

Flat Heat Pipe

ATS Part#: **ATS-HP-F5L250S13W-203**

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.



For Illustration Purposes ONLY.

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-F5L250S13W-203 | 250 | 6.95 | 2 | Sintered | Distilled H ₂ O | 30-120 | 2.38 | 150 | 15.9 | 187.5 | 12.7 | 225 | 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.