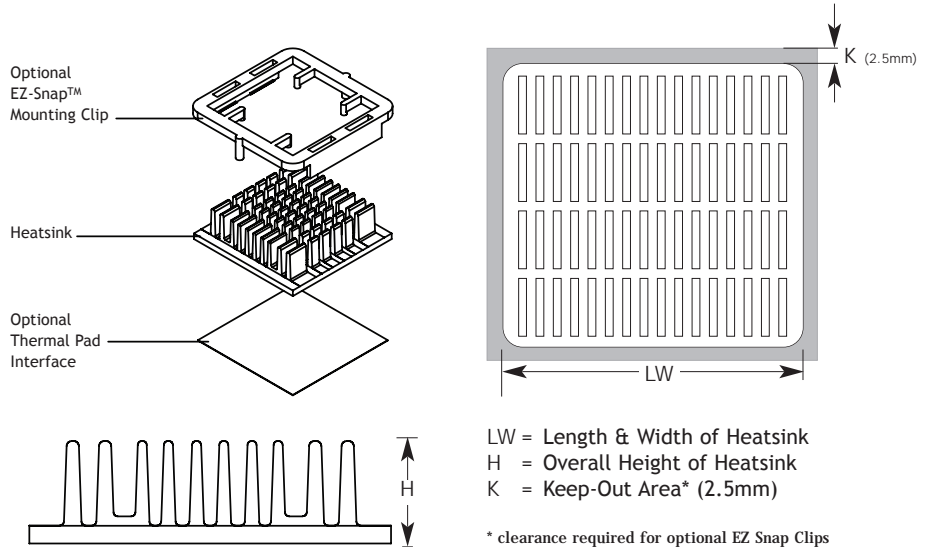
These devices mount with EZ Snap™ Mounting Clips and / or Thermal Tape to provide optimum cooling for various package sizes and airflow. These off-the-shelf, high efficiency solutions are easy to install and require no special board modifications or complex assemblies.

Features:

- * High efficiency aluminum cross-cut fin design provides low pressure-drop characteristics
- * Constructed of Extruded Aluminium AL6063 for optimum heat transfer
- * Ideal for linear air flow environments
- * Designed specifically for BGAs and other surface mount packages
- * Optional EZ-Snap™ Mounting Clip is constructed of UL94-V0 Rated Nylon
- * Use Clip Tool HS8063 to attach or remove heatsink assembly directly to BGA chip
- * Finished with black anodize plating
- * Selected Clip & Thermal Pad Options are pre-assembled at the factory

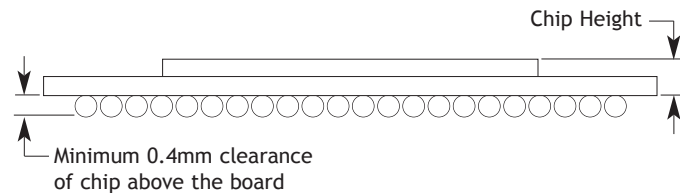
Mechanical Outline Drawing

(See 2nd page for "LW" & "H" dimensional values)



EZ Snap™ Mounting Clip

CLIPS DIRECTLY TO BGA CHIP WITH HS8063 CLIP TOOL
 See page 2 for fitting chip heights. Consult factory for unique Chip Height Requirements



- Note 1: Chip Height Measurements exclude ball dimensions (0.4mm)
- Note 2: Chip must have 0.4mm clearance above the board for clip to adhere properly
- Note 3: Maintain Keep-Out Clearance of 2.5mm around chip for clip to adhere properly



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INE Series

Aluminum Cross-Cut Fin BGA Heatsinks

Length & Width of Heatsink (mm)	Part Number ⁽¹⁾				Heatsink Height (mm)	Weight (g)	Thermal Resistance Theta_SA (C/W)		
	Heatsink Part Number	Mounting Clip	Fits Chip Heights (mm)	Optional Thermal Pad			200 LFM	400 LFM	600 LFM
21	INE21001-10/1.7	K21B	0.4-1.0*	+8612i	9.7	3.6	9.9	7.1	6.1
		K21A	1.3-1.9*						
23	INE23001-10/2.7	K22B	0.4-1.0*	+8612i	9.8	6.7	8.3	6.0	5.1
		K22A	1.3-1.9*						
25	INE25001-10/1.7	K23B	0.4-1.0*	+8612i	9.8	5.6	7.4	5.2	4.4
		K23A	1.3-1.9*						
		K57B	1.5-2.1*						
		K58B	2.3-2.9*						
27	INE27001-10/1.7	K59B	3.9-4.5*	+8612i	9.8	7.4	6.3	4.2	3.5
		K24B	0.4-1.0*						
		K24A	1.3-1.9*						
31	INE31001-10/1.7	K38B	0.4-1.0*	+8612i	9.8	9.3	4.7	3.0	2.4
		K38A	1.3-1.9*						
35	INE35001-10/1.7	K25B	0.4-1.0*	+8612i	9.8	13.7	4.3	2.7	2.2
		K51B	0.6-1.2*						
		K25A	1.3-1.9*						
		K52B	1.4-2.1*						
		K35B	2.1-2.7*						
		K29B	2.3-2.9*						
		K53B	3.0-3.6*						
		K29A	3.2-3.8*						
K53A	3.9-4.5*								
37.5	INE37.5001-10/1.7	K26A	1.3-1.9*	+8612i	9.8	13.7	3.8	2.3	1.8
		K60A	1.5-2.1*						
		K61A	2.3-2.9*						
		K45A	2.7-3.3*						
		K62A	3.9-4.5*						
		K27B	0.3-0.9*						
40	INE40001-10/1.7	K54B	0.6-1.2*	+8612i	9.8	16.8	3.4	2.1	1.7
		K27A	1.2-1.8*						
		K55B	1.4-2.0*						
		K36B	2.1-2.7*						
		K30B	2.3-2.9*						
		K56B	3.0-3.6*						
		K30A	3.2-3.8*						
		K56A	3.9-4.5*						
42.5	INE42.5001-10/1.7	K41B	0.3-0.9*	+8612i	10.1	21.5	3.1	1.9	1.5
		K40A	0.6-1.2*						
		K41A	1.2-1.8*						
		K31B	1.6-2.2*						
45	INE45001-10/1.7	K31A	2.5-3.1*	+8612i	9.8	21.3	2.8	1.7	1.4
		K28B	0.4-1.0*						
		K28A	1.3-1.9*						

Notes:

- 1) Example Part Numbers:
INE35001-10/1.7K25A+8612i 35 x 9.8mm Heatsink with Clip and Thermal Pad
 - 2) Mounting Clips are constructed of UL94-VO rated nylon material.
 - 3) Thermal Data provided is for reference only. Actual Cooling Performance may vary by application.
 - 4) Contact Radian to discuss unique Heatsink, Clip and Interface requirements.
 - 5) Specifications are subject to change without notice.
- * Contact Radian for Mounting Clips to fit chip heights not displayed above.



Passive BGA Cooler Products:

HS1800 Series:
21-45mm Plate Fin (Aluminum) Ideal for Linear Air Flow

HS2000-060 Series:
21-45mm Round Pin (Aluminum) Ideal for Omni Directional Air Flow

HS2000-080 Series:
21-45mm Round Pin (Aluminum) Ideal for Omni Directional Air Flow

INM-P Series:
27-42.5mm Round Pin (Aluminum) Ideal for Omni-Directional Airflow

INM-PCU Series:
19-42.5mm Round Pin (Copper) Ideal for Omni Directional Air Flow

INM-W Series
19-45mm Elliptical Fin (Aluminum) Ideal for Linear Airflow and where Multiple Heatsinks are utilized

Custom Design and Manufacturing Services:

Our experienced engineers and production specialists are dedicated to the design and manufacture of cooling solutions to match our customers specific thermal issues, quickly and cost-effectively.

Features of our services include:

- * Free Engineering Consultation
- * Complimentary Thermal Analysis (Computational Fluid Dynamics and Design Simulation/Modeling)
- * Wide range of technologies including: Investment Casting; Die Casting; Precision Forging; Skived Fin; Extrusions; Stamped Fin; and Custom Machining
- * Rapid Prototyping Services to deliver concept models in as little as 2-5 business days and working prototypes in 1-3 weeks

Contact Radian Heatsinks to discuss your specific requirement today.



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