

## Experimental Study of Heat Transfer and Pressure Drop in Serpentine Channel Water Cooler Heat Sink

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**Abstract :** With the high power density and high integration of electronic devices, their heat flux has been increasing rapidly. Therefore, an effective cooling technology is essential for the reliability and efficient operation of electronic devices. Liquid cooling is studied increasingly widely for its higher heat transfer efficiency. Serpentine channels are superior in the augmentation of single-phase convective heat transfer because of their better channel velocity distribution. In this paper, eight different frame sizes water-cooled serpentine channel heat sinks are designed to study the heat transfer and pressure drop characteristics. With water as the working fluid, experiment setup is established and the results showed the effect of different channel width, fin thickness and number of channels on thermal resistance and pressure drop.

**Keywords :** heat transfer, experiment, serpentine heat sink, pressure drop

**Conference Title :** ICFMHTT 2014 : International Conference on Fluid Mechanics, Heat Transfer and Thermodynamics

**Conference Location :** Toronto, Canada

**Conference Dates :** June 16-17, 2014