



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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Wakefield-Vette's 900 Series Heat Sinks for Chipset can match up to devices from Intel, Broadcom, Xilinx, TI, Motorola, ATI, AMD, Nvidia, Vishay, Powerex, Infineon, Microsemi, and many more.

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

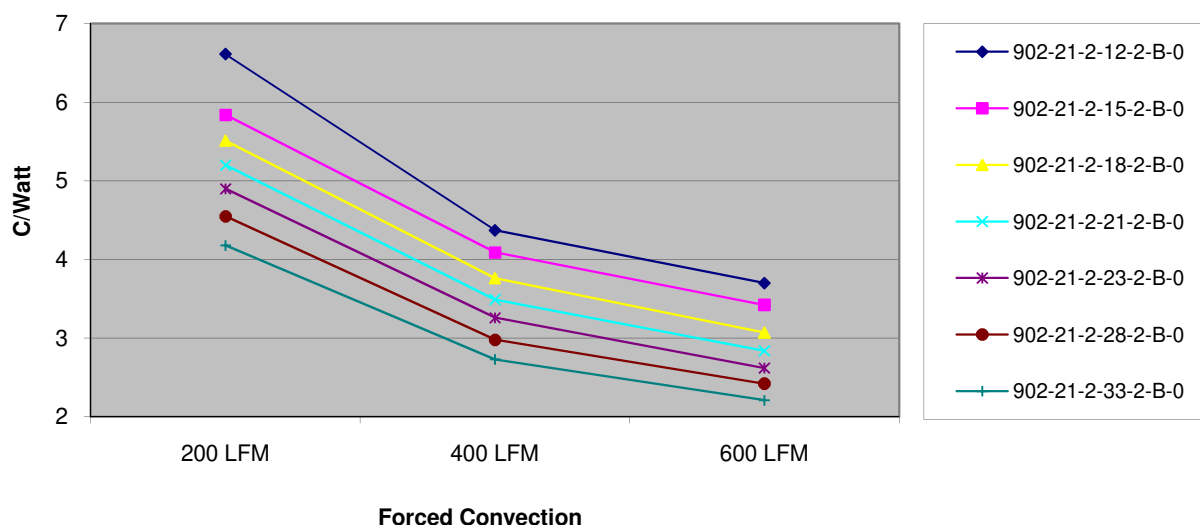
Material: AL 6063

Finish: Black Anodize

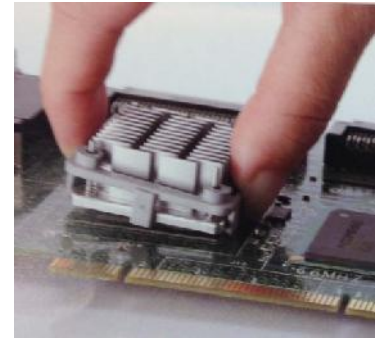
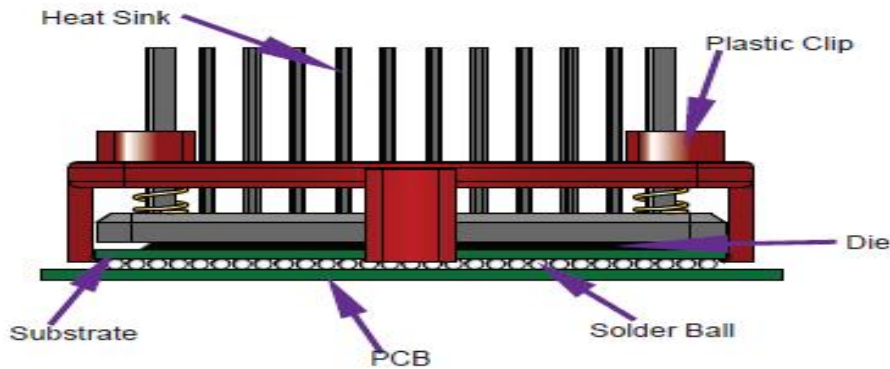


| PART # | HEIGHT (mm) | CHIP SIZE (mm) | NATURAL CONVECTION | FORCED CONVECTION (C/W) | | |
|-------------------|-------------|----------------|--------------------|-------------------------|----------|----------|
| | | | | 200 LFM | 400 LFM | 600 LFM |
| 902-21-2-12-2-B-0 | 12 | 21mm | 12.4 C/W | 6.61 C/W | 4.37 C/W | 3.7 C/W |
| 902-21-2-15-2-B-0 | 15 | 21mm | 11.73 C/W | 5.84 C/W | 4.09 C/W | 3.42 C/W |
| 902-21-2-18-2-B-0 | 18 | 21mm | 11.06 C/W | 5.51 C/W | 3.76 C/W | 3.07 C/W |
| 902-21-2-21-2-B-0 | 21 | 21mm | 10.38 C/W | 5.20 C/W | 3.49 C/W | 2.84 C/W |
| 902-21-2-23-2-B-0 | 23 | 21mm | 10.27 C/W | 4.9 C/W | 3.26 C/W | 2.62 C/W |
| 902-21-2-28-2-B-0 | 28 | 21mm | 9.98 C/W | 4.55 C/W | 2.98 C/W | 2.42 C/W |
| 902-21-2-33-2-B-0 | 33 | 21mm | 9.7 C/W | 4.18 C/W | 2.73 C/W | 2.21 C/W |

THERMAL PERFORMANCE:

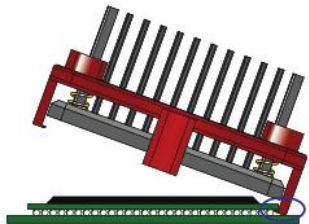


| Series | Chip Size | Construction | Height | Chip Height | Finish | Interface |
|--------|-----------|--------------|-----------|-------------|----------------|-----------|
| 902- | 19- | 2- | 12- | 1- | B- | 1 |
| | 19 | 2= Pin Fin | 12 = 11.6 | 1 = .9-2.1 | B = BLK ANO | 0 = None |
| | 21 | | 15 = 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 | | | | | |

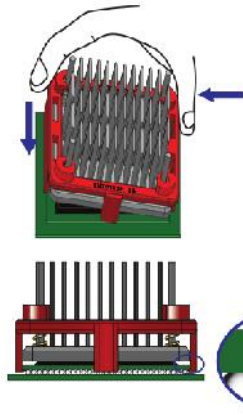


Wakefield-Vette's heat sink assemblies onto chip set using the space that is between the PCB and the substrate of the solder balls. The solder balls provide a minimal gap of .5mm to .7mm. Attachment feature is below a .4mm thickness. The clipping system will not interfere or damage chip. Contact area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

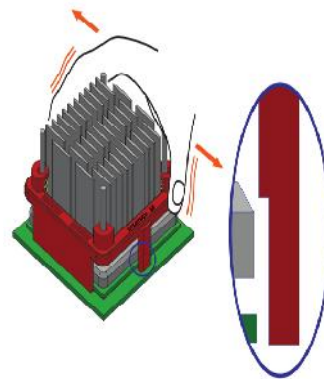
ASSEMBLY INSTRUCTION:



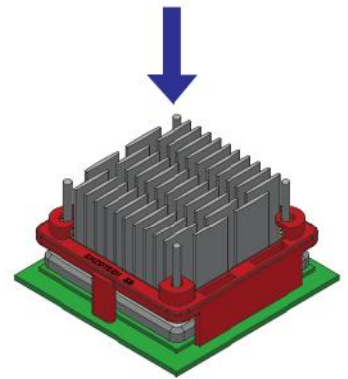
Step 1: Hook the clip under one side of the BGA chip set.



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.



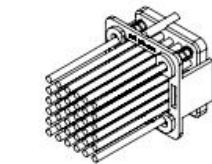
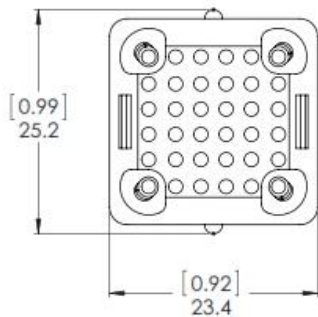
Step 4: Press firmly down to make sure clips fully engage edges of chip set. Heat Sink should not move around easily.

Random Vibration Test

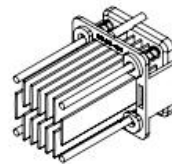
Frequency : 5 Hz to 500 Hz
 Acceleration : 3.13 grms
 P.S.D : 0.01 g²/HZ (5 Hz)
 0.02 g²/HZ (20 Hz to 500 Hz)
 Test Axis : X, Y, Z axis
 Test Time : 10 mins (Each axis)
 Total Test Time : 30 mins

SHOCK TEST SPECIFICATION :

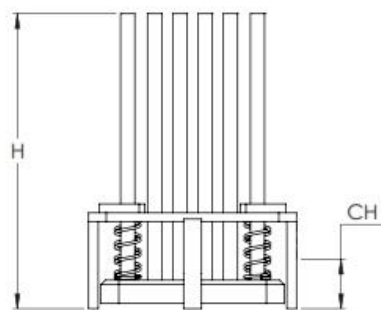
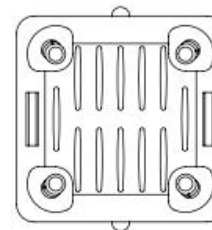
Wave Form : Half sine wave
 Acceleration : 50 g
 Duration Time : 11 ms
 No. of Shock : Each axis 3 times
 Shock Direction : $\pm X$, $\pm Y$, $\pm Z$ axis
 Reliability & Communication
 Testing Instruments



CONSTRUCTION CODE- 2
PIN FINS
6 X 6 PIN ARRAY =
36 FINS, 1.6 mm DIA.

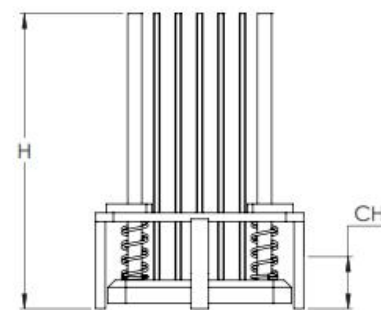


CONSTRUCTION CODE- 1
ELLIPTICAL FINS
12 FINS, 7.2 Lg X 0.7 W mm
4 CORNER PIN FINS



| 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 |



902 SERIES FOR 21mm CHIPS

| | | | | | |
|--|--|--|--|--|--|
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| MATERIAL: 6063-T5 AL ALLOY | | APPROVALS: _____ DATE: 10/21/2014 | DRAWN: _____ DATE: 10/21/2014 | CHECK: _____ DATE: 10/21/2014 | |
| FINISH: BLACK ANODIZE | | DSGN ENG: _____ DATE: 10/21/2014 | MFG ENG: _____ DATE: 10/21/2014 | QA: _____ DATE: 10/21/2014 | |
| | | SCALE: 2:1 | | MODEL INFO: MBA21052-no lip | |