

PIN FIN HEAT SINK



910 Series

Wakefield-Vette's 900 Series Heat Sinks for Chipset can match up to devices from Intel, Broadcom, Xilinx, TI, Motorola and many more.

These heat sinks are designed for air flow applications in the Telecom, Data Center, Networking, Cloud Computing, and many more Industries.



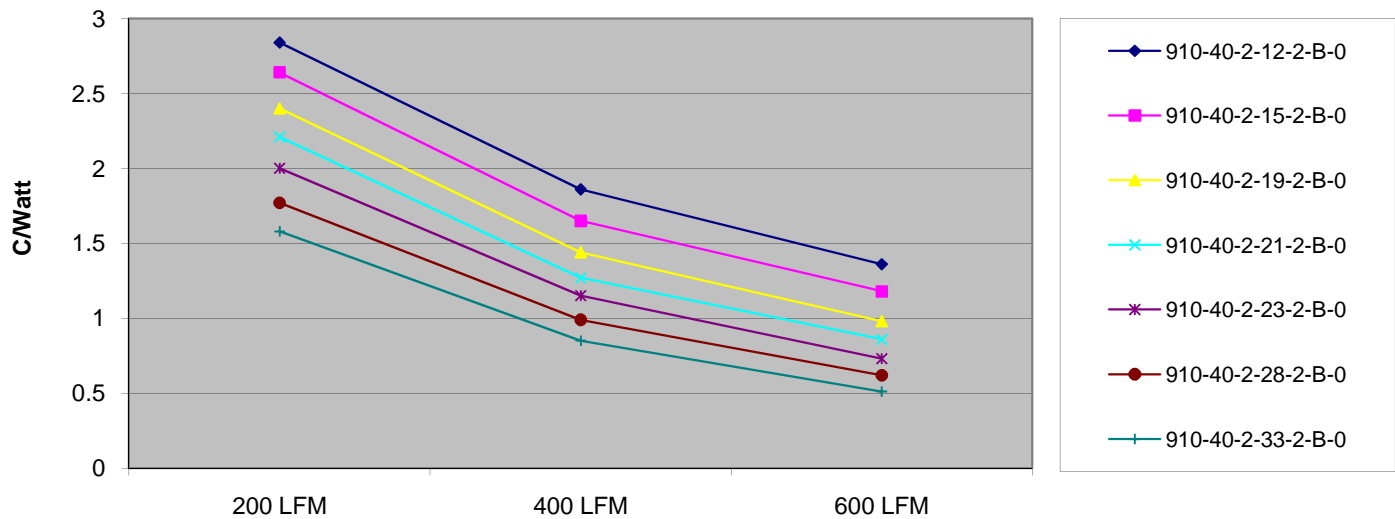
Material: AL 6063

Finish: Black Anodize



PART #	HEIGHT (mm)	CHIP SIZE (mm)	NATURAL CONVECTION	FORCED CONVECTION (C/W)		
				200 LFM	400 LFM	600 LFM
910-40-2-12-2-B-0	12	40	9.18 C/W	2.84 C/W	1.86 C/W	1.36 C/W
910-40-2-15-2-B-0	15	40	8.71 C/W	2.64 C/W	1.65 C/W	1.18 C/W
910-40-2-19-2-B-0	18	40	8.24 C/W	2.4 C/W	1.44 C/W	.98 C/W
910-40-2-21-2-B-0	21	40	7.77 C/W	2.21 C/W	1.27 C/W	.86 C/W
910-40-2-23-2-B-0	23	40	7.63 C/W	2 C/W	1.15 C/W	.73 C/W
910-40-2-28-2-B-0	28	40	7.27 C/W	1.77 C/W	.99 C/W	.62 C/W
910-40-2-33-2-B-0	33	40	6.92 C/W	1.58 C/W	.85 C/W	.51 C/W

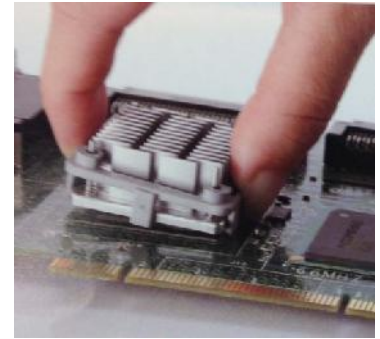
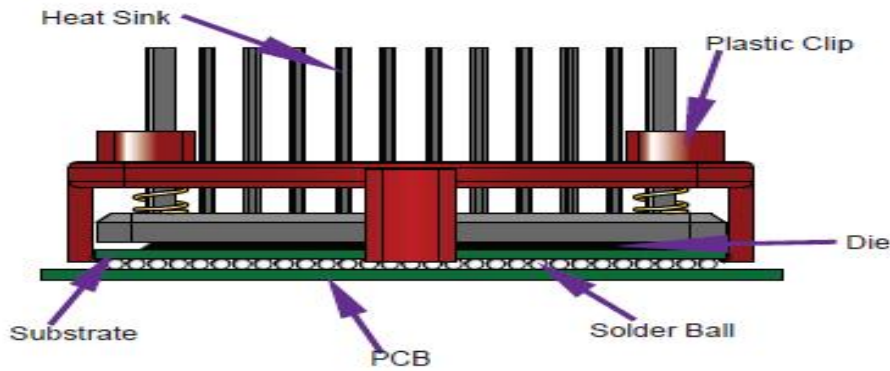
THERMAL PERFORMANCE:



Forced Convection

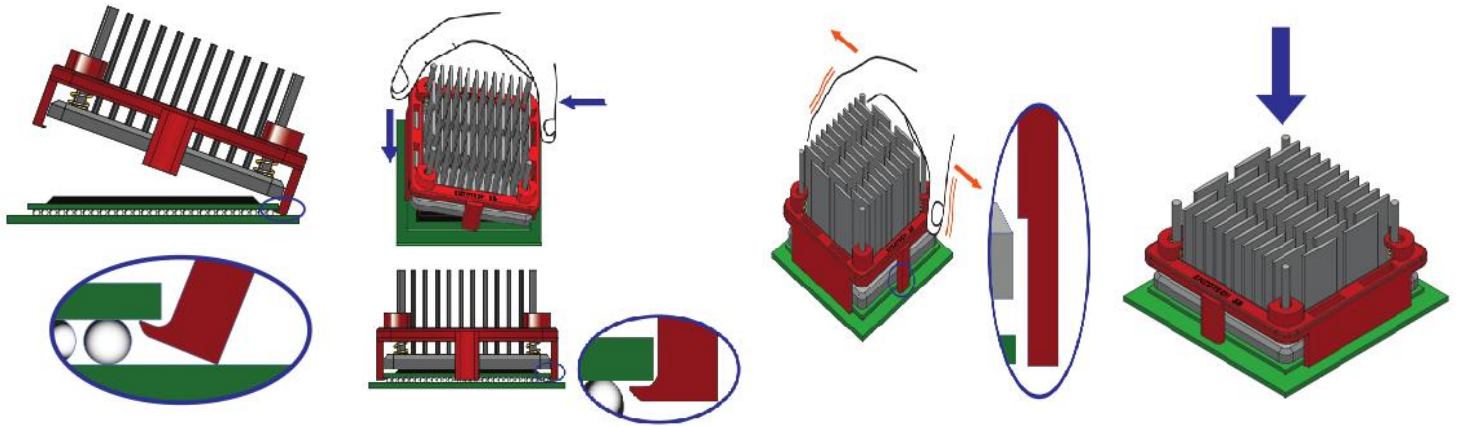
Series	Chip Size	Construction	Height	Chip Height	Finish	Interface	
910-	19-	2- 2= Pin Fin	12-	1-	B = BLK ANO	1	
	19		12 = 11.6	1 = .9-2.1			0 = None
	21		15 = 14.6	2 = 2.2-3.4			1 = T725
	23		18 = 17.6				
	27		21 = 20.6				
	29		23 = 22.6				
	31		28 = 27.6				
	33		33 = 32.6				
	35						
	37.5						
40							

Thermal Cooling Solutions from Smart to Finish



Wakefield-Vette's heat sink assembles onto chip set using the space that is between the PCB and the substrate of the solder balls. The solder balls provide a minimal gap of .5mm to .7mm. Attachment feature is below a .4mm thickness. The clipping system will not interfere or damage chip. Contact area is the edge of chip.

ASSEMBLY INSTRUCTION:



Step 1: Hook the clip under one side of the BGA chip set.

Step 2: Rotate assembly down until opposite side clip engages substrate edge of BGA chip set.

Step 3: Make sure the solder rods are clearing from edges of BGA chip set.

Step 4: Press firmly down to make sure clips fully engage edges of chip set. Heat Sink should not move around easily.

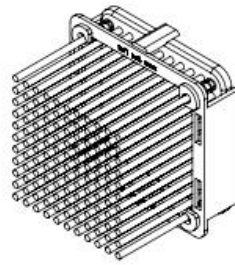
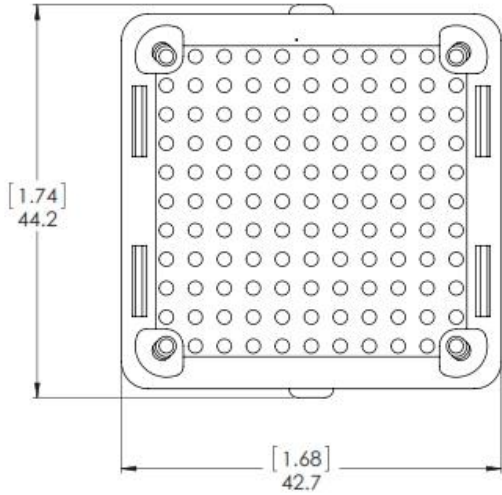
Random Vibration Test

Frequency : 5 Hz to 500 Hz
 Acceleration : 3.13 grms
 P.S.D : 0.01 g²/HZ (5 Hz)
 0.02 g²/HZ (20 Hz to 500 Hz)
 Test Axis : X, Y, Z axis
 Test Time : 10 mins (Each axis)
 Total Test Time : 30 mins

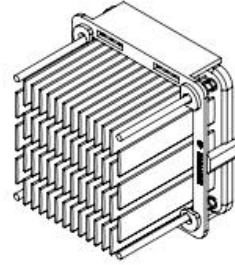
SHOCK TEST SPECIFICATION :

Wave Form : Half sine wave
 Acceleration : 50 g
 Duration Time : 11 ms
 No. of Shock : Each axis 3 times
 Shock Direction : ±X, ±Y, ±Z axis
 Reliability & Communication
 Testing Instruments

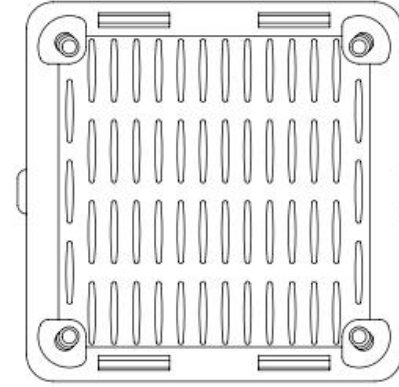
8 7 6 5 4 3 2 1



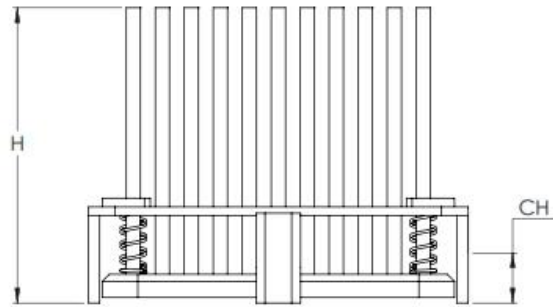
CONSTRUCTION CODE- 2
PIN FINS
11 X 11 PIN ARRAY =
121 FINS, 1.6 mm DIA.



CONSTRUCTION CODE- 1
ELLIPTICAL FINS
54 FINS, 7.1 Lg X 0.8 W mm
4 CORNER PIN FINS



SHOWN ROTATED 90 DEG

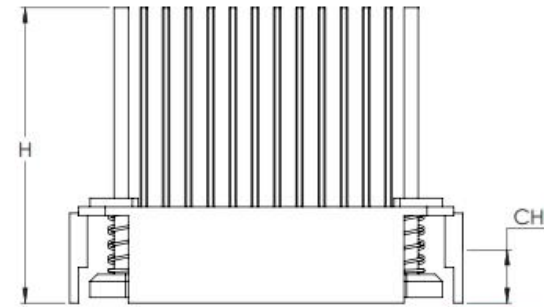


HEIGHT (H)
CODE ACTUAL mm

12-	11.6
15-	14.6
18-	17.6
21-	20.6
23-	22.6
28-	27.6
33-	32.6

CHIP HEIGHT (CH)
CODE ACTUAL RANGE mm

1-	0.9 to 2.1
2-	2.2 to 3.4



910 SERIES FOR 40mm CHIPS

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<p>APPROVALS</p> <p>DRAWN: _____</p>	<p>DATE: 10/23/2014</p>	<p>CHK: _____</p> <p>DSGN ENG: 10/23/2014</p> <p>MFG ENG: _____</p> <p>QA: _____</p>	<p>DRAWING NOT TOSCALE</p> <p>REVISION: _____</p> <p>SCALE: 1:1</p>	
<p>MATERIAL: 6063-T5 AL ALLOY</p> <p>FINISH: BLACK ANODIZE</p>		<p>MODEL INFO: MBA40052-no lp</p>		

SH_SIZE: B 8 7 6 5 4 3 1

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