

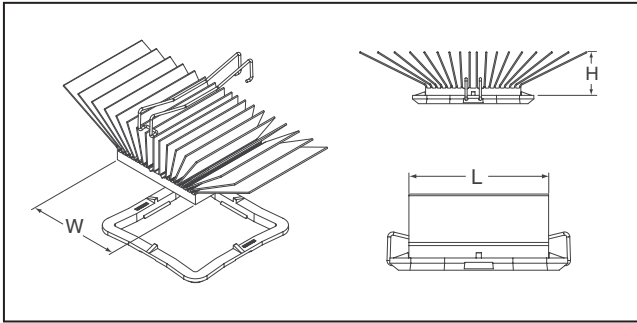
ATS maxiFLOW™ Heat Sinks have a low profile, spread fin array to maximize surface area for more effective convection (air) cooling. Their extruded aluminum fabrication minimizes thermal resistance and weight. Testing at an air flow rate of just 100 lfm shows that device junction temperatures (Tj) can be reduced by more than 40 percent below the temperatures achieved using other heat sinks.

The maxiGRIP™ Heat Sink Attachment System features a plastic frame clip that snaps securely around a component's perimeter. A stainless steel spring clip runs through the heat sink's fin field, fastens securely to the plastic frame and applies steady, even pressure to the component. The system allows easy sink detachment and reattachment with no damage to the component.

There is no over or under tightening of the sink to the processor. Component/heat sink assemblies using maxiGRIP meet Telcordia GR-63-Core Office Vibration; ETSI 300 019 Transportation Vibration; and MIL-STD-810 Shock Testing and Unpackaged Drop Testing standards.

BGA Cooling Solutions

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maxiFLOW Standard Height Heat Sink with maxiGRIP attachment. Designed for component heights from 3 to 4.5mm, Blue Anodized, Phase Change Material

Component height is defined as the distance from the top of the PCB to the top of the component.

Dimensions (mm)			Thermal Resistance		Digi-Key Part No.	Price Each		
L	W	H	Unducted Flow @ 200 LFM (1m/sec.)	Ducted Flow @ 200 LFM (1m/sec.)		1	10	100
17	17	7.5	18.2	13.9	ATS1000-ND†	7.38	5.62	4.82
19	19	7.5	16.5	12.9	ATS1001-ND†	7.45	5.67	4.86
21	21	7.5	11.9	8.8	ATS1002-ND†	7.53	5.73	4.92
23	23	7.5	10.9	8.3	ATS1003-ND†	7.60	5.79	4.96
25	25	7.5	8.6	6.1	ATS1004-ND†	7.68	5.85	5.01
27	27	7.5	7.9	5.8	ATS1005-ND†	7.75	5.90	5.06
29	29	7.5	7.4	5.6	ATS1006-ND†	7.83	5.96	5.11
30	30	7.5	7.1	5.4	ATS1007-ND†	7.91	6.03	5.17
31	31	7.5	6.9	5.3	ATS1008-ND†	7.98	6.08	5.21
32.5	32.5	7.5	5.9	4.2	ATS1009-ND†	8.07	6.14	5.26
33	33	7.5	5.8	4.2	ATS1010-ND†	8.10	6.17	5.29
35	35	7.5	5.3	3.4	ATS1011-ND†	8.15	6.20	5.32
37.5	37.5	7.5	4.9	3.3	ATS1012-ND†	8.23	6.27	5.37
40	40	7.5	4.5	3.2	ATS1013-ND†	8.31	6.33	5.43
42.5	42.5	7.5	4.3	3.0	ATS1014-ND†	8.22	6.32	5.30
45	45	7.5	4.0	2.6	ATS1015-ND†	8.30	6.38	5.35
17	17	12.5	11.1	9.0	ATS1016-ND†	7.98	6.08	5.21
19	19	12.5	10.2	8.4	ATS1017-ND†	8.07	6.14	5.26
21	21	12.5	7.2	5.7	ATS1018-ND†	8.15	6.20	5.32
23	23	12.5	6.7	5.4	ATS1019-ND†	8.23	6.27	5.37
25	25	12.5	5.2	4.0	ATS1020-ND†	8.31	6.33	5.43
27	27	12.5	4.8	3.8	ATS1021-ND†	8.22	6.32	5.30
29	29	12.5	4.5	3.7	ATS1022-ND†	8.30	6.38	5.35
30	30	12.5	4.4	3.6	ATS1023-ND†	8.38	6.45	5.41
31	31	12.5	4.3	3.5	ATS1024-ND†	8.47	6.51	5.46
32.5	32.5	12.5	3.5	2.8	ATS1025-ND†	8.56	6.59	5.52
33	33	12.5	3.5	2.7	ATS1026-ND†	8.60	6.61	5.54
35	35	12.5	3.0	2.2	ATS1027-ND†	8.64	6.65	5.57
37.5	37.5	12.5	2.8	2.1	ATS1028-ND†	8.73	6.71	5.63
40	40	12.5	2.6	2.0	ATS1029-ND†	8.81	6.77	5.68
42.5	42.5	12.5	2.4	2.0	ATS1030-ND†	8.90	6.85	5.74
45	45	12.5	2.1	1.6	ATS1031-ND†	8.99	6.91	5.79
17	17	17.5	8.3	6.8	ATS1032-ND†	8.48	6.52	5.47
19	19	17.5	7.7	6.4	ATS1033-ND†	8.57	6.60	5.53
21	21	17.5	5.4	4.3	ATS1034-ND†	8.66	6.66	5.58
23	23	17.5	5.1	4.1	ATS1035-ND†	8.74	6.72	5.64
25	25	17.5	3.9	3.0	ATS1036-ND†	8.84	6.80	5.70
27	27	17.5	3.7	2.9	ATS1037-ND†	8.92	6.86	5.75

Dimensions (mm)			Thermal Resistance		Digi-Key Part No.	Price Each		
L	W	H	Unducted Flow @ 200 LFM (1m/sec.)	Ducted Flow @ 200 LFM (1m/sec.)		1	10	100
29	29	17.5	3.5	2.8	ATS1038-ND†	9.02	6.94	5.82
30	30	17.5	3.4	2.7	ATS1039-ND†	9.10	7.00	5.87
31	31	17.5	3.3	2.7	ATS1040-ND†	9.20	7.08	5.93
32.5	32.5	17.5	2.7	2.1	ATS1041-ND†	9.28	7.14	5.98
33	33	17.5	2.7	2.1	ATS1042-ND†	9.33	7.18	6.02
35	35	17.5	2.3	1.7	ATS1043-ND†	9.38	7.21	6.05
37.5	37.5	17.5	2.1	1.6	ATS1044-ND†	9.47	7.29	6.11
40	40	17.5	2.0	1.6	ATS1045-ND†	9.58	7.36	6.17
42.5	42.5	17.5	1.9	1.5	ATS1046-ND†	9.66	7.43	6.23
45	45	17.5	1.6	1.3	ATS1047-ND†	9.75	7.50	6.29

maxiFLOW Low Profile Heat Sink with maxiGRIP attachment. Designed for component heights from 1.5 to 2.99mm, Black Anodized, Phase Change Material

Component height is defined as the distance from the top of the PCB to the top of the component.

Dimensions (mm)			Thermal Resistance		Digi-Key Part No.	Price Each		
L	W	H	Unducted Flow @ 200 LFM (1m/sec.)	Ducted Flow @ 200 LFM (1m/sec.)		1	10	100
17	17	9.5	18.5	12.6	ATS1048-ND†	7.58	5.77	4.95
19	19	9.5	16.7	11.6	ATS1049-ND†	7.70	5.86	5.03
21	21	9.5	12.0	8.0	ATS1050-ND†	7.81	5.95	5.10
23	23	9.5	11.0	7.5	ATS1051-ND†	7.94	6.04	5.18
25	25	9.5	8.6	5.5	ATS1052-ND†	8.05	6.13	5.25
27	27	9.5	8.0	5.3	ATS1053-ND†	8.18	6.23	5.34
29	29	9.5	7.4	5.0	ATS1054-ND†	8.30	6.32	5.42
30	30	9.5	7.2	4.9	ATS1055-ND†	8.20	6.31	5.29
31	31	9.5	7.0	4.8	ATS1056-ND†	8.27	6.36	5.33
32.5	32.5	9.5	6.0	3.8	ATS1057-ND†	8.35	6.42	5.38
33	33	9.5	5.9	3.8	ATS1058-ND†	8.38	6.45	5.41
35	35	9.5	5.3	3.1	ATS1059-ND†	8.41	6.47	5.43
37.5	37.5	9.5	4.9	3.0	ATS1060-ND†	8.49	6.54	5.48
40	40	9.5	4.5	2.8	ATS1061-ND†	8.57	6.60	5.53
42.5	42.5	9.5	4.3	2.7	ATS1062-ND†	8.64	6.65	5.57
45	45	9.5	4.0	2.3	ATS1063-ND†	8.73	6.71	5.63
17	17	14.5	10.9	8.5	ATS1064-ND†	8.22	6.26	5.36
19	19	14.5	10.1	7.9	ATS1065-ND†	8.33	6.34	5.44
21	21	14.5	7.2	5.4	ATS1066-ND†	8.28	6.37	5.34
23	23	14.5	6.6	5.1	ATS1067-ND†	8.41	6.47	5.43
25	25	14.5	5.1	3.8	ATS1068-ND†	8.55	6.57	5.51
27	27	14.5	4.8	3.6	ATS1069-ND†	8.68	6.67	5.59
29	29	14.5	4.5	3.4	ATS1070-ND†	8.81	6.77	5.68
30	30	14.5	4.3	3.4	ATS1071-ND†	8.89	6.84	5.73
31	31	14.5	4.2	3.3	ATS1072-ND†	8.95	6.89	5.77
32.5	32.5	14.5	3.5	2.6	ATS1073-ND†	9.03	6.95	5.83
33	33	14.5	3.4	2.6	ATS1074-ND†	9.08	6.99	5.86
35	35	14.5	2.9	2.1	ATS1075-ND†	9.12	7.01	5.88
37.5	37.5	14.5	2.7	2.0	ATS1076-ND†	9.20	7.08	5.93
40	40	14.5	2.5	1.9	ATS1077-ND†	9.28	7.14	5.98
42.5	42.5	14.5	2.4	1.8	ATS1078-ND†	9.38	7.21	6.05
45	45	14.5	2.1	1.5	ATS1079-ND†	9.46	7.28	6.10
17	17	19.5	8.1	6.5	ATS1080-ND†	8.73	6.71	5.63
19	19	19.5	7.5	6.1	ATS1081-ND†	8.86	6.81	5.71
21	21	19.5	5.3	4.2	ATS1082-ND†	8.99	6.91	5.79
23	23	19.5	5.0	4.0	ATS1083-ND†	9.13	7.03	5.89
25	25	19.5	3.8	2.9	ATS1084-ND†	9.26	7.13	5.97
27	27	19.5	3.6	2.8	ATS1085-ND†	9.41	7.24	6.07
29	29	19.5	3.4	2.7	ATS1086-ND†	9.55	7.35	6.16
30	30	19.5	3.3	2.6	ATS1087-ND†	9.64	7.41	6.22
31	31	19.5	3.2	2.6	ATS1088-ND†	9.72	7.48	6.27
32.5	32.5	19.5	2.7	2.0	ATS1089-ND†	9.60	7.55	6.33
33	33	19.5	2.6	2.0	ATS1090-ND†	9.63	7.58	6.35
35	35	19.5	2.2	1.6	ATS1091-ND†	9.68	7.62	6.38
37.5	37.5	19.5	2.1	1.6	ATS1092-ND†	9.76	7.68	6.44
40	40	19.5	2.0	1.5	ATS1093-ND†	9.85	7.75	6.50
42.5	42.5	19.5	1.9	1.5	ATS1094-ND†	9.95	7.83	6.56
45	45	19.5	1.6	1.2	ATS1095-ND†	10.03	7.89	6.62

Thermal Management Design Kit

The Thermal Management Design Kit contains maxiFLOW™ heat sinks and maxiGRIP™ sink attachment systems (1 each of 96 parts denoted).

† ATS1397-ND (ATS-TMDK-96)	631.62
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