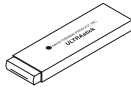


AAVID THERMALLOY Heat Sinks

Aavid's Ultrastick™ is a unique phase-change thermal interface material that surpasses grease in thermal performance and long-term stability. This solid, silicone free, paraffin based thermal compound changes phase at 60°C, with a concurrent volumetric expansion that fills gaps between the mating surfaces. One cost effective application leaves a thin, film like deposit, providing excellent heat transfer and low interface thermal resistance.



Features:

- Thermal resistance 20% lower than thermal grease, with significant long-term reliability benefits
- Excellent heat transfer properties, consistent at mounting pressures from less than 5 psi to more than 200 psi
- No run-out, migration, dry-out, or flaking that can occur with typical thermal grease
- Non-toxic and inert
- Electrically non-conductive
- Easy to use and dry to the touch after application, reducing labor costs
- Each bar covers approximately 1,000 in²

HS243-ND.....15.88

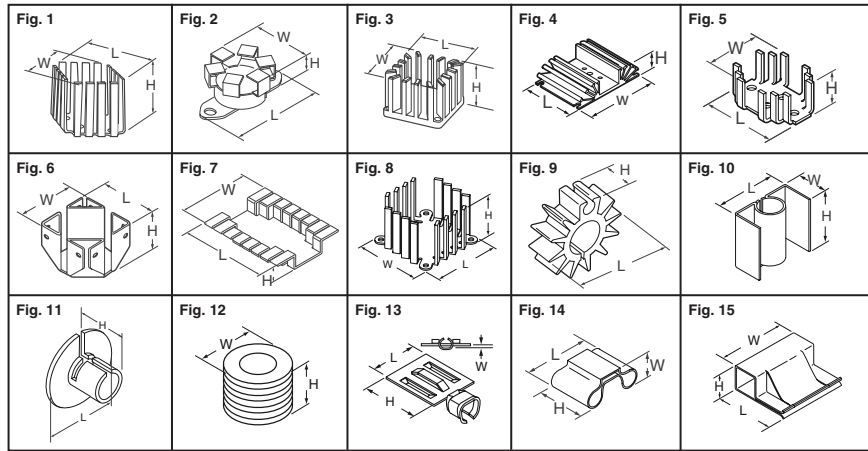


Fig.	Description	Dimensions – Inch (mm) L x W x H	Thermal Resistance °C/W	Digi-Key Part No.	Price Each 1 10 100	Aavid Part No.
1	TO-3, Compact Heat Sink, 5W, Black	1.88 x 1.40 x .50 (47.75 x 35.56 x 12.70)	11.5	HS148-ND◆	.64 .58 .45	501303B00000G
	TO-3, Compact Heat Sink, 7W, Black	1.88 x 1.40 x .75 (47.75 x 35.56 x 19.05)	8.3	HS149-ND◆	.69 .62 .49	501403B00000G
	TO-3, With Wave-On Mounts, 9W, Black	1.88 x 1.40 x .75 (47.75 x 35.56 x 19.05)	8.3	HS267-ND	1.97 1.78 1.38	501403B00100
	TO-3, With Wave-On Mounts, 9W, Black	1.88 x 1.40 x .75 (47.75 x 35.56 x 19.05)	8.3	HS384-ND◆	2.04 1.84 1.43	501403B00100G
	TO-3, Compact Heat Sink, 8.5W, Black	1.88 x 1.40 x 1.00 (47.75 x 35.56 x 25.40)	6.3	HS248-ND◆	.95 .86 .67	501503B00000G
2	TO-3, With Wave-On Mounts, 9W, Black	1.88 x 1.40 x 1.00 (47.75 x 35.56 x 25.40)	6.3	HS269-ND	1.89 1.71 1.33	501503B00100
	TO-3, Compact Heat Sink, 9.5W, Black	1.88 x 1.40 x 1.25 (47.75 x 35.56 x 31.75)	5.4	HS110-ND◆	.97 .88 .68	501603B00000G
	TO-3, Compact, 9W, Gold	1.88 x 1.40 x 1.25 (47.75 x 35.56 x 31.75)	5.4	HS270-ND◆	.87 .79 .61	501603C00000
3	TO-3, Expandable Collar Type (Can be used with Fig. 1), Black	1.54 x 1.125 x .87 (39.12 x 28.57 x 22.10)	22.0	HS236-ND◆	.70 .64 .50	579103B00000G
	TO-3, 25W, Black	1.81 x 1.81 x 1.25 (45.97 x 45.97 x 31.75)	5.4	HS103-1.25-ND◆	3.69 3.32 2.59	568303B00000G
	TO-3, 17W, Black	1.81 x 1.81 x .50 (45.97 x 45.97 x 12.70)	12.5	HS103-0.5-ND◆	3.67 3.30 2.57	568303B00000G
4	TO-3, Free/Forced Air No Holes, 12W, Black	1.83 x 1.83 x .50 (46.48 x 46.48 x 12.70)	5.4	HS291-ND◆	3.72 3.35 2.61	568003B00000G
	TO-3, Free or Forced Air Cooling, 12W, Black	1.83 x 1.83 x .75 (46.48 x 46.48 x 19.05)	5.4	HS293-ND◆	6.00 5.40 4.20	568003B00000G
	TO-3, Free or Forced Air Cooling, 12W, Black	1.81 x 1.81 x 1.00 (45.97 x 45.97 x 25.40)	5.4	HS294-ND◆	5.53 4.98 3.88	568203B00000G
5	TO-3, Power Cooler, 50W, Black	3.00 x 4.125 x 1.00 (76.20 x 104.78 x 25.40)	5.4	HS117-ND◆	5.54 4.99 3.88	198540B00000
	TO-3, Space Saver, 6W, Black	1.63 x 1.29 x .75 (41.40 x 32.77 x 19.05)	5.4	HS140-ND◆	1.17 1.05 .82	502203B00000
	TO-3, Space Saver, 8W, Black	1.63 x 1.29 x 1.00 (41.40 x 32.77 x 25.40)	5.4	HS141-ND◆	1.60 1.45 1.13	502303B00000
6	TO-3, Space Saver, 12W, Black	1.63 x 1.29 x 1.25 (41.40 x 32.77 x 31.75)	5.4	HS142-ND◆	1.50 1.35 1.05	502403B00000
	TO-3, Heat Sink, Fold-Back Fins, No Holes, 10W, Black	1.83 x 1.83 x 1.31 (46.48 x 46.48 x 33.27)	5.4	HS296-ND◆	2.21 1.99 1.55	569000B00000G
	TO-3, Fold-Back Fins, 20W, Black	1.83 x 1.83 x 1.31 (46.48 x 46.48 x 33.27)	5.4	HS110-3-ND◆	1.07 .97 .75	569003B00000G
7	TO-3, Fold-Back Fins, 10W, Gold	1.83 x 1.83 x 1.31 (46.48 x 46.48 x 33.27)	5.4	HS298-ND	1.02 .92 .72	569003C00000
	TO-220, Dual Mount Power Cooler, 20W, Black	1.83 x 1.83 x 1.31 (46.48 x 46.48 x 33.27)	5.5	HS110-220-ND◆	1.35 1.22 .95	569022B00000G
	TO-3, Universal Hole Pattern, Low Profile, Black	2.00 x 1.75 x .375 (50.80 x 44.45 x 9.53)	7.0	HS228-ND◆	.76 .69 .54	506007B00000G
8	TO-3, Stanted Fin, 10W, Black	1.81 x 1.81 x .50 (45.97 x 45.97 x 12.70)	3.5	HS260-ND◆	1.59 1.43 1.12	500103B00000G
	TO-3, Stanted Fin, 12W, Black	1.81 x 1.81 x 1.25 (45.97 x 45.97 x 31.75)	2.5	HS264-ND◆	1.54 1.39 1.08	500403B00000G
	TO-3, Stanted Fin, 14W, Black	2.5 x 2.5 x .90 (63.50 x 63.50 x 22.86)	4.9	HS265-ND◆	1.92 1.73 1.35	500503B00000G
9	TO-5, High Performance, 2W, Black	.75 dia x .25 (19.05 dia x 6.35)	56.0	HS101-ND◆	.83 .75 .58	323005B00000G
	TO-5, Press-On, 1W, Black	.5 dia x .25 (12.7 dia x 6.35)	56.0	HS253-ND◆	1.25 1.13 .86	320205B00000G
	TO-5, Press-On, High Performance, 1W, Black	.50 dia x .375 (12.70 dia x 9.52)	30.0	HS259-ND◆	.93 .84 .65	326005B00000G
10	TO-5, Snap-On Cooler, 1.5W, Black	.83 x .395 x .50 (21.08 x 10.03 x 12.70)	38.0	HS217-ND◆	.37 .27 .19	578205B00000G
	TO-5, Snap-On Cooler, 2W, Black	.83 x .395 x .75 (21.08 x 10.03 x 19.05)	35.0	HS218-ND◆	.34 .25 .18	578305B00000G
	TO-5, Dual Fin Press-Fit Heat Sink, Black	.75 dia x .40 (19.05 dia x 10.16)	56.0	HS242-ND◆	1.79 1.61 1.26	322505B00000G
11	TO-5, Press-On, 1.25W, Black	.75 dia x .25 (19.05 dia x 6.35)	40.0	HS257-ND◆	1.81 1.63 1.27	322605B00000G
	TO-5, Press-On, 1.25W, Gold	.75 dia x .25 (19.05 dia x 6.35)	40.0	HS258-ND◆	1.83 1.65 1.29	322605C00000
	TO-92 and TO-18, Press Fit, 1W, Black	.50 dia x .235 (12.70 dia x 5.97)	100.0	HS100-ND◆	.94 .85 .66	322400B00000G
12	TO-5, 2 Piece Part for Max Dissipation, 1W, Gold	.625 dia x .271 (15.88 dia x 6.88)	22.0	HS254-ND	5.23 4.71 3.66	311127C00000
	TO-5 & TO-39, 2 Piece Part for Max Dissipation, 2W, Black	.75 dia x .290 (19.05 dia x 7.37)	20.0	HS255-ND◆	8.17 7.36 5.73	312127B00000G
	TO-92, Press Fit Heat Sink, For Standard or Modified Package, Black	.60 x .05 x .50 (15.24 x 1.27 x 12.70)	64.0	HS251-ND◆	.33 .24 .17	575200B00000G
13	TO-126, Vertical Mount Clip-On Cooler, Black	.775 x .32 x .52 (19.69 x 8.13 x 13.21)	26.0	HS216-ND◆	.33 .24 .17	577500B00000G
	TO-202, Compact Clip-On Heat Sink, Black	.58 x .80 x .25 (14.73 x 20.32 x 6.35)	28.0	HS247-ND◆	.41 .30 .21	574004B00000G
	TO-202, Low Profile Heat Sink, Black	.52 x .375 x .75 (13.21 x 9.53 x 19.05)	27.2	HS214-ND◆	.32 .23 .16	577304B00000G
14	TO-202, Low Profile Heat Sink, Black	.52 x .50 x .75 (13.21 x 12.70 x 19.05)	24.0	HS215-ND◆	.32 .23 .16	577404B00000G
	TO-220, Compact Heat Sink, Black	.52 x .25 x .75 (13.21 x 6.35 x 19.05)	32.0	HS105-ND◆	.29 .21 .15	577002B00000G
	TO-220, Compact Heat Sink, Black	.52 x .375 x .75 (13.21 x 9.53 x 19.05)	25.9	HS106-ND◆	.26 .19 .13	577102B00000G
15	TO-220, Compact Heat Sink, Black	.52 x .50 x .75 (13.21 x 12.70 x 19.05)	24.4	HS107-ND◆	.26 .19 .14	577202B00000
	TO-220, Low Profile, 2.5W, Gold	.75 x .75 x .375 (19.05 x 19.05 x 9.52)	24.0	HS272-ND◆	.25 .23 .18	507302C00000
	TO-220, Low Profile, Low Cost Cooler, 2.5W, Black	.75 x .75 x .375 (19.05 x 19.05 x 9.52)	24.0	HS115-ND◆	.29 .21 .15	507302B00000G
16	TO-220, 2 Hole Pattern Heat Sink, Black	1.00 x .50 x 1.18 (25.40 x 12.70 x 29.97)	16.7	HS230-ND◆	4.1 .32 .24	530613B00000G
	TO-220, Horizontal/Vertical Mount, 4.5W, Black	1.00 x 1.18 x .50 (25.40 x 29.97 x 12.70)	30.7	HS278-ND◆	.34 .24 .16	530614B00000G
	TO-220, Horizontal/Vertical Mount, 3.7W, Gold	1.00 x .71 x .50 (25.40 x 18.03 x 12.70)	20.3	HS279-ND◆	.25 .22 .18	530714C00000
17	TO-220, Compact Heat Sink, With Tabs, Black	.52 x .25 x .75 (13.21 x 6.35 x 19.05)	32.0	HS367-ND◆	.33 .31 .24	577002B04000G
	TO-220, Compact Heat Sink, With Center Tabs, Black	.52 x .375 x .75 (13.21 x 9.53 x 19.05)	25.9	HS368-ND◆	.33 .30 .24	577102B04000G
	TO-220, Low Cost Vertical Mount, With Front Tabs, Black	1.00 x .50 x 1.18 (25.40 x 12.70 x 29.97)	13.6	HS362-ND◆	2.71 2.44 1.90	575002T00000G
18	TO-220, Low Cost Vertical Mount, With Front Tabs, Black	1.00 x .50 x 1.18 (25.40 x 12.70 x 29.97)	13.6	HS353-ND◆	2.25 2.03 1.58	563002T00000G
	TO-220, Low Cost Vertical Mount, With Center Tabs, Black	1.00 x .50 x 1.18 (25.40 x 12.70 x 29.97)	13.6	HS348-ND◆	2.37 2.14 1.66	5293002T00000G
	TO-220, Vertical Mount With Black Tabs	1.00 x .50 x 1.18 (25.40 x 12.70 x 29.97)	13.0	HS194-ND◆	.36 .29 .22	563002B00000G
19	TO-220, Vertical Mount With Black Tabs	1.00 x .50 x .95 (25.40 x 12.70 x 24.13)	16.6	HS207-ND◆	.46 .37 .27	576602B00000G
	TO-220, Vertical Mount With Pre-Tinned Tabs, Black	1.00 x .50 x .95 (25.40 x 12.70 x 24.13)	16.6	HS363-ND◆	3.22 2.90 2.26	576602T00000G
	TO-220, Power Cooler, 9.0W, Screw Mount, Gold	1.50 x 1.375 x 1.00 (38.10 x 34.93 x 25.40)	13.4	HS282-ND◆	.96 .87 .67	531002C00000
20	TO-220, Power Cooler, With Pins, Heavy Duty, Black	1.38 x .50 x 1.00 (35.05 x 12.70 x 25.40)	13.4	HS351-ND◆	.94 .85 .66	531002B02500G
	TO-220, Power Cooler, 9.0W, Black	1.38 x .50 x 1.50 (35.05 x 12.70 x 38.10)	10.4	HS284-ND◆	.92 .83 .65	531102B00000G
	TO-220, Power Cooler, With Pins, Heavy Duty, Black	1.38 x .50 x 1.50 (35.05 x 12.70 x 38.10)	10.4	HS352-ND◆	.99 .90 .70	531102B02500G
21	TO-220, Power Cooler, With Pins, 2-Sided Mount, Black	1.38 x .50 x 1.50 (35.05 x 12.70 x 38.10)	11.0	HS346-ND◆	.83 .76 .59	513102B02500G
	TO-220, Power Cooler, With Pins, 2-Sided Mount, Gold	1.65 x 1.00 x 1.50 (41.91 x 25.40 x 38.10)	3.7	HS350-ND◆	1.20 1.08 .84	529802B02500G
	TO-220, Power Cooler, Black	1.38 x .50 x 1.00 (35.05 x 12.70 x 25.40)	13.4	HS231-ND◆	.86 .78 .61	531002B00000G
22	TO-220, Power Cooler, Screw Mount, Gold	1.38 x .50 x 1.50 (35.05 x 12.70 x 38.10)	10.4	HS131-ND	1.10 1.00 .78	531102C00000
	TO-220, Power Cooler, With Pins	1.38 x .50 x 1.50 (35.05 x 12.70 x 38.10)	10.4	HS399-ND◆	1.31 1.19 .92	531102V02500G
	TO-220, Power Cooler, Screw Mount, Gold	1.38 x .50 x 2.00 (35.05 x 12.70 x 50.80)	8.3	HS132-ND	1.13 1.02 .80	531202C00000
23	TO-220, Power Cooler, With Pins, Gold	1.38 x .50 x 2.00 (35.05 x 12.70 x 50.80)	8.3	HS132-P-ND	1.41 1.27 .99	531202C02500
	TO-220, Power Cooler, 9.0W, Black	1.38 x .50 x 2.00 (35.05 x 12.70 x 50.80)	8.3	HS287-ND◆	1.04 .94 .73	531202B00000G
	TO-220, Power Cooler, With Pins, Black	1.38 x .50 x 2.00 (35.05 x 12.70 x 50.80)	8.3	HS382-ND◆	1.08 .98 .76	531202B02500G
24	TO-220, Vertical Power, 10W, Screw Mount, Black	1.65 x 1.00 x 1.50 (41.91 x 25.40 x 38.10)	2.5	HS276-ND◆	1.08 .98 .76	529802B00000
	TO-220, Power Cooler, With Pins, Black	1.65 x 1.00 x 2.00 (41.91 x 25.40 x 50.80)	3.4	HS374-ND◆	1.46 1.32 1.03	529902B02500G
	TO-220, Power Cooler, With Pins, 9.0W, Black	1.38 x .50 x 2.50 (35.05 x 12.70 x 63.50)	8.0	HS386-ND◆	1.12 1.01 .79	531302B02500G
25	TO-220, Power Cooler, Screw Mount, Gold	1.38 x .50 x 2.50 (35.05 x 12.70 x 63.50)	8.0	HS133-ND	1.35 1.22 .95	531302C00000
	TO-220, Power Cooler, With Pins, Gold	1.38 x .50 x 2.50 (35.05 x 12.70 x 63.50)	8.0	HS133-P-ND	1.26 1.14 .89	531302C02500
	TO-220, Power Cooler, With Pins, Black	1.65 x 1.00 x 2.50 (41.91 x 25.40 x 63.50)	3.8	HS380-ND◆	1.36 1.23 .96	530002B02500G
26	TO-218, Power Cooler, With Pins, 10W, Black	1.38 x .50 x 2.00 (35.05 x 12.70 x 50.80)	8.3	HS347-ND◆	.98 .88 .69	513201B02500G

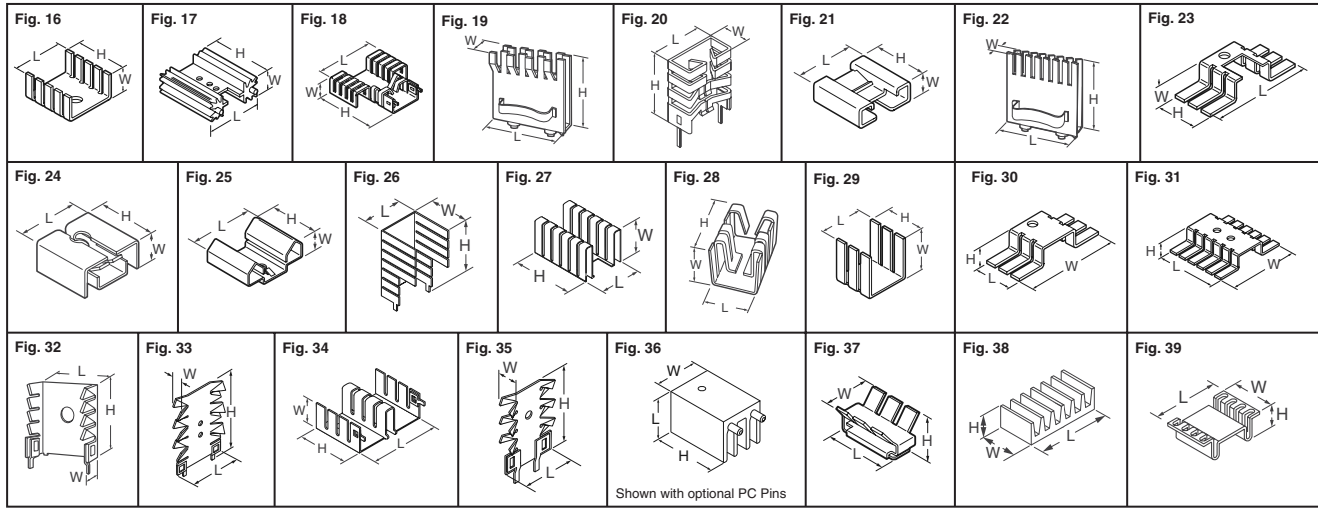
* Dielectric Coating Unless otherwise noted, all heat sinks are black anodized aluminum. ◆ RoHS Compliant

(Continued)

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Fig.	Description	Dimensions – Inch (mm) L x W x H	Thermal Resistance °C/W	Digi-Key Part No.	Price Each			Aavid Part No.
					1	10	100	
17	TO-218, Power Cooler, With Pins, 20W, Black TO-218, Vertical Power, 10W, With Pins, Black	1.65 x 1.00 x 1.50 (41.91 x 25.40 x 38.10) 1.65 x 1.00 x 2.50 (41.91 x 25.4 x 63.50)	3.7 2.5	HS349-ND HS385-ND	1.22 1.52	1.10 1.38	.86 1.07	529801B02500G 530001B02500G
18	TO-218, Quick Attach, With Pins, 12W, Black	1.95 x .50 x 1.97 (49.53 x 12.70 x 50.04)	6.5	HS340-ND	.99	.90	.70	592201B03400G
19	TO-220, Staggered High Rise Fins, With Kool Clip, Black TO-218, Twisted High Rise Fins, With Kool Clip, Black TO-218, Twisted High Rise Fins, With Kool Clip, Black	1.75 x .50 x 1.75 (44.45 x 12.70 x 44.45) 1.75 x .50 x 1.75 (44.45 x 12.70 x 44.45) 1.75 x .50 x 1.75 (44.45 x 12.70 x 44.45)	16.8 6.3 6.3	HS342-ND HS109-ND HS335-ND	1.36 1.39 1.36	1.23 1.25 1.23	.96 .96 .96	530402B00150G 530101B00150G 530101B00150G
20	TO-218, Clip-On, Vertical PC Mount, With Standard Tabs, Black TO-218, Clip-On, Vertical PC Mount, With Standard Tabs, Black	1.00 x .50 x 1.22 (25.40 x 12.70 x 30.99) 1.00 x .50 x 1.22 (25.40 x 12.70 x 30.99)	11.5 11.5	HS234-ND HS377-ND	1.13 1.11	1.02 1.00	.79 .78	566010B03400G 566010B03400G
21	TO-202, Clip-On Cooler, 5W, Black	.90 x 1.02 x .39 (22.86 x 25.91 x 9.91)	16.8	HS119-ND	.46	.33	.23	574204B00000G
22	TO-220, Twisted High Rise Fins, With Kool Clip, Black TO-220, Dual Mount, With Kool Clip, Black	1.75 x .50 x 1.75 (44.45 x 12.70 x 44.45) 1.75 x .50 x 1.75 (44.45 x 12.70 x 44.45)	6.3 4.4	HS343-ND HS383-ND	1.36 1.55	1.23 1.40	.96 1.09	530102B00150G 530162B00162G
23	TO-220, 2W Extended Cap For HS112 and HS114, Black	1.75 x .70 x .50 (44.45 x 17.78 x 12.70)	15.6	HS113-ND	.33	.24	.17	507102B00000G
24	TO-220, Vertical Mount Clip-On Cooler, With 1 Mount Hole, Black	.75 x .86 x .395 (19.05 x 21.84 x 10.03)	23.2	HS111-ND	.30	.22	.16	574102B00000G
	TO-220, Vertical Mount Clip-On Cooler, Black	.86 x .395 x .75 (21.84 x 10.03 x 19.05)	21.2	HS198-ND	.30	.22	.15	574502B00000G
	TO-220, Horizontal Mount Clip-On PC Mount, With Std. Tabs, Black	.86 x .395 x .75 (21.84 x 10.03 x 19.05)	23.2	HS355-ND	.55	.50	.39	574402B03200G
	TO-220, Vertical Mount Clip-On, PC Mount, w/Long Tabs, Black	.86 x .395 x .75 (21.84 x 10.03 x 19.05)	21.2	HS357-ND	.41	.37	.29	574502B03300G
	TO-220, Vertical Mount Clip-On, PC Mount, w/Stepped Tabs, Black	.86 x .395 x .75 (21.84 x 10.03 x 19.05)	21.2	HS358-ND	.36	.33	.26	574502B03700G
	TO-220, Vertical Mount Clip-On, PC Mount, w/Long Tabs, Black	.86 x .395 x 1.375 (21.84 x 10.03 x 34.93)	16.0	HS360-ND	.57	.51	.40	574902B03300G
25	TO-220, Snap Down, 5W, Black	.75 x 1.12 x .435 (19.05 x 28.45 x 11.05)	16.9	HS116-ND	.41	.33	.24	575102B00000G
	TO-220, Snap-Down With Built-In Clip, For Standard TO-220s, Black	.975 x .44 x .75 (24.77 x 11.18 x 19.05)	16.8	HS220-ND	.36	.26	.19	579302B00000G
	TO-220, Snap-Down With Built-In Clip, For Tapered TO-220s, Black	.975 x .44 x .75 (24.77 x 11.18 x 19.05)	16.8	HS221-ND	.40	.29	.20	579402B00000G
	TO-220, High Performance PC Mount, With Tabs, Black	1.00 x 1.00 x 1.675 (25.40 x 25.40 x 42.55)	10.0	HS370-ND	.81	.73	.57	590102B03600G
27	TO-220, SlimLine High Performance, Horizontal Mount, Black	1.00 x .787 x 1.45 (25.40 x 19.99 x 36.83)	12.4	HS193-ND	.52	.47	.36	551002B00000G
28	TO-220, Clip-On, Horizontal PC Mount, With Tabs, Black	.50 x .50 x .75 (12.70 x 12.70 x 19.05)	18.8	HS341-ND	.44	.39	.31	576802B03100G
	TO-220, Clip-On, 5W, Black	.50 x .50 x .75 (12.70 x 12.70 x 19.05)	18.8	HS121-ND	.42	.30	.21	576802B00000G
	TO-220, Clip-On, 5W, Black	.50 x .50 x .60 (12.70 x 12.70 x 15.24)	26.8	HS333-ND	.53	.38	.27	591202B00000G
	TO-220, Clip-On, Vertical PC Mount, With Wide Tabs, Black	.50 x .50 x .75 (12.70 x 12.70 x 19.05)	18.8	HS364-ND	.46	.41	.32	576802B03700G
	TO-220, Clip-On, Vertical PC Mount, With Long Tabs, Black	.50 x .50 x .75 (12.70 x 12.70 x 19.05)	18.8	HS365-ND	.38	.35	.27	576802B03900G
	TO-220, Clip-On, Vertical PC Mount, With Standard Tabs, Black	.50 x .50 x .75 (12.70 x 12.70 x 19.05)	18.8	HS366-ND	.44	.40	.32	576802B04100G
	TO-220, Clip-On, Vertical PC Mount, With SureLock Tabs, Black	.57 x .50 x .75 (14.48 x 12.70 x 19.05)	26.8	HS371-ND	.57	.51	.40	591302B02800G
	TO-220, Clip-On, Vertical PC Mount, With Standard Tabs, Black	.75 x .50 x .50 (19.05 x 12.70 x 12.70)	18.8	HS337-ND	.41	.38	.29	576802B04000G
29	TO-220, Economy Power Cooler, Lightweight, Black TO-220, Dual Power Cooler, 10W, Black TO-220, Power Cooler, 6W, Black	1.00 x .50 x .71 (25.40 x 12.70 x 18.03) .78 x .85 x 1.45 (19.81 x 21.59 x 36.83) .70 x .70 x .85 (17.78 x 17.78 x 21.59)	20.3 6.4 15.6	HS189-ND HS104-2-ND HS104-1-ND	.33 .47 .34	.24 .38 .25	.17 .28 .17	530714B00000G 504222B00000G 504102B00000G
30	TO-220, Basic Manual Attachment, Low Profile, Black	.70 x 1.75 x .380 (17.78 x 44.45 x 9.65)	15.6	HS112-ND	.30	.22	.16	507202B00000G
31	TO-220, Dual Basic Manual Attachment, Horizontal Mount, Black	1.45 x 1.75 x .375 (36.83 x 44.45 x 9.53)	9.6	HS114-ND	.55	.40	.28	507222B00000G
32	TO-220, Twisted Fin, Vertical PC Mount, Black	1.00 x .50 x 1.18 (25.40 x 12.70 x 29.97)	13.4	HS336-ND	.62	.56	.44	593002B03400G
	TO-220, Twisted Fin, With SureLock Tabs and Kool Clip, Black	1.00 x .50 x 1.18 (25.40 x 12.70 x 29.97)	13.0	HS375-ND	1.02	.93	.72	534202B02853G
	TO-220, Twisted Fin, Vertical, With Tabs and Kool Clip, Black	1.00 x .50 x 1.18 (25.40 x 12.70 x 29.97)	13.0	HS376-ND	1.22	1.10	.86	534202B33453G
33	TO-220, Spacesaver, Vertical Mount, With Tabs, Black	1.38 x .50 x 2.00 (35.05 x 12.70 x 50.80)	10.0	HS225-ND	.99	.72	.51	593202B03500G
	TO-220, Spacesaver, Vertical Mount, With Tabs, Black	1.38 x .50 x 2.00 (35.05 x 12.70 x 50.80)	10.0	HS373-ND	.70	.63	.49	593202B03500G
	TO-220, Spacesaver, Vertical Mount, With Kool Clip/Tabs, Black	1.38 x .48 x 2.00 (35.05 x 12.19 x 50.80)	10.4	HS192-ND	.76	.68	.53	534202B03553G
34	TO-220, Dual Basic Manual Attachment, Vertical Mount, Black	1.48 x .50 x 1.03 (37.59 x 12.70 x 26.16)	13.2	HS369-ND	.75	.67	.53	578622B03200G
35	TO-220, Spacesaver Vertical Mount, With Tabs, Black	.875 x .25 x 1.25 (22.23 x 6.35 x 31.75)	22.0	HS372-ND	.57	.51	.40	592502B03400G
	TO-220, Spacesaver Vert. Mnt. With Kool Clip-SureLock Tabs, Black	1.38 x .50 x 2.00 (35.05 x 12.70 x 50.80)	8.8	HS238-ND	1.02	.92	.72	594302B02853G
	TO-220, Spacesaver Vert. Mnt. With Kool Clip-SureLock Tabs, Black	1.38 x .50 x 2.00 (35.05 x 12.70 x 50.80)	8.8	HS379-ND	1.00	.91	.71	594302B02853G
36	TO-220, Vertical Mount, 4.3W, Black	.64 x .64 x 1.00 (16.26 x 16.26 x 25.40)	17.4	HS300-ND	1.06	.96	.75	581002B00000G
	TO-220, Vertical Mount, 4.3W, With Pins, Black	.64 x .64 x 1.00 (16.26 x 16.26 x 25.40)	17.4	HS387-ND	1.08	.98	.76	581002B02500G
	TO-220, Vertical Mount, 4.3W, With Pins, Gold	.64 x .64 x 1.00 (16.26 x 16.26 x 25.40)	17.4	HS302-ND	1.38	1.24	.97	581002C02500G
	TO-220, Vertical Mount, 2.5W, Black	.64 x .64 x 1.50 (16.26 x 16.26 x 38.10)	16.8	HS303-ND	1.03	.93	.72	581102B00000G
	TO-220, Vertical Mount, 2.5W, With Pins, Black	.64 x .64 x 1.50 (16.26 x 16.26 x 38.10)	16.8	HS388-ND	1.12	1.01	.79	581102B02500G
37	TO-220, Vertical Mount, 2.5W, With Pins, Black	.64 x .64 x 2.00 (16.26 x 16.26 x 50.80)	12.8	HS389-ND	1.50	1.35	1.05	581202B02500G
	Dip Cooler, 14 or 16 Pin IC, Clip-On, Black	.887 x .60 x .41 (22.53 x 15.24 x 10.41)	38.0	HS179-ND	.36	.29	.22	580200B00000G
	Dip Cooler, 24 Pin IC, Clip-On, Black	1.46 x 1.008 x .58 (37.08 x 25.60 x 14.73)	20.0	HS182-ND	.55	.50	.39	580500B00000G
38	Dip Cooler, 14-16 Pin, Glue-On, Black	.73 x .25 x .19 (18.54 x 6.35 x 4.83)	62.5	HS227-ND	.52	.47	.37	501200B00000G
	Dip Cooler, 24 Pin IC, Glue-On, Black	1.25 x .53 x .19 (31.75 x 13.47 x 4.83)	44.0	HS273-ND	.59	.53	.42	508500B00000G
	Dip Cooler, 40 Pin IC, Glue-On, Black	2.0 x .53 x .19 (50.8 x 13.47 x 4.83)	28.0	HS274-ND	1.09	.99	.77	508700B00000G

* Dielectric Coating Unless otherwise noted, all heat sinks are black anodized aluminum. ♦ RoHS Compliant

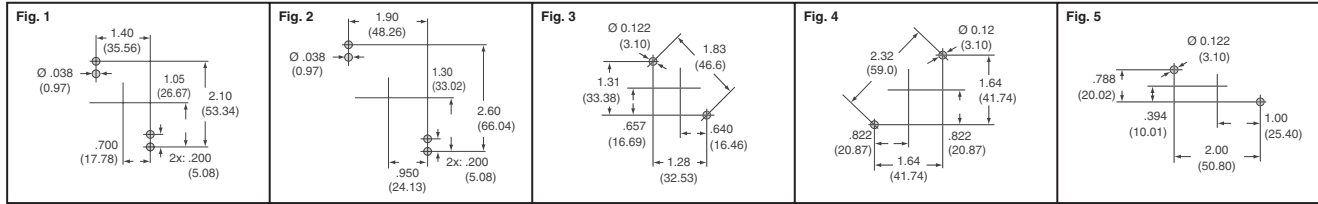
Fig.	Description	Dimensions – Inch (mm) L x W x H	Digi-Key Part No.	Cut Tape Price Each		Tape and Reel Pricing†		Aavid Part No.
				1	10	250	500	
39	SMT D2 Pak Heat Sink, Auto-Insertable, Pre-Tinned	1.03 x .50 x .40 (26.16 x 12.70 x 10.16)	HS338CT-ND	.66	.60	108.41	197.11	573300D00010G
	SMT D3 Pak Heat Sink, Auto-Insertable, Pre-Tinned	1.22 x .50 x .40 (30.99 x 12.70 x 10.16)	HS339CT-ND	.69	.62	113.50	206.37	573400D00010G

† For Tape and Reel part number, change the CT-ND to TR-ND ♦ RoHS Compliant



BGA Heat Sinks PCB Hole Patterns

Aavid Thermalloy's innovative BGA heat sinks include standard solutions to support the most demanding applications.
Features: • Flat base • Light weight • Long-term reliability



Solder Anchor Attachment Method

Features and Benefits:

- New unique wire clip design allows for complete reworkability after assembly without damage to the BGA package or PC Board
- Minimal PC Board real estate is required for mounting
- Solder Anchors provide the most rugged mounting in the industry
- Each Heat Sink utilizes a phase change pad as the interface for optimal thermal performance

Finish: Black Anodize

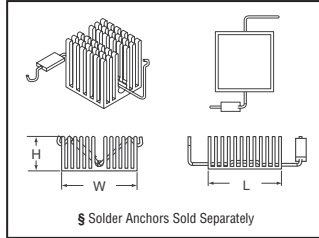


Fig.	Width	Length	Height	Therm. Res. Nat.†	Therm. Res. Forced‡	Digi-Key Part No.	Price Each 1	10	100	Aavid Part No.
1	23.0	23.0	25.0	19.7	6.37	HS329-ND	2.58	2.32	1.81	374224B60023G
	27.0	27.0	25.0	16.5	5.47	HS330-ND	2.82	2.54	1.98	374524B60023G
	35.0	35.0	18.0	15.3	5.15	HS326-ND	2.29	2.07	1.61	374724B60024G
2	35.0	35.0	25.0	12.0	4.27	HS331-ND	3.36	3.03	2.36	374824B60024G
	40.0	40.0	10.0	20.3	6.46	HS327-ND	3.37	3.04	2.36	374924B60024G
	40.0	40.0	18.0	12.2	4.34	HS328-ND	3.64	3.28	2.55	375024B60024G
	40.0	40.0	25.0	10.3	3.83	HS332-ND	3.99	3.59	2.79	375124B60024G
Solder Anchor						HS400-ND	.35	.32	.25	125700D00000G

§ Solder anchors must be soldered to the PCB prior to attaching the heat sink clip.
† Natural convection thermal resistance based on a 75°C heat sink temperature rise.
‡ Forced convection thermal resistance based on an entering 1.0 m/s (200 fpm) airflow.

Push Pin Attachment Method

Features and Benefits:

- All Heat Sinks utilize industry standard hole patterns
- Plastic push pins are standard. Consult Aavid Thermalloy for versions available with brass push pins for more rugged applications
- Minimal diameter holes are necessary for mounting to PC Board

Finish: Black Anodize

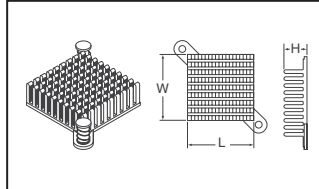


Fig.	Width	Length	Height	Therm. Res. Nat.†	Therm. Res. Forced‡	Digi-Key Part No.	Price Each 1	10	100	Aavid Part No.
3	28.5	28.5	10.0	30.6	9.26	HS306-ND	1.87	1.69	1.32	10-6327-01 REV B-G
4	37.4	37.4	6.0	32.6	9.91	HS308-ND§	2.46	2.22	1.73	372924M02000G
5	41.4	45.2	11.7	14.2	4.91	HS307-ND	2.35	2.12	1.65	10-L4LB-11G

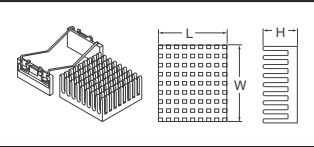
† Natural convection thermal resistance based on a 75°C heat sink temperature rise.
‡ Forced convection thermal resistance based on an entering 1.0 m/s (200 fpm) airflow.
§ Finish: Green Anodize

Clip Attachment Method

Features and Benefits:

- A unique clip eliminates the need for mounting holes in the PC Board
- Each Heat Sink utilizes a Phase Change Pad as the interface for optimal thermal performance
- The clips unique design eliminates the need for thermal tape attachment

Finish: Black Anodize



Width	Length	Height	Therm. Res. Nat.†	Therm. Res. Forced‡	Digi-Key Part No.	Price Each 1	10	100	Aavid Part No.
34.5	31.4	15.6	19.7	6.30	HS309-ND	4.04	3.64	2.83	2519B-EP11-BGS5G
38.1	38.0	10.2	22.1	6.94	HS310-ND	3.97	3.58	2.78	2522B-EP04-BGS5G

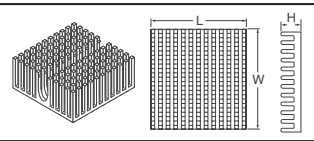
† Natural convection thermal resistance based on a 75°C heat sink temperature rise.
‡ Forced convection thermal resistance based on an entering 1.0 m/s (200 fpm) airflow.
◆ RoHS Compliant

Tape Attachment Method

Features and Benefits:

- Tape mounted versions eliminate the need for mounting holes in the PC Board
- These Heat Sinks can be used with either plastic or metal/ceramic BGA Packages
- These Heat Sinks are compatible with Ther-a-grip Tapes

Finish: Black Anodize



Tape Surface	Width	Length	Height	Therm. Res. Nat.†	Therm. Res. Forced‡	Digi-Key Part No.	Price Each 1	10	100	Aavid Part No.
Plastic	23.0	23.0	10.0	40.0	11.69	HS316-ND◆	1.97	1.78	1.38	374024B00035G
	23.0	23.0	18.0	23.4	7.39	HS317-ND◆	2.01	1.81	1.41	374124B00035G
	27.0	27.0	10.0	30.6	9.35	HS318-ND◆	2.32	2.09	1.63	374324B00035G
	27.0	27.0	18.0	20.3	6.46	HS319-ND◆	2.48	2.23	1.74	374424B00035G
	30.0	30.0	9.4	29.4	9.11	HS390-ND◆	2.49	2.25	1.75	335824B00034G
	35.0	35.0	7.0	31.9	9.67	HS313-ND	2.71	2.44	1.90	371824B00032G
Metal	35.0	35.0	7.0	31.9	9.67	HS392-ND◆	2.80	2.52	1.96	371824B00032G
	35.0	35.0	7.0	31.9	9.67	HS393-ND◆	2.93	2.63	2.05	371824B00034G
	35.0	35.0	10.0	23.4	7.55	HS395-ND◆	2.77	2.50	1.94	374624B00032G
	35.0	35.0	10.0	23.4	7.55	HS321-ND◆	3.09	2.79	2.17	374624B00035G
	35.0	35.0	18.0	15.3	5.15	HS322-ND	2.78	2.50	1.95	374724B00032G
	35.0	35.0	18.0	15.3	5.15	HS396-ND◆	2.74	2.47	1.92	374724B00032G
	35.0	35.0	18.0	15.3	5.15	HS323-ND◆	2.85	2.57	2.00	374724B00035G
	37.4	37.4	6.0	32.6	9.91	HS394-ND◆	2.85	2.57	2.00	373324M00032G
	40.0	40.0	10.0	20.3	6.46	HS397-ND◆	3.11	2.81	2.18	374924B00032G
	40.0	40.0	18.0	12.2	4.34	HS398-ND◆	3.66	3.30	2.57	375024B00032G
	40.1	40.1	11.4	18.4	6.02	HS312-ND	2.93	2.64	2.06	364424B00032G
	40.1	40.1	11.4	18.4	6.02	HS391-ND◆	3.03	2.73	2.13	364424B00032G

† Natural convection thermal resistance based on a 75°C heat sink temperature rise.
‡ Forced convection thermal resistance based on an entering 1.0 m/s (200 fpm) airflow.
◆ RoHS Compliant

Panasonic "PGS" (Pyrolytic Graphite Sheet) Heat Sink Sheets



PGS is a thermal interface material which is very thin, synthetically made, has high thermal conductivity, and is made from a highly oriented graphite polymer film. It is ideal for providing thermal management/heat-sinking in limited spaces or to provide supplemental heat-sinking in addition to conventional means. This material is flexible and can be cut into customizable shapes.

Features:

- Excellent Thermal Conductivity (2 - 4 times as high as copper, 3 - 6 times as high as aluminum)
- Lightweight: Specific Gravity: 0.85 - 2.1 g/cm³ (1/4 - 1/10 of copper, 1/1.3 - 1/3 of aluminum in density)
- Flexible and easy to be cut or trimmed (withstands repeated bending)
- Low Thermal Resistance

Application Examples:

- Notebook PCs, DVDs, DVCs, Mobile Phones
- Semiconductor Manufacturing Equipment (Sputtering, Dry Etching, Steppers)
- Optical Communications Equipment

Characteristics	Specification		
Thickness	0.1±0.03mm	0.07±0.015mm	0.025±0.01mm
Density	0.85 g/cm ³	1.1 g/cm ³	2.1 g/cm ³
Thermal Conductivity (a-b plane)	600 - 800 W/(m.K)	750 - 950 W/(m.K)	1500 - 1700 W/(m.K)
Electrical Conductivity	10000 S/cm	10000 S/cm	20000 S/cm
Expansion Coefficient (a-b plane)	9.3 x 10 ⁻⁷ /K		
Expansion Coefficient (c axis)	3.2 x 10 ⁻⁵ /K		
Heat Resistance	400°C		
Bending (angle, R5)	10000 cycles		

Dimensions L x W (mm)	Digi-Key Part No.	Price Each	Panasonic Part No.
125 x 180	P11438-ND	75.85	EYG-S131810
125 x 90	P11439-ND	41.72	EYG-S091310
115 x 180	P13689-ND	51.82	EYG-S121807
115 x 180	P13691-ND	51.82	EYG-S121803
90 x 115	P12726-ND	26.46	EYG-S091210
90 x 115	P13688-ND	25.91	EYG-S091207
90 x 115	P13690-ND	25.91	EYG-S091203
60 x 90	P11440-ND	21.69	EYG-S060910
57 x 90	P12727-ND†	24.34	EYG-M060910SS
57 x 90	P12728-ND‡	14.46	EYG-A060910P
57 x 90	P12729-ND‡	14.46	EYG-A060910B

† With Silicon ‡ With Tape

ITW Chemtronics Heat Sink Grease



For fast heat transfer from components.

Features:

- Nonflammable
- Noncorrosive
- Silicon
- Will not dry out, harden or melt
- 5 oz. tube
- Meets MIL-C-47113
- Stable from: -40°F ~ 392°F (-40°C ~ 200°C)

Digi-Key Part No.	Price Each 1	25	100	ITW Chemtronics Part No.
CT40-5-ND	14.63	13.23	12.34	CT40-5

Free shipping on orders over £50! All prices are in British pound sterling and include duties.

uk.digikey.com — FREEPHONE: 0-800-587-0991 • 0-800-904-7786 — FREEFAX: 0-800-587-0992 • 0-800-904-7783

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