

903 Series

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

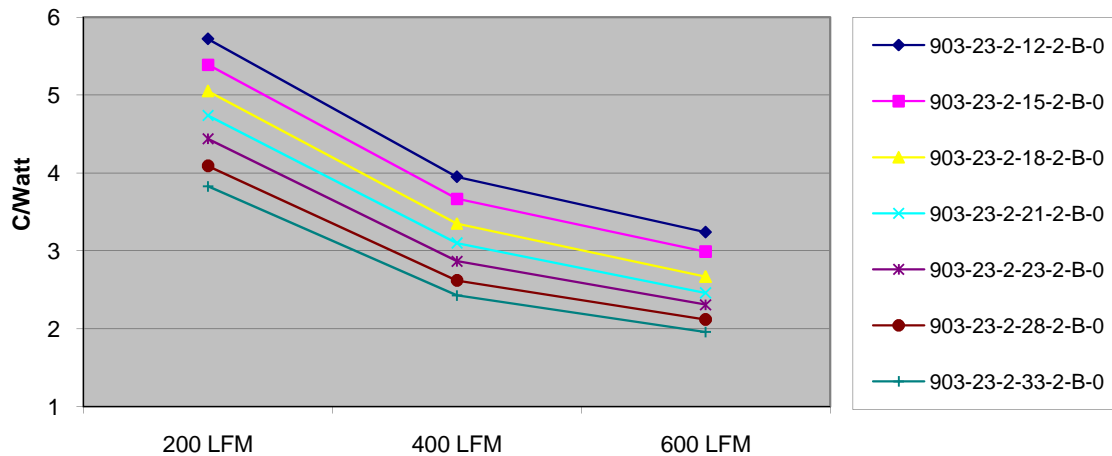


Finish: Black Anodize



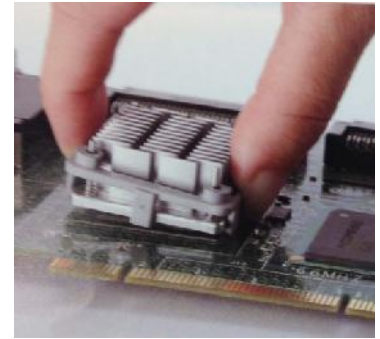
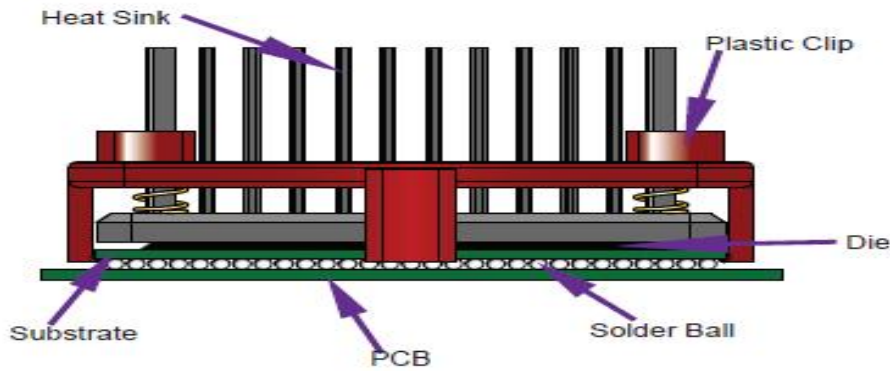
| PART # | HEIGHT (mm) | CHIP SIZE (mm) | NATURAL CONVECTION | FORCED CONVECTION (C/W) | | |
|-------------------|-------------|----------------|--------------------|-------------------------|----------|----------|
| | | | | 200 LFM | 400 LFM | 600 LFM |
| 903-23-2-12-2-B-0 | 12 | 23 | 12.06 C/W | 5.72 C/W | 3.95 C/W | 3.24 C/W |
| 903-23-2-15-2-B-0 | 15 | 23 | 11.41 C/W | 5.39 C/W | 3.67 C/W | 2.99 C/W |
| 903-23-2-18-2-B-0 | 18 | 23 | 10.76 C/W | 5.05 C/W | 3.35 C/W | 2.67 C/W |
| 903-23-2-21-2-B-0 | 21 | 23 | 10.11 C/W | 4.74 C/W | 3.1 C/W | 2.46 C/W |
| 903-23-2-23-2-B-0 | 23 | 23 | 9.99 C/W | 4.44 C/W | 2.87 C/W | 2.31 C/W |
| 903-23-2-28-2-B-0 | 28 | 23 | 9.70 C/W | 4.09 C/W | 2.62 C/W | 2.12 C/W |
| 903-23-2-33-2-B-0 | 33 | 23 | 9.41 C/W | 3.83 C/W | 2.43 C/W | 1.96 C/W |

THERMAL PERFORMANCE:



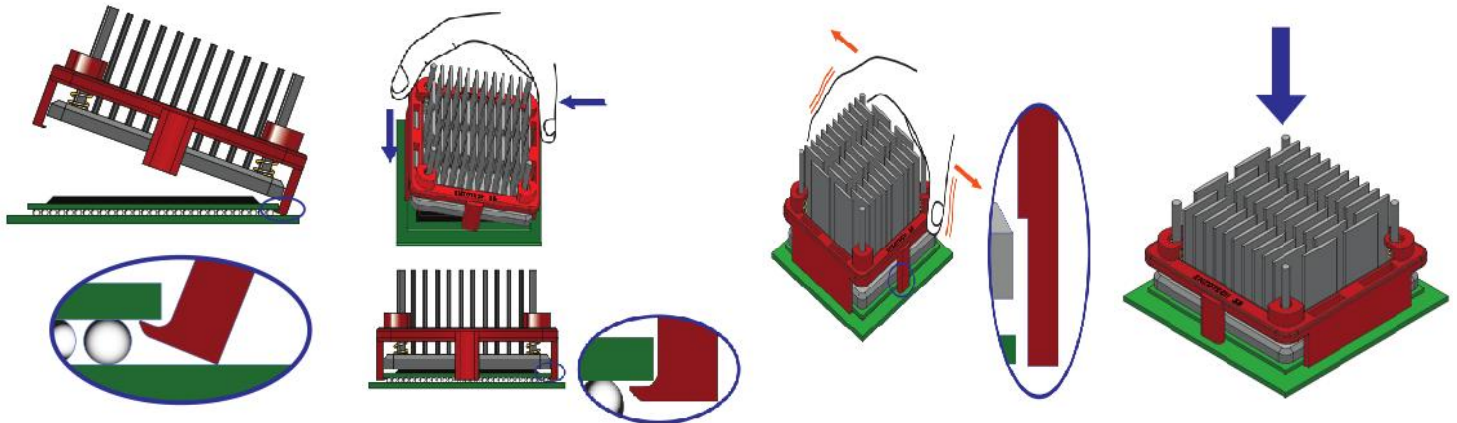
Forced Convection

| Series | Chip Size | Construction | Height | Chip Height | Finish | Interface |
|--------|-----------|--------------|-----------|-------------|-------------|-----------|
| 903- | 19- | 2= Pin Fin | 12- | 1- | B = BLK ANO | 1 |
| | 19 | | 12 = 11.6 | 1 = .9-2.1 | | |
| | 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 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.

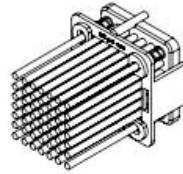
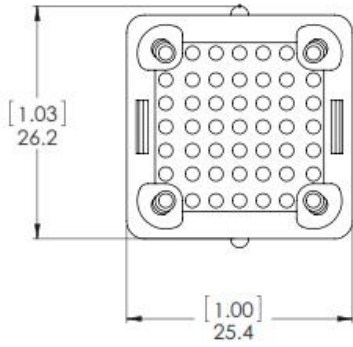
Step 4: Press firmly down to make sure clips fully engage edges of chip set. Heat Sink should not move around easily.

Random Vibration Test

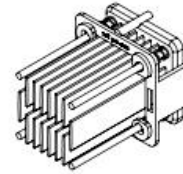
Frequency : 5 Hz to 500 Hz
 Acceleration : 3.13 grms
 P.S.D : 0.01 g²/HZ (5 Hz)
 0.02 g²/HZ (20 Hz to 500 Hz)
 Test Axis : X, Y, Z axis
 Test Time : 10 mins (Each axis)
 Total Test Time : 30 mins

SHOCK TEST SPECIFICATION :

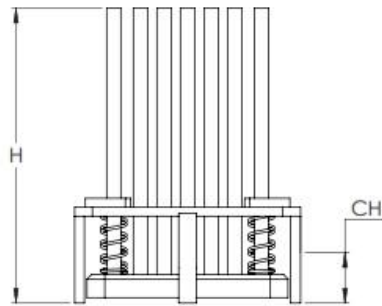
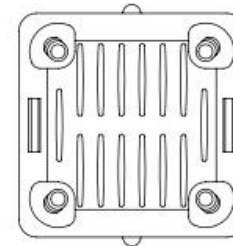
Wave Form : Half sine wave
 Acceleration : 50 g
 Duration Time : 11 ms
 No. of Shock : Each axis 3 times
 Shock Direction : ±X, ±Y, ±Z axis
 Reliability & Communication
 Testing Instruments



CONSTRUCTION CODE- 2
PIN FINS
7 X 7 PIN ARRAY =
49 FINS, 1.6 mm DIA.

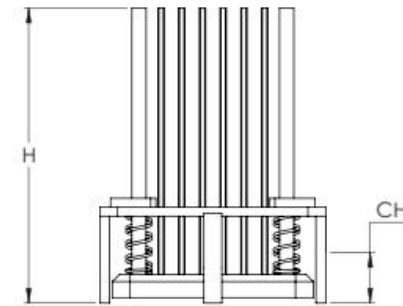


CONSTRUCTION CODE- 1
ELLIPTICAL FINS
14 FINS, 8.2 Lg X 0.7 W mm
4 CORNER PIN FINS



| 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 |



903 SERIES FOR 23mm CHIPS

| | | | | | | |
|---|--|---|--|---|--|---|
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| APPROVALS: _____ DATE: 10/22/2014 DRAWN: _____ | | CHK: _____ DSGN ENG: 10/22/2014 MFG ENG: _____ QA: _____ | | DRAWING NOT TOSCALE REVISION: SCALE: 2:1 | | |
| MATERIAL: 6063-T5 AL ALLOY | | FINISH: BLACK ANODIZE | | MODEL INFO: MBA23052-no lp | | |

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