



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!



## Contact us

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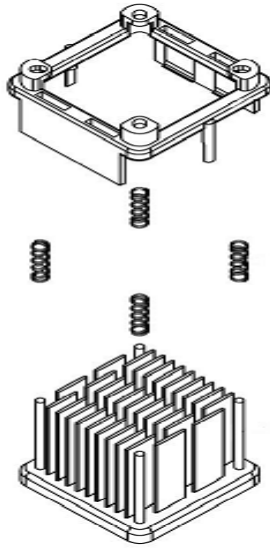


Wakefield-Vette's 900 Series Heat Sinks for Chipset can match up to devices from Intel, Broadcom, Xilinx, TI, Motorola and many more.

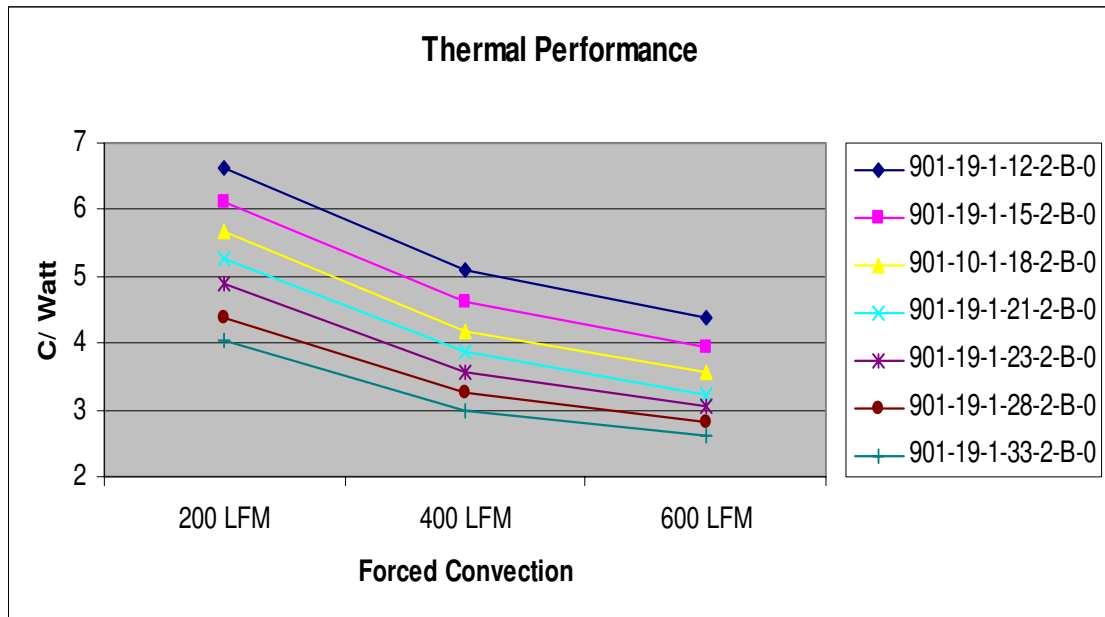
These heat sinks are designed for air flow applications in the Telecom, Data Center, Networking, and Cloud Computing Industries.

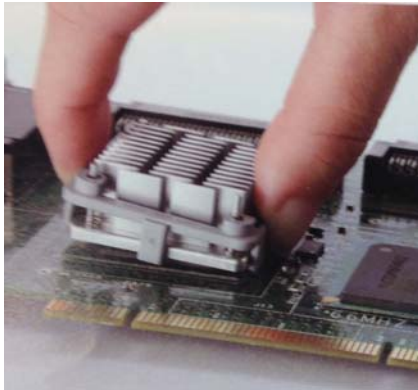
**Material:** AL 6063

**Finish:** Black Anodize



| PART #            | HEIGHT (mm) | CHIP SIZE (mm) | NATURAL CONVECTION | FORCED CONVECTION (C/W) |          |          |
|-------------------|-------------|----------------|--------------------|-------------------------|----------|----------|
|                   |             |                |                    | 200 LFM                 | 400 LFM  | 600 LFM  |
| 901-19-1-12-2-B-0 | 12          | 19             | 14.77 C/W          | 6.63 C/W                | 5.09 C/W | 4.38 C/W |
| 901-19-1-15-2-B-0 | 15          | 19             | 14 C/W             | 6.12 C/W                | 4.63 C/W | 3.95 C/W |
| 901-10-1-18-2-B-0 | 18          | 19             | 13.23 C/W          | 5.67 C/W                | 4.17 C/W | 3.58 C/W |
| 901-19-1-21-2-B-0 | 21          | 19             | 12.46 C/W          | 5.28 C/W                | 3.87 C/W | 3.24 C/W |
| 901-19-1-23-2-B-0 | 23          | 19             | 11.98 C/W          | 4.89 C/W                | 3.58 C/W | 3.06 C/W |
| 901-19-1-28-2-B-0 | 28          | 19             | 11.5 C/W           | 4.38 C/W                | 3.26 C/W | 2.80 C/W |
| 901-19-1-33-2-B-0 | 33          | 19             | 9.57 C/W           | 4.04 C/W                | 2.98 C/W | 2.62 C/W |



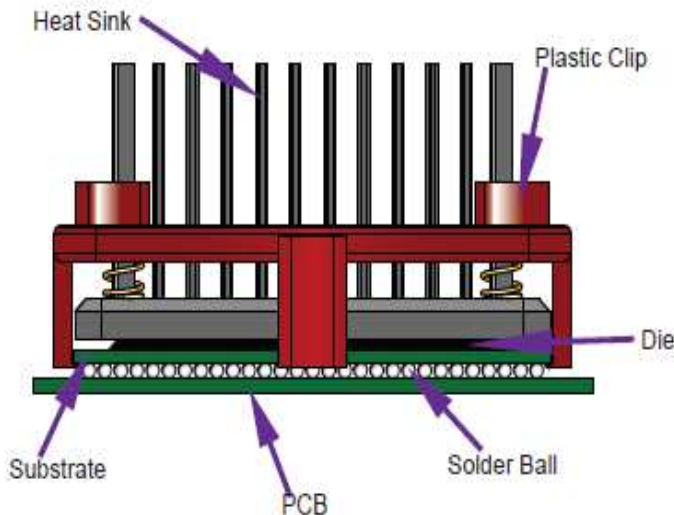


## ASSEMBLY INSTRUCTION:

**STEP 1:** Center heat Sink onto BGA. Tilt and hook one side of the clip under the BGA chip.

**STEP 2:** Press down the other side of clip to snap it onto the BGA chip.

**STEP 3:** Make sure the stop pin is not on top of the chip set. Installation is now complete.



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.

## 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

## Random Vibration Test

Frequency : 5 Hz to 500 Hz  
 Acceleration : 3.13 grms  
 P.S.D : 0.01 g<sup>2</sup>/HZ (5 Hz)  
 0.02 g<sup>2</sup>/HZ (20 Hz to 500 Hz)  
 Test Axis : X, Y, Z axis  
 Test Time : 10 mins (Each axis)  
 Total Test Time : 30 mins