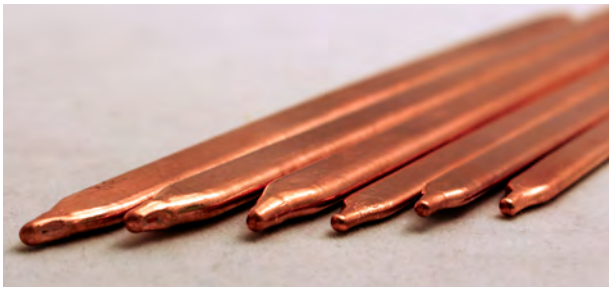
# Flat Heat Pipe



For Illustration Purposes ONLY.

## ATS Part#: ATS-HP-F8L500S13W-435

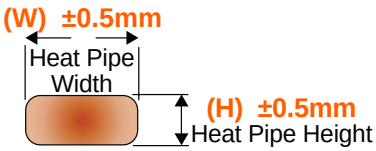
**Description:** Closed evaporator-condenser heat transfer systems. A heat pipe's wick structure and embedded liquid enables it to produce a very high heat flux transport capability, which can be 10-20 times higher than the equivalent diameter solid copper pipe. Flat heat pipes are easier to attach to heat dissipating components.

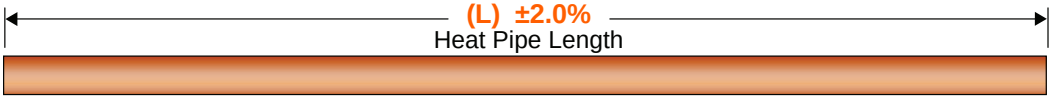
## Features & Benefits

» Tube material: copper
» Wick structures: grooved or sintered copper powder
» High thermal conductivity
» Light weight
» Fast thermal response

## Applications for Heat Pipes

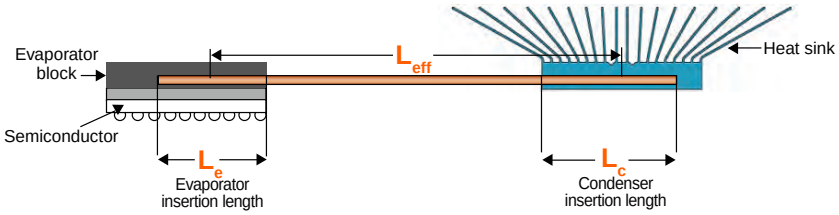
» Compact Electronics Enclosures
» Aerospace
» Medical
» Consumer Electronics
» HVAC




$$Q_{max} = \frac{Q_t}{L_{eff}} \times 1000$$

$$L_{eff} = L-(L_e + L_c)/2$$




## PRODUCT SPECIFICATIONS

L=Length (mm); W=Width (mm); H=Height (mm); WT=Wick Type (S=Sintered, G=Grooved); WF=Working Fluid; TR= Temperature Range (°C)

Product Detail

| Part Number | L | W | H | Wick Type | Working Fluid | Temp Range (°C) | QT (w.m) | $L_{eff}$ (mm) | $Q_{max}$ (W) | $L_{eff}$ (mm) | $Q_{max}$ (W) | $L_{eff}$ (mm) | $Q_{max}$ (W) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ATS-HP-F8L500S13W-435 | 500 | 10.31 | 4.7 | Sintered | Distilled $H_2O$ | 30-120 | 4.76 | 300 | 15.9 | 375 | 12.7 | 450 | 10.6 |

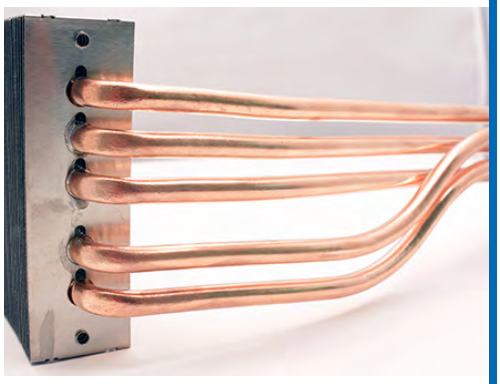
## SUGGESTED MINIMUM BEND RADIUS ON ATS HEAT PIPES

| Heat Pipe Diameter in mm | Minimum Bend Radius in mm |
|---|---|
| 4 | 12 |
| 5 | 15 |
| 6 | 18 |
| 7 | 21 |
| 8 | 24 |

## HEAT PIPE JOINING TECHNIQUES

1) For small batches/prototypes, heat pipes can be joined to heat sinks or other pieces with thermal epoxy.

2) For optimal results, heat pipes should be soldered using low temperature solder at temperatures above 139°C but no greater than 250°C.



For further technical information, please contact Advanced Thermal Solutions, Inc. by phone: 1-781-769-2800, email **ats-hq@qats.com** or visit www.qats.com.

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