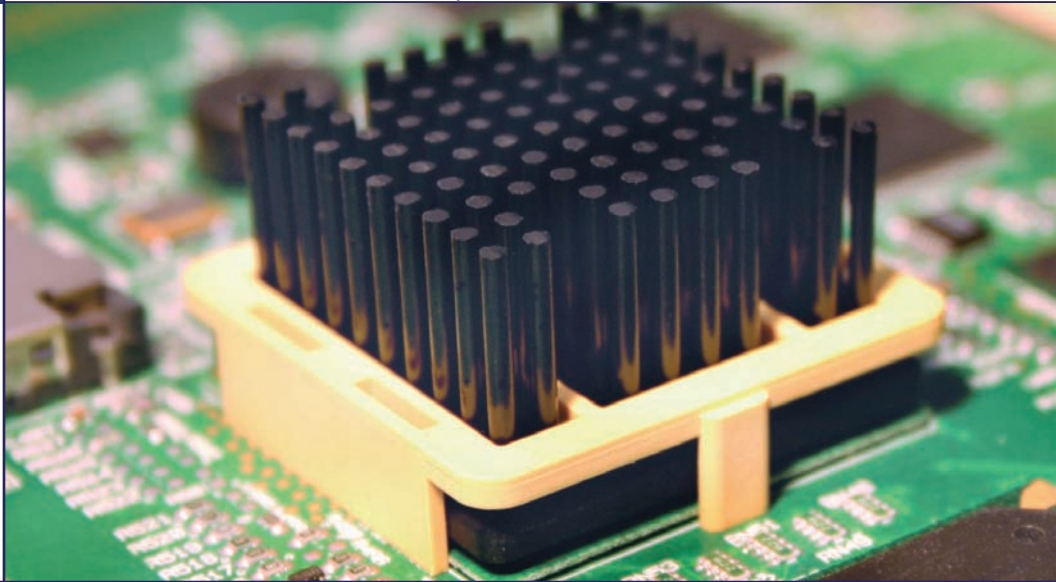




INM-P Series

Round Pin Aluminum BGA Heatsink

Removable Heatsinks for BGA Chipsets



The INM-P Series of aluminum round pin BGA heatsinks are high efficiency cooling products which are ideal for omni-directional air flow.

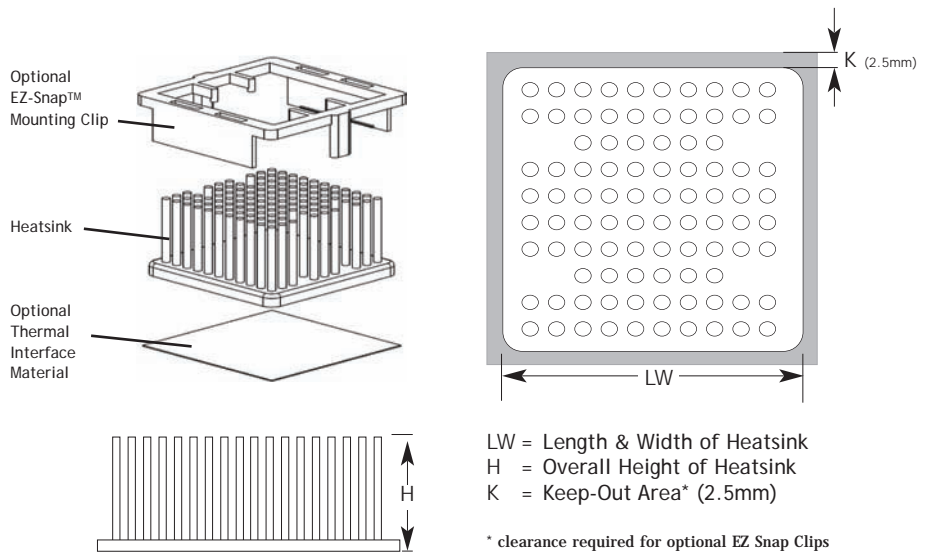
These devices mount with EZ Snap™ mounting clips and / or thermal tape to provide optimum cooling for various package sizes and airflow. These off-the-shelf, high efficiency solutions are easy to install and require no special board modifications or complex assemblies.

Features:

- * High efficiency aluminum round pin design provides low pressure-drop characteristics
- * Constructed of forged aluminum AL6063 for optimum heat transfer
- * Ideal for omni-directional air flow
- * 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

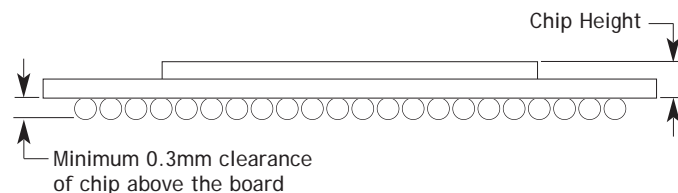
Mechanical Outline Drawing

(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 (0.3mm)
 Note 2: Chip must have 0.3mm 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



Radian Heatsinks

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INM-P Series

Round Pin Aluminum BGA Heatsink

Length & Width of Heatsink (mm)	Part Number ⁽¹⁾				Heatsink Height (mm)	Weight (g)	Thermal Resistance Theta_SA (C/W)				
	Heatsink Part Number	Optional Mounting Clip		Optional Thermal Tape/Pad Part # ⁽²⁾			100 LFM	200 LFM	400 LFM	600 LFM	
		Part Number ⁽³⁾	Fits Chip Heights (mm)								
19	INM19002-12P/2.6	O	0.6-1.2*	+3M8815	11.6	4.0	11.0	7.7	5.5	4.5	
	NM19002-15P/2.6	-or- BU	1.4-2.0*		-or-	14.6	4.8	10.5	7.5	5.0	4.4
	INM19002-20P/2.6	-or- Y	3.0-3.6*		+T710	19.6	5.7	7.5	5.1	3.7	3.0
	NM19002-25P/2.6					24.6	6.9	6.7	4.7	3.4	2.7
27	INM27002-12P/2.6	O	0.6-1.2*	+3M8815	11.6	7.6	7.9	5.3	3.8	3.1	
	INM27002-15P/2.6	-or- BU	1.4-2.0*		-or-	14.6	8.5	6.6	4.4	3.2	2.6
	INM27002-20P/2.6	-or- K32	2.3-2.9		+T710	19.6	10.0	4.6	3.1	2.2	1.9
	INM27002-25P/2.6	-or- Y	3.0-3.6*			24.6	11.5	3.9	2.8	2.0	1.7
29	INM29002-12P/2.6	O	0.6-1.2*	+3M8815	11.6	9.3	6.1	3.9	2.6	2.1	
	INM29002-15P/2.6	-or- BU	1.4-2.0*		-or-	14.6	10.4	5.7	3.7	2.5	2.0
	INM29002-20P/2.6	-or- Y	3.0-3.6*		+T710	19.6	11.7	4.1	2.6	1.8	1.5
	INM29002-25P/2.6					24.6	13.5	3.9	2.5	1.8	1.4
33	INM33002-12P/2.6	O	0.6-1.2*	+3M8815	11.6	11.0	5.9	3.8	2.7	2.2	
	INM33002-15P/2.6	-or- BU	1.4-2.0*		-or-	14.6	12.3	4.9	3.2	2.2	1.8
	INM33002-20P/2.6	-or- K33	2.3-2.9		+T710	19.6	13.8	3.5	2.3	1.6	1.3
	INM33002-25P/2.6	-or- Y	3.0-3.6*			24.6	16.5	2.9	1.9	1.4	1.2
35	INM35002-12P/2.6	O	0.6-1.2*	+3M8815	11.6	13.4	5.3	3.4	2.5	1.9	
	INM35002-15P/2.6	-or- BU	1.4-2.0*		-or-	14.6	15.1	4.4	2.9	2.0	1.7
	INM35002-20P/2.6	-or- K29	2.3-2.9		+T710	19.6	17.9	3.2	2.0	1.5	1.2
	INM35002-25P/2.6	-or- Y	3.0-3.6*			24.6	20.7	2.6	1.8	1.3	1.0
37.5	INM37.5002-12P/2.6	O	0.6-1.2*	+3M8815	11.6	15.7	5.0	3.4	2.3	1.8	
	INM37.5002-15P/2.6	-or- BU	1.4-2.0*		-or-	14.6	17.8	4.1	2.7	1.9	1.6
	INM37.5002-20P/2.6	-or- Y	3.0-3.6*		+T710	19.6	21.3	3.0	1.8	1.4	1.2
	INM37.5002-25P/2.6					24.6	24.8	2.4	1.6	1.2	1.0
40	INM40002-12P/2.6	O	0.6-1.2*	+3M8815	11.6	17.8	4.3	2.8	1.9	1.5	
	INM40002-15P/2.6	-or- BU	1.4-2.0*		-or-	14.6	20.0	3.6	2.4	1.6	1.3
	INM40002-20P/2.6	-or- K30	2.3-2.9		+T710	19.6	24.0	2.5	1.7	1.2	0.9
	INM40002-25P/2.6	-or- Y	3.0-3.6*			24.6	28.0	2.1	1.4	1.0	0.8
42.5	INM42.5002-12P/2.6	O	0.6-1.2*	+3M8815	11.6	20.6	4.0	2.5	1.7	1.3	
	INM42.5002-15P/2.6	-or- BU	1.4-2.0*		-or-	14.6	23.0	3.3	2.1	1.4	1.1
	INM42.5002-20P/2.6	-or- Y	3.0-3.6*		+T710	19.6	28.0	2.4	1.5	1.0	0.8
	INM42.5002-25P/2.6					24.6	33.0	1.9	1.3	0.8	0.7

Notes:

1) Example Part Numbers:
 INM27002-15P/2.6 27 x 14.6mm Heatsink only
 INM35002-20P/2.6O 35 x 19.6mm Heatsink with "O" (orange) mounting clip (0.6-1.2mm chip height)
 INM40002-15P/2.6+3M8815 40 x 14.6mm Heatsink with 3M8815 thermal tape
 INM42.5002-25P/2.6BU+T710 42.5 x 24.6mm Heatsink with "BU" (blue) mounting clip for 1.4-2.0mm chip heights and T710 thermal pad

- 2) Optional thermal interface materials are defined as follows:
 T710 - Thermally conductive phase change pad for use with mounting clip (Chomerics Part # T710)
 3M8815 - Thermally conductive adhesive tape
- 3) Mounting clips are constructed of UL94-VO rated nylon material.
- 4) Thermal data provided are for reference only. Actual cooling performance may vary by application.
- 5) Contact Radian to discuss unique heatsink, Clip and interface requirements.
- 6) 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

INL Series:
 27-37.5mm plate fin (aluminum) ideal for linear air flow

INM-W Series
 19-45mm elliptical fin (aluminum) ideal for linear airflow and where multiple heatsinks are utilized

HS2000-60 Series:
 21-45mm round pin (aluminum) ideal for omni directional air flow

HS2000-80 Series:
 21-45mm round pin (aluminum) ideal for omni directional air flow

INM-PCU Series:
 19-42.5mm round pin (copper) ideal for omni directional air flow

Small Round Pin:
 12.7-25.4mm round pin (aluminum) ideal for omni directional air flow

37.5004 Series:
 37.5mm round pin (aluminum or copper) ideal for omni directional air flow

Pushpin Heatsinks:
 Pushpin heatsinks (aluminum) ideal for linear air flow

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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