



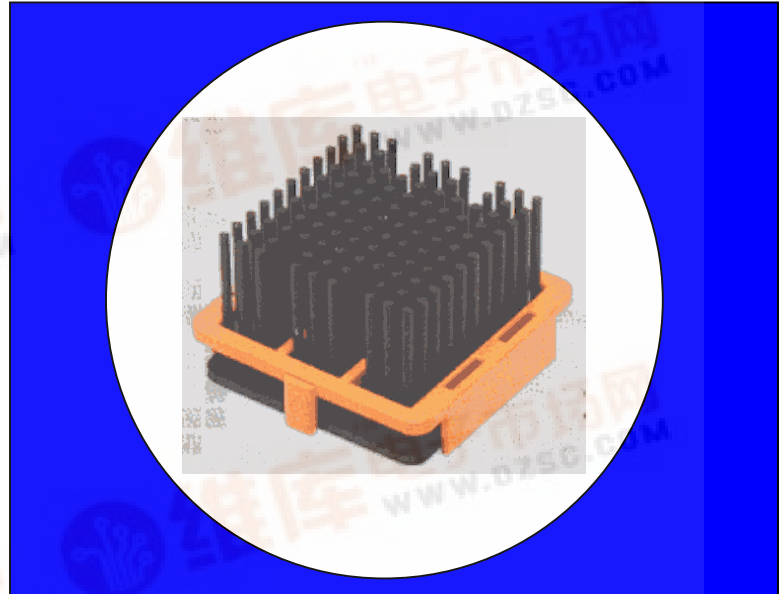
Series APR Forged Heat Sinks Technical Data

Features

- Precision forging technology for high power applications
- Omni-directional pins
- Designed for BGA and other surface mount packages
- Various mounting methods available
- Select from multiple fin heights

Product Benefits

- No special tools needed for assembly
- No additional holes required on the PCB
- Special clip easily snaps on and self-aligns



Series APR Forged Aluminum Heat Sinks with Pin Fins				
Part Number	Fin Matrix (Rows x Columns)	Length x Width x Height (mm)	Thermal Resistance (°C/Watt @ 200 LFPM)	Pressure Drop (inches of water)
APR19-19-12CB	5 x 5	18.6 x 18.6 x 11.6	7.7	0.013
APR19-19-15CB	5 x 5	18.6 x 18.6 x 14.6	7.4	0.013
APR19-19-20CB	5 x 5	18.6 x 18.6 x 19.6	4.9	0.013
APR19-19-25CB	5 x 5	18.6 x 18.6 x 24.6	4.6	0.013
APR27-27-12CB	8 x 8	26.6 x 26.6 x 11.6	5.3	0.015
APR27-27-15CB	8 x 8	26.6 x 26.6 x 14.6	4.4	0.015
APR27-27-20CB	8 x 8	26.6 x 26.6 x 19.6	3.1	0.015
APR27-27-25CB	8 x 8	26.6 x 26.6 x 24.6	2.8	0.015
APR29-29-12CB	8 x 8	28.6 x 28.6 x 11.6	3.9	0.018
APR29-29-15CB	8 x 8	28.6 x 28.6 x 14.6	3.7	0.018
APR29-29-20CB	8 x 8	28.6 x 28.6 x 19.6	2.6	0.018
APR29-29-25CB	8 x 8	28.6 x 28.6 x 24.6	2.5	0.018
APR33-33-12CB	9 x 9	32.6 x 32.6 x 11.6	3.8	0.020
APR33-33-15CB	9 x 9	32.6 x 32.6 x 14.6	3.2	0.020
APR33-33-20CB	9 x 9	32.6 x 32.6 x 19.6	2.4	0.020
APR33-33-25CB	9 x 9	32.6 x 32.6 x 24.6	1.9	0.020
Material: 6063 Aluminum Alloy, Black Anodized				

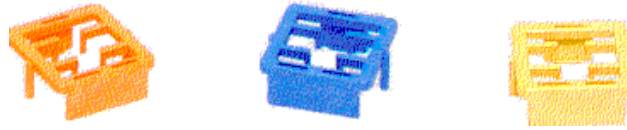
Series APR Forged Aluminum Heat Sinks with Pin Fins				
Part Number	Fin Matrix (Rows x Columns)	Length x Width x Height (mm)	Thermal Resistance (°C/Watt @ 200 LFPM)	Pressure Drop (inches of water)
APR35-35-12CB	10 x 10	34.7 x 34.7 x 11.6	3.5	0.022
APR35-35-15CB	10 x 10	34.7 x 34.7 x 14.6	2.9	0.022
APR35-35-20CB	10 x 10	34.7 x 34.7 x 19.6	2.0	0.022
APR35-35-25CB	10 x 10	34.7 x 34.7 x 24.6	1.8	0.022
APR38-38-12CB	11 x 11	37.1 x 37.1 x 11.6	3.3	0.025
APR38-38-15CB	11 x 11	37.1 x 37.1 x 14.6	2.7	0.025
APR38-38-20CB	11 x 11	37.1 x 37.1 x 19.6	1.9	0.025
APR38-38-25CB	11 x 11	37.1 x 37.1 x 24.6	1.5	0.025
APR40-40-12CB	11 x 11	39.6 x 39.6 x 11.6	2.8	0.027
APR40-40-15CB	11 x 11	39.6 x 39.6 x 14.6	2.3	0.027
APR40-40-20CB	11 x 11	39.6 x 39.6 x 19.6	1.6	0.027
APR40-40-25CB	11 x 11	39.6 x 39.6 x 24.6	1.4	0.027
APR43-43-12CB	12 x 12	42.1 x 42.1 x 11.6	2.5	0.029
APR43-43-15CB	12 x 12	42.1 x 42.1 x 14.6	2.0	0.029
APR43-43-20CB	12 x 12	42.1 x 42.1 x 19.6	1.5	0.029
APR43-43-25CB	12 x 12	42.1 x 42.1 x 24.6	1.2	0.029
Material: 6063 Aluminum Alloy, Black Anodized				

TAPE STYLES

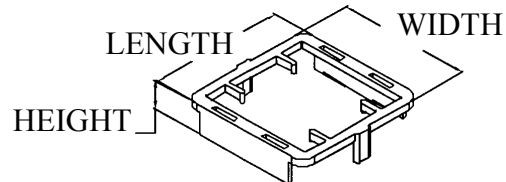
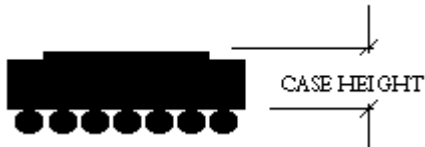
Thermal Tape	Supplier	Thickness (mm)	Thermal Impedance (°C-in²/W)	Dielectric Strength (V/mil)	Description
A01	IERC	0.13	0.82	4,000	Double-sided acrylic adhesive on a Kapton MT carrier.
T410	Chomerics	0.18	1.10	N/A	Double-sided acrylic adhesive loaded w/aluminum oxide on an aluminum foil carrier.
T411	Chomerics	0.28	1.00	N/A	Double-sided silicone adhesive with expanded aluminum mesh carrier.
T412	Chomerics	0.23	0.25	N/A	Double-sided acrylic adhesive loaded w/ titanium diboride on an expanded aluminum carrier.
8815	3M	0.38	1.20	668	Double-sided acrylic adhesive loaded with ceramic particles.

CLIP STYLES

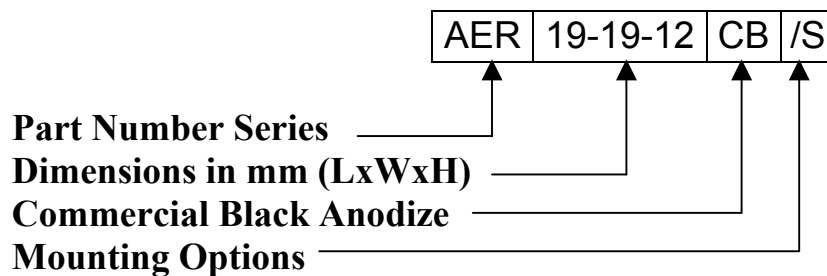
Material: Nylon Plastic per UL94-V0



Nominal Length x Width (mm)	0.9 mm +/- 0.3 mm Short Height Color: Orange	1.7 mm +/- 0.3 mm Medium Height Color: Blue	3.3 mm +/- 0.3 mm Tall Height Color: Yellow	Actual Length x Width x Height (mm)
19 x 19	C1919S	C1919M	C1919T	21.2 x 21.2 x 9.1
21 x 21	C2121S	C2121M	C2121T	23.2 x 23.7 x 9.1
23 x 23	C2323S	C2323M	C2323T	25.2 x 25.7 x 9.1
25 x 25	C2525S	C2525M	C2525T	27.2 x 27.7 x 9.1
27 x 27	C2727S	C2727M	C2727T	29.2 x 29.7 x 9.1
29 x 29	C2929S	C2929M	C2929T	31.2 x 31.2 x 9.1
31 x 31	C3131S	C3131M	C3131T	33.2 x 33.7 x 9.1
33 x 33	C3333S	C3333M	C3333T	35.2 x 35.2 x 9.1
35 x 35	C3535S	C3535M	C3535T	37.2 x 37.7 x 9.1
37.5 x 37.5	C3838S	C3838M	C3838T	39.7 x 40.2 x 9.1
40 x 40	C4040S	C4040M	C4040T	42.2 x 42.7 x 9.1
42.5 x 42.5	C4343S	C4343M	C4343T	44.7 x 45.1 x 9.1
45 x 45	C4545S	C4545M	C4545T	42.7 x 47.7 x 9.1



HOW TO ORDER?



<u>Clip</u>	<u>Adhesive</u>
Short “/S”	Double-sided Kapton® “/A01”
Medium “/M”	Chomerics Thermattach® “T410, T411, or T412”
Tall “/T”	3M™ “8815”