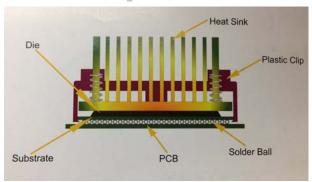


#### PIN FIN & ELLIPTICAL HEAT SINKS



Wakefield-Vette's 901-910 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. Enclosed pages have thermal performance data for natural forced convection values.

### wakefield-vette New Chip Set Next Sinks



Wakefield-Vette 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.

each corner

4 Springs at







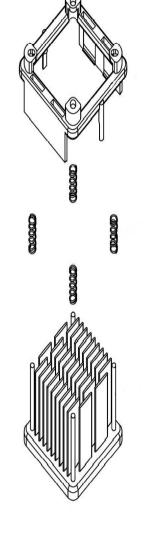
Material: AL 6063

Finish: Black Anodize

All dimensions in millimeters (mm)

### Part Numbering System

<u>Series</u>	<u>Chip Size</u>	<b>Construction</b>	<u>Height</u>	<u>Spring Type</u> *	<u>Finish</u>	Interface
<u>901-</u> XXX	<u>19-</u> XX	<u>1-</u> X	<u>12-</u> XX	<u>1-</u> X	<u>В-</u> Х	<b>1</b> X
901 902 903 904 905 906 907	19 21 23 27 29 31 33	1= Eliptical Fin 2= Pin Fin	12 = 11.6 15 = 14.6 18 = 17.6 21 = 20.6 23 = 22.6 28 = 27.6 33 = 32.6	1 = .9-2.1 CST 2 = 2.2-3.4 CST	B = BLK ANO	0 = None 1 = T725
908 909 910	35 37.5 40			*Note: When selec thickness (CST) rela		



wakefield-vette



33

29mm

8.53 C/W

# THERMAL PERFORMANCE

#### PIN FIN ELLIPTICAL FIN FORCED CONVECTION (C/W) FORCED CONVECTION (C/W) HT CHIP NATURAL NATURAL SIZE CONVECTION 200 LFM 400 LFM 600 LFM CONVECTION 200 LFM 400 LFM 600 LFM 6.6 C/W 14.77 C/W 4.79 C/W 4.16 C/W 6.63 C/W 5.09 C/W 4.38 C/W 901 12 19mm 12.74 C/W 12.05 C/W 6.3 C/W 4.51 C/W 14 C/W 6.12 C/W 4.63 C/W 3.95 C/W 15 19mm 3.86 C/W 18 19mm 11.35 C/W 5.97 C/W 4.16 C/W 3.47 C/W 13.23 C/W 5.67 C/W 4.17 C/W 3.58 /CW 10.66 C/W 5.66 C/W 3.89 C/W 12.46 C/W 5.28 C/W 3.87 C/W 21 19mm 3.21 C/W 3.24 C/W 23 19mm 10.55 C/W 5.36 C/W 3.64 C/W 2.99 C/W 11.98 C/W 4.89 C/W 3.58 C/W 3.06 C/W 28 19mm 10.27 C/W 4.91 C/W 3.36 C/W 2.71 C/W 11.5 C/W 4.38 C/W 3.26 C/W 2.80 C/W 9.99 C/W 4.52 C/W 3.07 C/W 2.49 C/W 9.57 C/W 4.04 C/W 2.98 C/W 2.62 C/W 33 19mm 902 12 21mm 12.4 C/W 6.61 C/W 4.37 C/W 14.31 C/W 5.81 C/W 3.86 C/W 3.7 C/W 3.16 C/W 15 21mm 11.73 C/W 5.84 C/W 4.09 C/W 3.42 C/W 13.57 C/W 5.3 C/W 3.5 C/W 2.89 C/W 3.76 C/W 4.95 C/W 18 21mm 11.06 C/W 5.51 C/W 3.07 C/W 12.83 C/W 3.35 C/W 2.66 C/W 21 21mm 10.38 C/W 5.20 C/W 3.49 C/W 2.84 C/W 12.09 C/W 4.61 C/W 3.111 C/W 2.47 C/W 23 10.27 C/W 3.26 C/W 2.62 C/W 4.32 C/W 2.91 C/W 2.32 C/W 21mm 4.9 C/W 11.63 C/W 28 21mm 9.98 C/W 4.55 C/W 2.98 C/W 2.42 C/W 10.47 C/W 3.89 C/W 2.61 C/W 2.09 C/W 33 21mm 9.7 C/W 4.18 C/W 2.73 C/W 2.21 C/W 9.3 C/W 3.57 C/W 2.37 C/W 1.95 C/W 23mm 5.72 C/W 4.75 C/W 903 12 12.06 C/W 3.95 C/W 3 24 C/W 13.85 C/W 3.31 C/W 2.79 C/W 15 23mm 11.41 C/W 5.39 C/W 3.67 C/W 2.99 C/W 13.14 C/W 4.38 C/W 3.05 C/W 2.53 C/W 18 23mm 10.76 C/W 5.05 C/W 3.35 C/W 2.67 C/W 12.44 C/W 4.07 C/W 2.81 C/W 2.32 C/W 21 23mm 10.11 C/W 4.74 C/W 3.1 C/W 2.46 C/W 11.73 C/W 3.84 C/W 2.57 C/W 2.11 C/W 23 23mm 9.99 C/W 4.44 C/W 2.87 C/W 2.31 C/W 11.28 C/W 3.59 C/W 2.4 C/W 1.97 C/W 23mm 9.70 C/W 4.09 C/W 2.62 C/W 2.12 C/W 10.16 C/W 3.22 C/W 2.17 C/W 1.8 C/W 28 33 23mm 9.41 C/W 3.83 C/W 2.43 C/W 1.96 C/W 9.04 C/W 2.93 C/W 1.95 C/W 1.64 C/W 904 12 27mm 11.38 C/W 4.84 C/W 3.11 C/W 2.32 C/W 12.93 C/W 4.34 C/W 3 C/W 2.53 C/W 15 10.78 C/W 4.48 C/W 2.84 C/W 2.12 C/W 12.29 C/W 4.05 C/W 2.76 C/W 2.29 C/W 27mm 18 27mm 10.17 C/W 4.13 C/W 2.56 C/W 1.88 C/W 11.64 C/W 3.73 C/W 2.5 C/W 2.07 C/W 9.56 C/W 3.82 C/W 2.32 C/W 11 C/W 3.43 C/W 2.31 C/W 21 27mm 1.72 C/W 1.9 C/W 23 27mm 9.44 C/W 3.51 C/W 2.11 C/W 1.6 C/W 10.58 C/W 3.21 C/W 2.11 C/W 1.71 C/W 1.84 C/W 28 9.13 C/W 27mm 3.26 C/W 1.97 C/W 1.49 C/W 9.54 C/W 2.89 C/W 1.51 C/W 33 27mm 8.82 C/W 3.07 C/W 1.82 C/W 1.39 C/W 8.51 C/W 2.62 C/W 1.66 C/W 1.35 C/W 905 12 29mm 11.04 C/W 4.08 C/W 2.55 C/W 1.98 C/W 12.47 C/W 4.09 C/W 2.74 C/W 2.25 C/W 15 29mm 10.46 C/W 3.82 C/W 2.32 C/W 1.78 C/W 11.86 C/W 3.81 C/W 2.52 C/W 2.02 C/W 18 9.87 C/W 3.58 C/W 2.14 C/W 1.58 C/W 11.25 C/W 3.56 C/W 2.31 C/W 1.84 C/W 29mm 21 29mm 9.28 C/W 3.33 C/W 1.96 C/W 1.44 C/W 10.63 C/W 3.3 C/W 2.12 C/W 1.65 C/W 23 29mm 9.16 C/W 3.13 C/W 1.82 C/W 1.34 C/W 10.23 C/W 3.06 C/W 1.91 C/W 1.49 C/W 28 29mm 8.84 C/W 2.82 C/W 1.64 C/W 1.2 C/W 9.24 C/W 2.72 C/W 1.69 C/W 1.33 C/W

1.07 C/W

8.24 C/W

2.47 C/W

1.49 C/W

1.18 C/W

#### Thermal Cooling Solutions from SMART to FINISH

1.47 C/W

2.59 C/W



23

28

33

40mm

40mm

40mm

7.63 C/W

7.27 C/W

6.92 C/W

## wakefield-vette

#### PIN FIN **ELLIPTICAL FIN** HT CHIP NATURAL FORCED CONVECTION (C/W) NATURAL FORCED CONVECTION (C/W) SIZE 600 LFM CONVECTION 200 LFM 400 LFM CONVECTION 200 LFM 400 LFM 600 LFM 906 12 31mm 10.71 C/W 3.49 C/W 2.28 C/W 1.69 C/W 12.02 C/W 3.37 C/W 2.25 C/W 1.87 C/W 15 31mm 10.14 C/W 3.18 C/W 2.03 C/W 1.5 C/W 11.43 C/W 3.13 C/W 2.02 C/W 1.66 C/W 9.57 C/W 2.93 C/W 1.86 C/W 1.33 C/W 10.85 C/W 2.85 C/W 1.79 C/W 1.45 C/W 18 31mm 9.01 C/W 2.72 C/W 1.69 C/W 1.2 C/W 10.27 C/W 2.63 C/W 1.63 C/W 21 31mm 1.31 C/W 23 31mm 8.88 C/W 2.5 C/W 1.54 C/W 1.07 C/W 9.88 C/W 2.44 C/W 1.5 C/W 1.19 C/W 1.05 C/W 28 31mm 8.56 C/W 2.26 C/W 1.38 C/W 96 C/W 8.93 C/W 2.21 C/W 1.36 C/W 33 31mm 8.24 C/W 2.09 C/W 1.27 C/W .88 C/W 7.98 C/W 2.02 C/W 1.19 C/W .93 C/W 907 12 33mm 10.37 C/W 3.32 C/W 2.18 C/W 1.62 C/W 11.56 C/W 3.23 C/W 2.09 C/W 1.73 C/W 9.82 C/W 3.14 C/W 1.99 C/W 1.45 C/W 11 C/W 2.97 C/W 1.88 C/W 1.54 C/W 15 33mm 18 33mm 9.28 C/W 2.89 C/W 1.78 C/W 1.3 C/W 10.45 C/W 2.69 C/W 1.7 C/W 1.37 C/W 8.73 C/W 1.60 C/W 21 33mm 2.67 C/W 1.13 C/W 9.9 C/W 2.5 C/W 1.52 C/W 1.22 C/W 23 33mm 8.60 C/W 2.45 C/W 1.43 C/W 99 C/W 9.54 C/W 2.3 C/W 1.37 C/W 1.08 C/W 1.23 C/W .98 C/W 28 33mm 8.27 C/W 2.24 C/W 1.28 C/W .87 C/W 8.62 C/W 2.08 C/W 77 C/W 33 33mm 7.94 C/W 2.03 C/W 1.15 C/W 7.71 C/W 1.89 C/W 1.08 C/W 86 C/W 908 12 10.03 C/W 3.06 C/W 1.97 C/W 1.49 C/W 11.1 C/W 3.07 C/W 2.07 C/W 1.64 C/W 35mm 15 35mm 9.5 C/W 2.85 C/W 1.81 C/W 1.34 C/W 10.58 C/W 2.79 C/W 1.87 C/W 1.46 C/W 18 35mm 8.98 C/W 2.6 C/W 1.64 C/W 1.19 C/W 10.06 C/W 2.54 C/W 1.69 C/W 1.27 C/W 21 35mm 8.46 C/W 2 4 C/W 15 C/W 1 07 C/W 9 53 C/W 2 35 C/W 1 52 C/W 1 15 C/W 23 8.32 C/W 2.19 C/W 1.34 C/W .97 C/W 8.75 C/W 2.13 C/W 1.35 C/W 1.01 C/W 35mm 28 7.99 C/W 1.97 C/W 1.19 C/W 83 C/W 7.93 C/W 1.94 C/W 1.19 C/W 35mm 86 C/W 33 35mm 7.65 C/W 1.82 C/W 1.06 C/W 7 C/W 7.11 C/W 1.69 C/W 1.02 C/W 72 C/W 37.5mm 9.60 C/W 2.93 C/W 1.90 C/W 1.36 C/W 10.52 C/W 3.11 C/W 2.01 C/W 1.61 C/W 909 12 15 37.5mm 9.11 C/W 2.71 C/W 1.72 C/W 1.19 C//W 10.04 C/W 2.82 C/W 1.79 C/W 1.41 C/W 18 37.5mm 8.61 C/W 2.52 C/W 1.53 C/W 1.05 C/W 9.56 C/W 2.59 C/W 1.59 C/W 1.22 C/W 21 37.5mm 8.11 C/W 2.25 C/W 1.36 C/W .88 C/W 9.08 C/W 2.38 C/W 1.41 C/W 1.06 C/W 23 37.5mm 7.98 C/W 2.04 C/W 1.2 C/W 75 C/W 8.75 C/W 2.15 /CW 1.24 C/W 94 C/W 28 37.5mm 7.63 C/W 1.82 C/W 1.01 C/W .63 C/W 7.93 C/W 1.88 C/W 1.08 C/W .8 C/W 68 C/W 33 37.5mm 7.29 C/W 1.6 C/W .87 C/W 52 C/W 7.11 C/W 1.64 C/W .93 C/W **910** 12 40mm 9.18 C/W 2.84 C/W 1.86 C/W 1.36 C/W 9.95 C/W 3.09 C/W 1.93 C/W 1.56 C/W 40mm 8.71 C/W 2.64 C/W 1.65 C/W 1.18 C/W 9.51 C/W 2.77 C/W 1.73 C/W 1.37 C/W 15 8.24 C/W 2.4 C/W 1.44 C/W .98 C/W 9.06 C/W 2.74 C/W 18 40mm 1.52 C/W 1.17 C/W 21 7.77 C/W 1.27 C/W 99 C/W 40mm 2.21 C/W 86 C/W 8.62 C/W 2.22 C/W 1.35 C/W

73 C/W

62 C/W

51 C/W

8.3 C/W

7.55 C/W

6.78 C/W

2.01C/W

1.8 C/W

1.61 C/W

1.19 C/W

1.04 C/W

.88 C/W

87 C/W

75 C/W

64 C/W

#### Thermal Cooling Solutions from SMART to FINISH

1.15 C/W

.99 C/W

.85 C/W

2 C/W

1.77 C/W

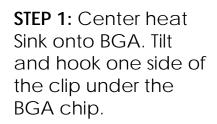
1.58 C/W



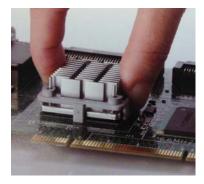
#### SHOCK TEST SPECIFICATION :

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 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

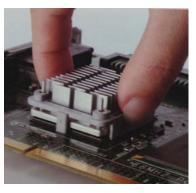




wakefield-vette



**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 Done!





## wakefield-vette

### Contact Us / Corporate Location Information

Wakefield-Vette is Global. Global presence means our engineering, design, sales and support are close to our customers, in the Americas, Europe, Middle East and Asia. It mean multi-national manufacturing and delivery. And it means a global Wakefield-Vette supply chain that can deliver, and provide support quickly, anywhere, with the highest quality solutions.

Contact sales for a list of Distributors that carry stock.

East Coast Operations New Hampshire 33 Bridge Street Pelham.NH 03076 Phone: 603-635-2800 Fax: 603-635-1900 Info@wakefield-vette.co

(Wakefield-Vette Headquarters)

2013 Wakefield-Vette. All rights reserved. Information is subject to change without notice. Wakefield-Vette assumes no liability for the errors that may appear in this document.

Visit us on the web at: www.wakefield-vette.com

