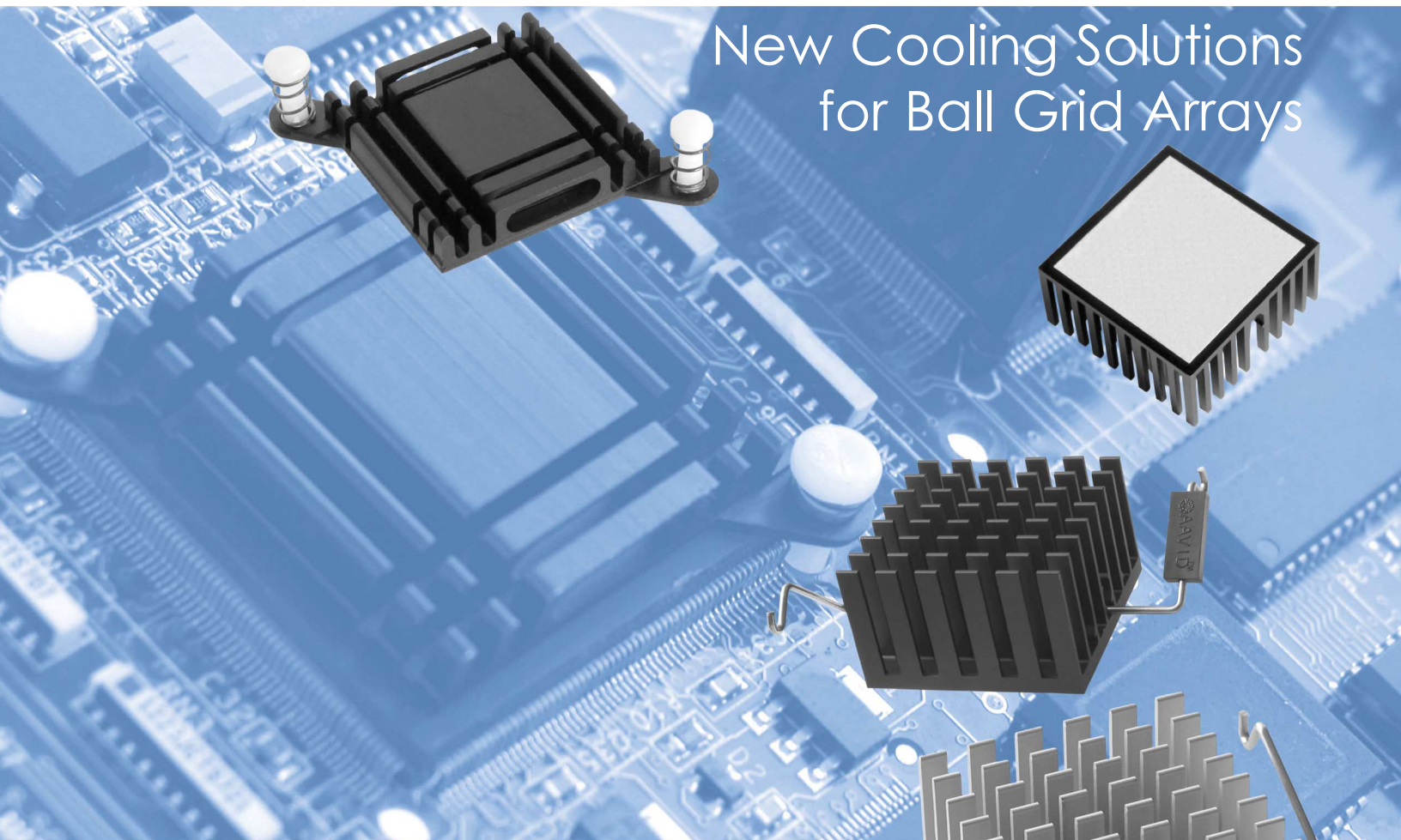


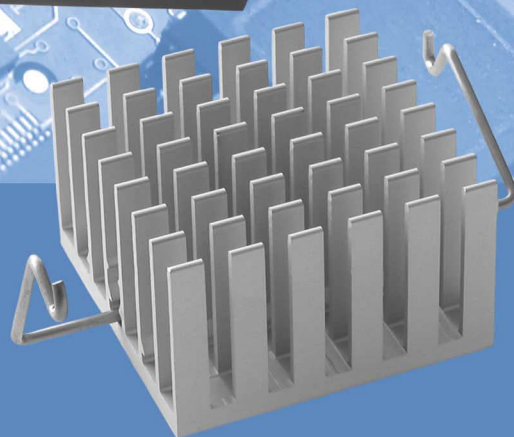


New Cooling Solutions for Ball Grid Arrays

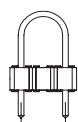
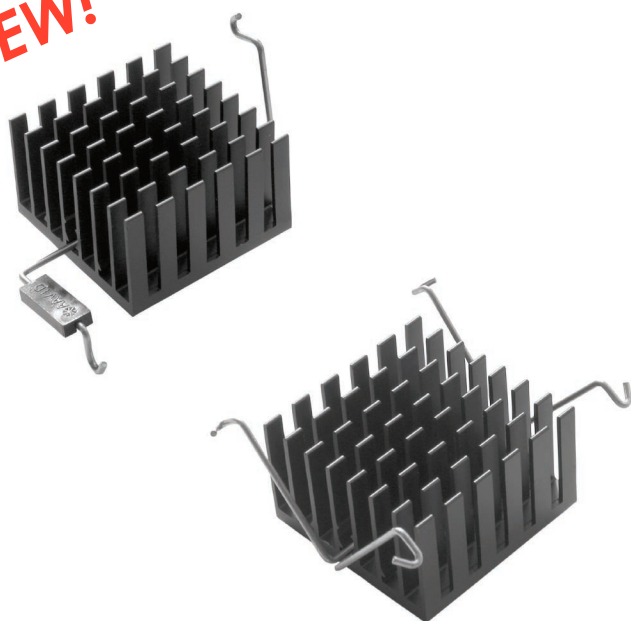


The Industry's Most Comprehensive Selection of BGA Heat Sinks

Aavid Thermalloy offers the broadest line of innovative BGA heat sinks – including standard, off-the-shelf solutions to support all of your most demanding applications. Cost effective and highly functional, our BGA heat sinks range in size from 10mm x 10mm to 45mm x 45mm, and accommodate heights from 6mm to 35mm. All come in the flat base and light weight you require, and deliver proven, long-term reliability.



NEW!



Solder Anchor Sold Separately
Part # D057
 Solder anchors must be soldered to PCB
 prior to attaching the heat sink clip
 Consult P.C. Board Hole Pattern for number required

Part Number	Width	Length	Height	*θn	*θf	*Finish	
374024B60023	23.0	23.0	10.0	40.0	11.69	B	A
374124B60023	23.0	23.0	18.0	23.4	7.39	B	A
374224B60023	23.0	23.0	25.0	19.7	6.37	B	A
374324B60023	27.0	27.0	10.0	30.6	9.35	B	A
374424B60023	27.0	27.0	18.0	20.3	6.46	B	A
374524B60023	27.0	27.0	25.0	16.5	5.47	B	A
10-5634-01**	31.0	34.9	23.0	11.5	4.20	B	I
10-THMA-01**	31.0	34.9	35.0	10.7	3.95	B	I
374624B60024	35.0	35.0	10.0	23.4	7.55	B	B
374724B60024	35.0	35.0	18.0	15.3	5.15	B	B
374824B60024	35.0	35.0	25.0	12.0	4.27	B	B
10-BRD2-01**	35.7	37.3	23.0	11.5	4.20	N	B
10-BRD1-01**	37.5	37.5	23.0	10.1	3.83	B	B
10-BRD1-03**	37.5	37.5	23.0	10.1	3.83	B	G
10-BRD1-04**	37.5	37.5	23.0	10.1	3.83	B	B
10-BRD1-05**	37.5	37.5	23.0	10.1	3.83	N	G
10-BRD1-07**	37.5	37.5	23.0	10.1	3.83	N	B
374924B60024	40.0	40.0	10.0	20.3	6.46	B	B
375024B60024	40.0	40.0	18.0	12.2	4.34	B	B
375124B60024	40.0	40.0	25.0	10.3	3.83	B	B
10-CLS1-01**	42.3	42.3	23.0	8.8	3.51	B	H
10-CLS2-01**	42.3	42.3	35.0	8.3	3.44	B	H

* See bottom of page 4 for information on how to use this table
 Refer to page 4 for PCB hole patterns

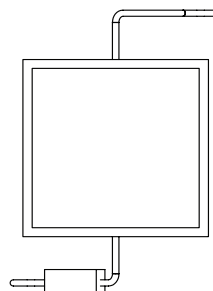
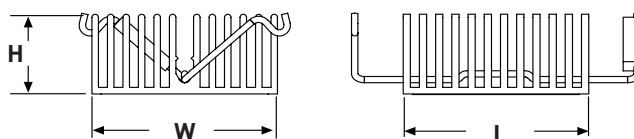
** Heat Sinks for Flip Chip includes foam pad around perimeter.
 This stabilizes the part so heat sink doesn't move.

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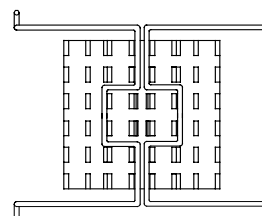
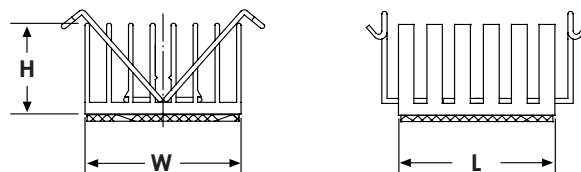
FEATURES AND BENEFITS

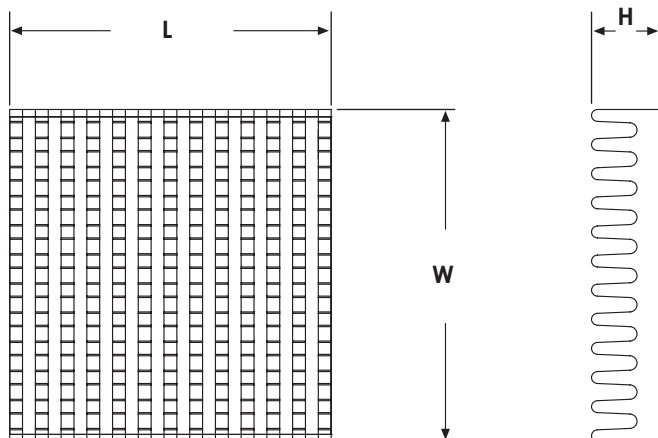
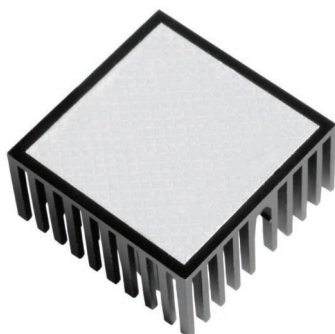
- New unique wire clip design allows for complete reworkability after assembly without damage to the BGA package or PC Board
- Configurations are available for a wide range of BGA package sizes
- Minimal PC Board real estate is required for mounting
- Solder Anchors provide the most rugged mounting in the industry
- Each Heat Sink utilizes a phase change pad as the interface for optimal thermal performance.

Drawing represents those heat sinks requiring 2 solder anchors



Drawing represents heat sink part numbers
 10-BRD1-03 and 10-BRD1-05 that require 4 solder anchors





FEATURES AND BENEFITS

- Configurations are available for a wide range of BGA package sizes
- Tape mounted versions eliminate the need for mounting holes in the PC Board
- These Heat Sinks can be used with either plastic or metal/ceramic BGA Packages
- These Heat Sinks are compatible with Ther-a-grip tapes

Part Number	Width	Length	Height	* θ_n	* θ_f	Surface	
375324B00035	10.2	10.2	10.2	71.4	21.20	Plastic	B
375224B00032	10.2	11.1	10.2	71.4	21.20	Metal	B
375424B00034	15.2	15.2	6.4	62.5	17.60	Plastic	B
374024B00032	23.0	23.0	10.0	40.0	11.69	Metal	B
374024B00035	23.0	23.0	10.0	40.0	11.69	Plastic	B
374124B00032	23.0	23.0	18.0	23.4	7.39	Metal	B
374124B00035	23.0	23.0	18.0	23.4	7.39	Plastic	B
374224B00032	23.0	23.0	25.0	19.7	6.37	Metal	B
374224B00035	23.0	23.0	25.0	19.7	6.37	Plastic	B
335224B00032	25.0	25.0	9.9	34.0	10.39	Metal	B
335224B00034	25.0	25.0	9.9	34.0	10.39	Plastic	B
335324B00032	26.9	26.9	11.4	27.7	8.71	Metal	B
374324B00032	27.0	27.0	10.0	30.6	9.35	Metal	B
374324B00035	27.0	27.0	10.0	30.6	9.35	Plastic	B
374424B00032	27.0	27.0	18.0	20.3	6.46	Metal	B
374424B00035	27.0	27.0	18.0	20.3	6.46	Plastic	B
374524B00032	27.0	27.0	25.0	16.5	5.47	Metal	B
374524B00035	27.0	27.0	25.0	16.5	5.47	Plastic	B
373024B00032	27.9	27.9	8.9	33.3	10.00	Metal	B
373024B00034	27.9	27.9	8.9	33.3	10.00	Plastic	B
373224M00032	28.0	28.0	6.0	44.1	13.13	Metal	M
2327B-CP50	27.9	28.1	15.2	23.4	7.43	Plastic	B
2327B-TACH	27.9	28.1	15.2	23.4	7.43	Metal	B
335724B00032	30.1	30.1	6.6	35.7	10.84	Metal	B
335824B00032	30.0	30.0	9.4	29.4	9.11	Metal	B

Part Number	Width	Length	Height	* θ_n	* θ_f	Surface	*Finish
335824B00034	30.0	30.0	9.4	29.4	9.11	Plastic	B
2338B-TACH	33.0	31.4	12.5	23.1	7.23	Metal	B
371824B00032	35.0	35.0	7.0	31.9	9.67	Metal	B
371824B00034	35.0	35.0	7.0	31.9	9.67	Plastic	B
374624B00032	35.0	35.0	10.0	23.4	7.55	Metal	B
374624B00035	35.0	35.0	10.0	23.4	7.55	Plastic	B
374724B00032	35.0	35.0	18.0	15.3	5.15	Metal	B
374724B00035	35.0	35.0	18.0	15.3	5.15	Plastic	B
374824B00032	35.0	35.0	25.0	12.0	4.27	Metal	B
374824B00035	35.0	35.0	25.0	12.0	4.27	Plastic	B
372024B00032	35.0	35.0	27.9	11.9	4.28	Metal	B
372024B00034	35.0	35.0	27.9	11.9	4.28	Plastic	B
373324M00032	37.4	37.4	6.0	32.6	9.91	Metal	M
374924B00032	40.0	40.0	10.0	20.3	6.46	Metal	B
374924B00035	40.0	40.0	10.0	20.3	6.46	Plastic	B
364424B00032	40.1	40.0	11.4	18.4	6.02	Metal	B
364424B00034	40.1	40.0	11.4	18.4	6.02	Plastic	B
375024B00032	40.0	40.0	18.0	12.2	4.34	Metal	B
375024B00035	40.0	40.0	18.0	12.2	4.34	Plastic	B
375124B00032	40.0	40.0	25.0	10.3	3.83	Metal	B
375124B00035	40.0	40.0	25.0	10.3	3.83	Plastic	B
2321B-TACH	43.2	41.3	8.9	22.1	6.93	Metal	B
2332B-TACH	43.2	41.3	16.5	12.9	4.53	Metal	B
2342B-TACH	45.7	44.6	7.0	23.1	7.26	Metal	B

* See bottom of page 4 for information on how to use this table

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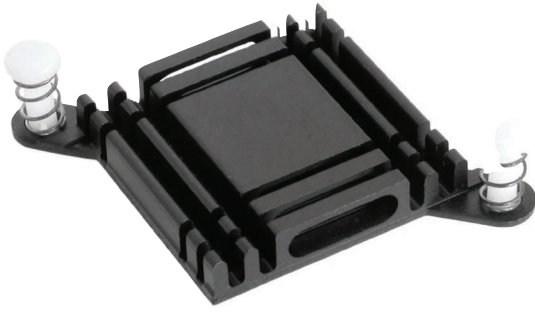
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PUSH PIN ATTACHMENT METHOD

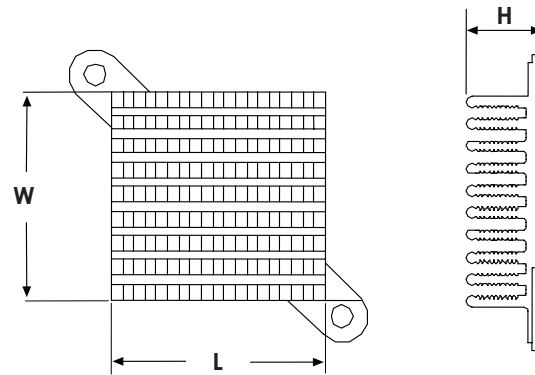


Part Number	Width	Length	Height	*θn	*θf	*Finish	*Fig.
10-6326-27	28.0	28.0	6.0	44.1	13.13	B	C
10-6326-28	28.0	28.0	6.0	44.1	13.13	B	C
10-6327-01	28.5	28.5	10.0	30.6	9.26	B	C
10-TNT2-01	36.1	48.0	11.6	18.8	6.13	B	F
10-5597-02	37.4	37.4	6.0	33.3	9.91	M	D
10-5597-22	37.4	37.4	6.0	33.3	9.91	M	D
10-5597-33	37.4	37.4	6.0	33.3	9.91	M	D
10-5607-04	37.4	37.4	10.0	22.1	6.99	B	D
10-5607-05	37.4	37.4	10.0	22.1	6.99	B	D
372924M02000	37.4	37.4	6.0	32.6	9.91	M	D
10-L4LB-03	41.4	45.2	11.7	16.7	5.60	B	E
10-L4LB-05	41.4	45.2	11.7	16.7	5.60	B	E
10-L4LB-11	41.4	45.2	11.7	14.2	4.91	B	E

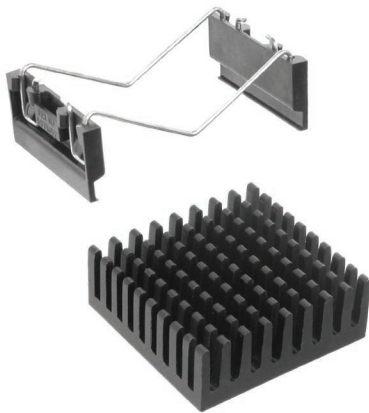
* See bottom of page 4 for information on how to use this table
Refer to page 4 for PCB hole Patterns

FEATURES AND BENEFITS

- Configurations are available for a wide range of BGA Package sizes
- All Heat Sinks utilize industry standard hole patterns
- Plastic push pins are standard. Consult Aavid Thermalloy for versions available with brass push pins for more rugged applications
- Each Heat Sink utilizes a Phase Change Pad as the interface for Optimal Thermal Performance
- Minimal diameter holes are necessary for mounting to PC Board



CLIP ATTACHMENT METHOD

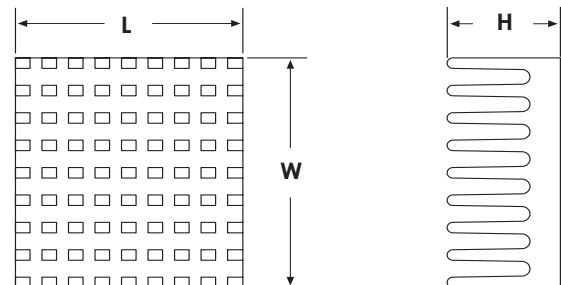


Part Number	Width	Length	Height	*θn	*θf	*Finish
2317B-EP11-BGS1	26.1	20.5	15.2	32.6	9.94	B
2518B-EP11-BGS2	30.5	28.1	15.6	22.7	7.05	B
2519B-EP11-BGS5	34.5	31.4	15.6	19.7	6.30	B
2522B-EP04-BGS5	38.1	38.0	10.2	22.1	6.94	B
2520B-EP04-BGS5	38.1	38.0	15.6	15.6	5.17	B

* See bottom of page 4 for information on how to use this table

FEATURES AND BENEFITS

- A unique clip eliminates the need for mounting holes in the PC Board
- Each Heat Sink utilizes a Phase Change Pad as the interface for optimal thermal performance
- The clips unique design eliminates the need for thermal tape attachment
- The Clips are available in industry standard sizes to fit a wide variety of BGA package sizes



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PCB HOLE PATTERNS

FIGURE A

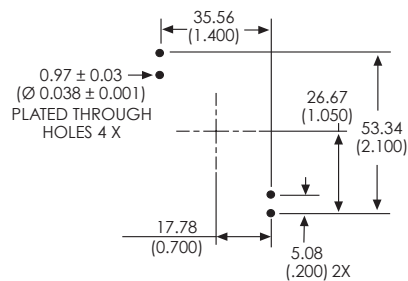


FIGURE B

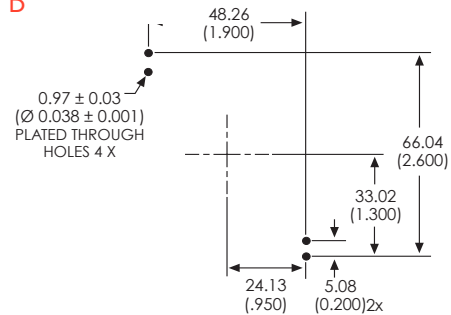


FIGURE C

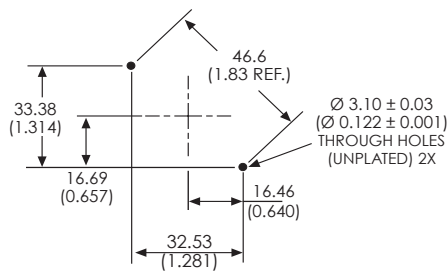


FIGURE D

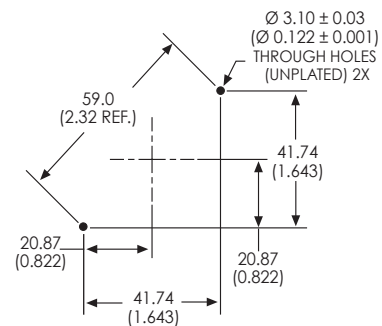


FIGURE E

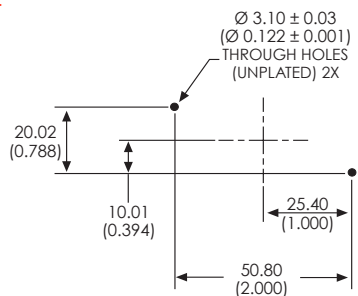


FIGURE F

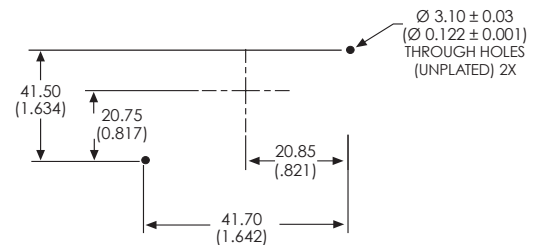


FIGURE G

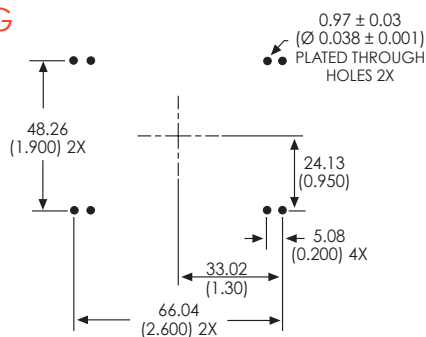


FIGURE H

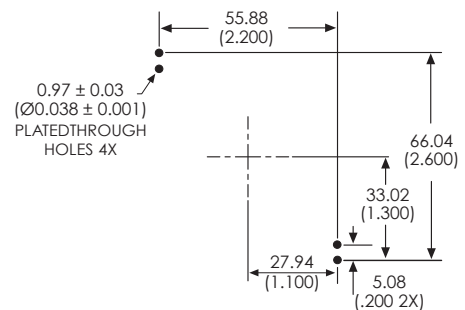


FIGURE I

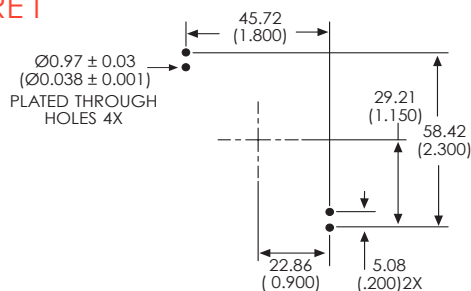


TABLE GUIDE

Dimensions are in mm

θ_n = Natural convection thermal resistance based on a 75°C heat sink temperature rise

θ_f = Forced convection thermal resistance based on an entering 1.0 m/s (200 lfm) airflow

Finish: B = Black Anodize, M = Green Anodize, N = Clear Anodize



THERMAL MANAGEMENT DESIGNER TOOL

Log on to our web site www.aavidthermalloy.com for design assistance.
Click on the BGA product-offering icon and let us help you
select the Heat Sink best suited for your application.
This no nonsense designer's tool is only available from Aavid Thermalloy.

SAMPLE KITS

Contact your local Aavid Thermalloy Sales Representative for
a designers sample kit featuring our BGA Heat Sinks.
Simply log on to www.aavidthermalloy.com/sales

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Concord, NH 03301
TEL: (603) 224-9988 FAX: (603) 223-1790

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FOR MORE INFORMATION ON HOW TO PUT OUR STRENGTHS TO WORK FOR YOU, VISIT OUR WEB SITES AT:

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<i>Fluent Inc.:</i>	www.icepak.com	Tel: (603) 643-2600
<i>Applied Thermal Technologies, Inc.:</i>	www.thermalcooling.com	Tel: (408) 522-8730

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