



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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HIGH TEMP FAN HEAT SINKS - FHS-090 SERIES

High Operating Temperature Integrated Fan Heat Sinks

DESIGN FEATURES

- Industry-leading maximum operating temperature of 90°C
- Compatible with chipset footprints ranging from 21x21 mm to 45x45 mm
- Total heights from 16.1 mm for low profile applications to 44.6 mm for lowest thermal resistance
- Common 5VDC @ 0.5 A (max) USB 2.0 fan electrical specifications
- Forged and extruded versions available
- Choice of elliptical, round pin, and plate fin styles



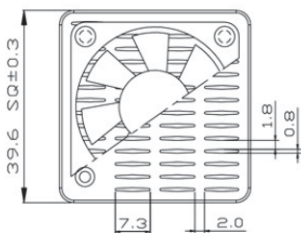
DESCRIPTION

The FHS-090 Series of integrated-fan heat sinks is uniquely designed to absorb and disperse heat away from high temperature devices while offering key features such as an operating temperature range of -10°C to 90°C, calculated MTTF @ 90°C: 86,858 hours (GEM, 90% confidence) and various package sizes to best fit the application. Thermal resistance values range from 4.07°C/W to as low as 1.24°C/W.

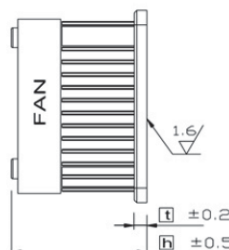
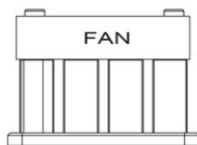
These new fansinks can maintain superior thermal dissipation for devices that emit high amount of heat. CTS' fansinks are available in a wide range of footprints and fin heights which make them suitable for many elevated temperature applications such as component testing, burn-in, high density servers, high-speed computing and video, and use in areas where the system airflow is constrained.

Elliptical Fins

Part Number	Length x Width x Height (mm)	Thermal Resistance (R _{TH})
FHE35-35-26	35 x 35 x 26.0	1.65
FHE35-35-30	35 x 35 x 29.6	1.54
FHE35-35-33	35 x 35 x 32.6	1.48
FHE35-35-35	35 x 35 x 34.6	1.46
FHE35-35-40	35 x 35 x 39.6	1.40
FHE35-35-45	35 x 35 x 44.6	1.36
FHE40-40-24	40 x 40 x 23.6	1.75
FHE40-40-27	40 x 40 x 26.6	1.54
FHE40-40-30	40 x 40 x 29.6	1.42
FHE40-40-33	40 x 40 x 32.6	1.34
FHE40-40-35	40 x 40 x 34.6	1.32
FHE40-40-40	40 x 40 x 39.6	1.27
FHE40-40-45	40 x 40 x 44.6	1.24
FHE43-43-22	42.5 x 42.5 x 21.6	1.65
FHE43-43-25	42.5 x 42.5 x 24.6	1.46
FHE43-43-28	42.5 x 42.5 x 27.6	1.33
FHE43-43-31	42.5 x 42.5 x 30.6	1.28
FHE43-43-33	42.5 x 42.5 x 32.6	1.26
FHE43-43-38	42.5 x 42.5 x 37.6	1.23
FHE43-43-43	42.5 x 42.5 x 42.6	1.19

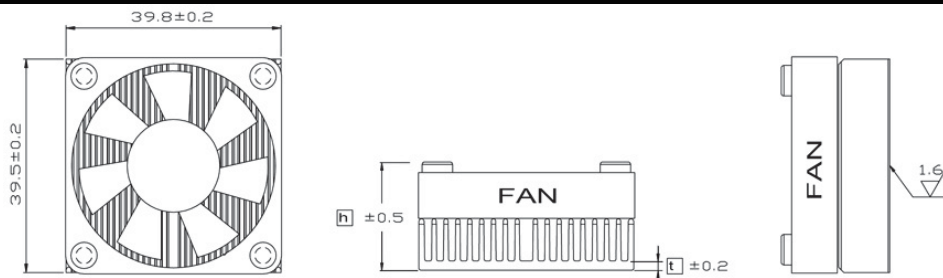


FHE40-40-xx



Line Fins

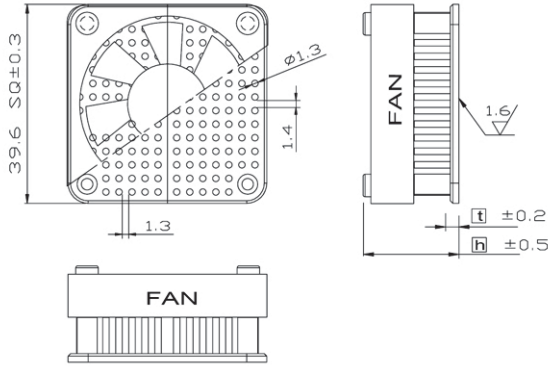
Part Number	Length x Width x Height (mm)	Thermal Resistance (R _{TH})
FHL21-21-18	21 x 21 x 18	4.07
FHL21-21-21	21 x 21 x 21	3.76
FHL21-21-24	21 x 21 x 24	3.72
FHL22-22-18	22 x 22 x 18	3.87
FHL22-22-21	22 x 22 x 21	3.42
FHL22-22-24	22 x 22 x 24	3.20
FHL23-23-18	23 x 23 x 18	3.87
FHL23-23-21	23 x 23 x 21	3.42
FHL23-23-24	23 x 23 x 24	3.20
FHL24-24-18	24 x 24 x 18	3.64
FHL24-24-21	24 x 24 x 21	3.25
FHL24-24-24	24 x 24 x 24	3.19
FHL25-25-18	25 x 25 x 18.1	3.82
FHL25-25-21	25 x 25 x 21.1	3.50
FHL25-25-24	25 x 25 x 24.1	3.16
FHL27-27-18	27 x 27 x 18.1	3.10
FHL27-27-21	27 x 27 x 21.1	3.07
FHL27-27-24	27 x 27 x 24.1	2.89
FHL29-29-18	29 x 29 x 18.1	3.36
FHL29-29-21	29 x 29 x 21.1	3.31
FHL29-29-24	29 x 29 x 24.1	2.91
FHL31-31-17	31 x 31 x 17.0	3.01
FHL31-31-21	31 x 31 x 21.1	2.86
FHL31-31-24	31 x 31 x 24.1	2.69
FHL33-33-18	33 x 33 x 18.1	3.11
FHL33-33-21	33 x 33 x 21.1	2.80
FHL33-33-24	33 x 33 x 24.1	2.67
FHL34-34-18	34 x 34 x 18.1	2.78
FHL34-34-21	34 x 34 x 21.1	2.58
FHL34-34-24	34 x 34 x 24.1	2.56
FHL35-35-18	35 x 35 x 18.1	2.76
FHL35-35-21	35 x 35 x 21.1	2.56
FHL35-35-24	35 x 35 x 24.1	2.52
FHL38-38-18	37.5 x 37.5 x 18.1	2.97
FHL38-38-21	37.5 x 37.5 x 21.1	2.74
FHL38-38-24	37.5 x 37.5 x 24.1	2.53
FHL40-40-16	40 x 40 x 16.1	2.74
FHL40-40-20	40 x 40 x 20.1	2.65
FHL40-40-23	40 x 40 x 23.1	2.53
FHL43-43-17	42.5 x 42.5 x 17.2	3.16
FHL43-43-20	42.5 x 42.5 x 20.1	2.93
FHL43-43-23	42.5 x 42.5 x 23.1	2.79
FHL45-45-16	45 x 45 x 16.1	3.10
FHL45-45-20	45 x 45 x 20.1	2.90
FHL45-45-23	45 x 45 x 23.1	2.75



FHL40-40-xx

Pin Fins

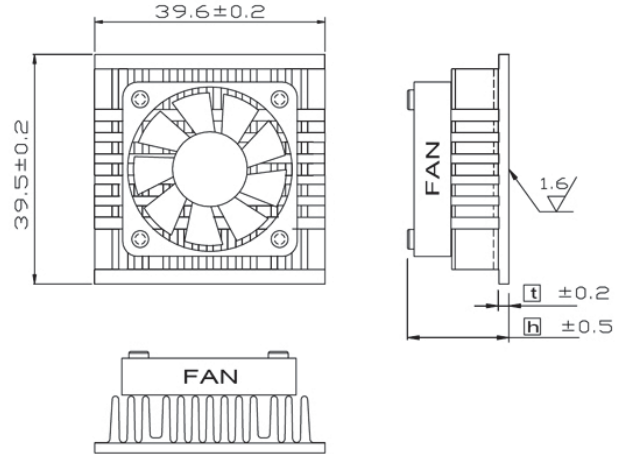
Part Number	Length x Width x Height (mm)	Thermal Resistance (R _{TH})
FHP27-27-20	27 x 27 x 20.0	3.35
FHP31-31-21	31 x 31 x 20.9	2.98
FHP35-35-21	35 x 35 x 20.9	2.53
FHP40-40-21	40 x 40 x 20.9	1.95



FHP40-40-xx

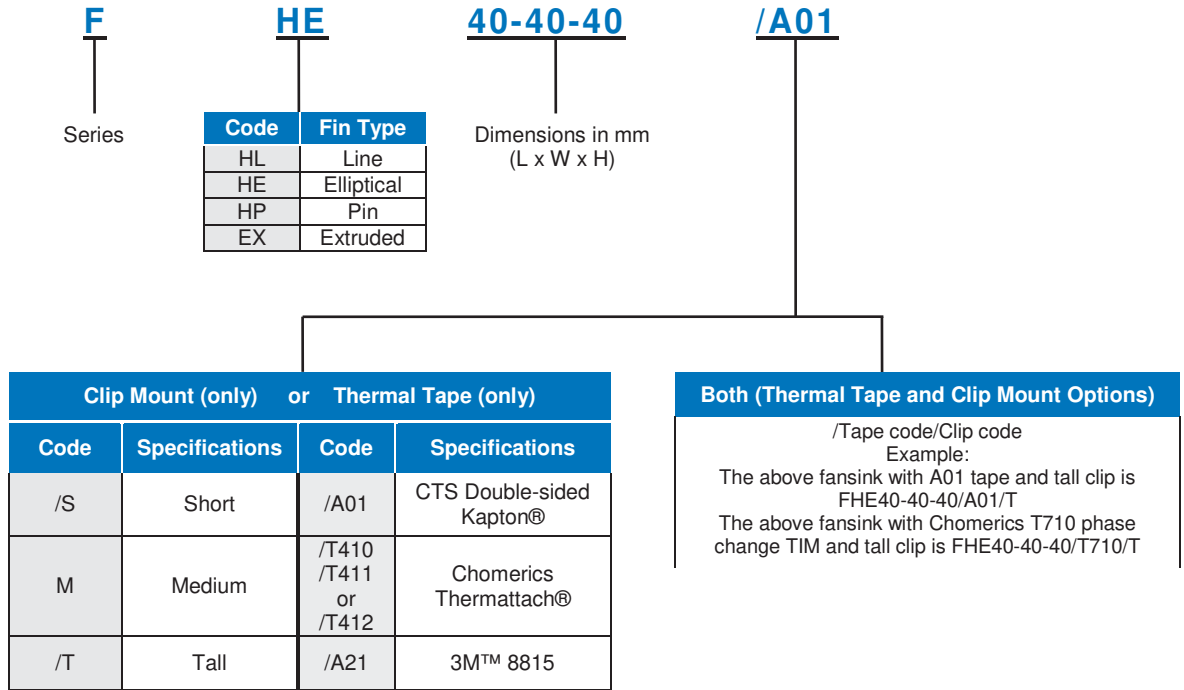
Extruded Fins

Part Number	Length x Width x Height (mm)	Thermal Resistance (R _{TH})
FEX35-35-21	35 x 35 x 21.0	1.92
FEX40-40-21	40 x 40 x 21.2	1.79



FEX40-40-20

ORDERING INFORMATION

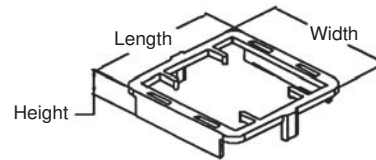


CLIP STYLES

MATERIAL: Nylon Plastic per UL94-V0



Component Size Length x Width (mm)	0.9mm +/- 0.3mm Short Height Color: Orange	1.7mm +/- 0.3mm Medium Height Color: Blue	3.3mm +/- 0.3mm Tall Height Color: Yellow	Clip Size Length x Width x Height (mm)
	Part Number			
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	47.2 x 47.7 x 9.1



TAPE STYLES

Thermal Tape	Supplier	Thickness (mm)	Thermal Impedance (°C-in. ² /W)	Dielectric Strength (V/mil)	Description
A01	CTS	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 with 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 with titanium diboride on an expanded aluminum carrier
8815	3M	0.38	1.20	668	Double-sided acrylic adhesive loaded with ceramic particles

ORDERING INFORMATION

AER - 19-19-12 - CB - /A01

Part Number Series

Dimensions in mm (LxWxH)

Mounting Options
(Clip and/or Adhesive)

Commercial Black Anodize

CLIP

Short "/S"
Medium "/M"
Tall "/T"

ADHESIVE

Double-sided Kapton® "/A01"
Chomerics Thermattach®
"/T410, T411, or T412"
3M™ "/8815"