

Round Heat Pipe

ATS Part#: ATS-HP-D10L450S44W-173

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. Round heat pipes offer advantages for certain fin configurations at the condenser end.



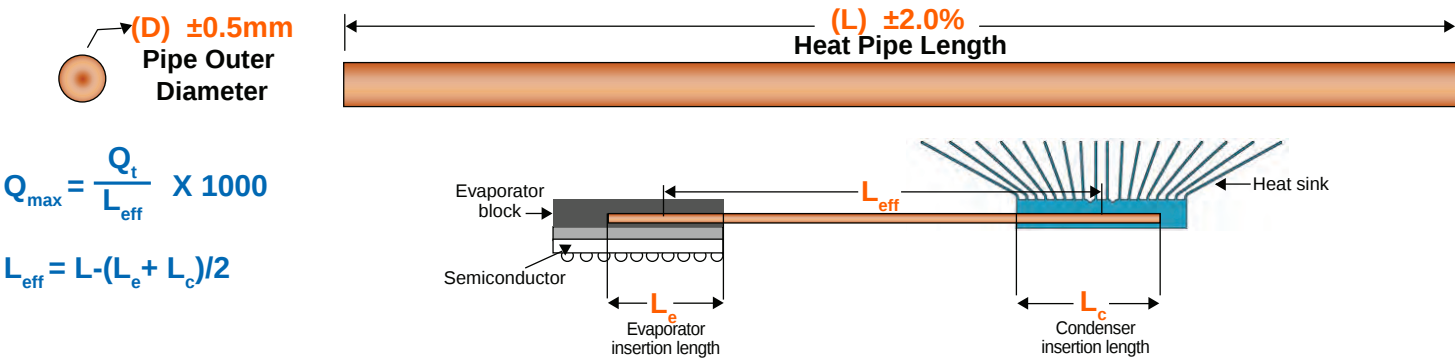
For Illustration Purposes ONLY.

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



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

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

PRODUCT SPECIFICATIONS

L=Length (mm); D=Diameter (mm); WT=Wick Type (S=Sintered, G=Grooved); WF=Working Fluid; TR=Temperature Range (°C)

Product Detail

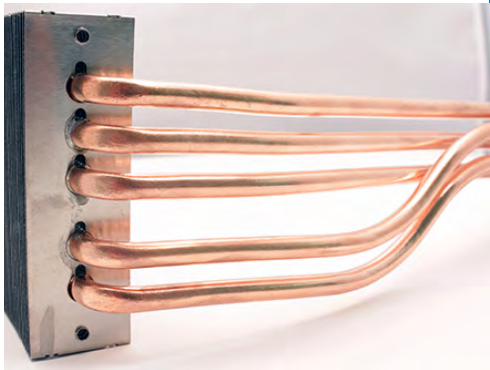
Part Number	L	D	Wick Type	Working Fluid	Temp Range (°C)	QT (w.m)	L _{eff} (mm)	Q _{max} (W)	L _{eff} (mm)	Q _{max} (W)	L _{eff} (mm)	Q _{max} (W)
ATS-HP-D10L450S44W-173	450	10	Sintered	Distilled H ₂ O	30-120	9.98	180	55.4	225	44.4	270	37.0

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.