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(54) **MICROCHANNEL HEAT SINK FOR DATACENTER SOLID STATE DRIVES**

(71) Applicant: **WESTERN DIGITAL TECHNOLOGIES, INC.**, San Jose, CA (US)

(72) Inventors: **Puurnaraj Nadarajah**, Kedah (MY); **Mutharasu Devarajan**, Penang (MY)

(73) Assignee: **WESTERN DIGITAL TECHNOLOGIES, INC.**, San Jose, CA (US)

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(57) **ABSTRACT**

A heat sink for use in drawing heat away from electronic devices such as solid state drives (SSDs) includes microchannels formed along its length. The microchannels may have a triangular cross-section and may be formed by additive manufacturing. Two pairs of microchannels are provided, with coolant fluid running in a first direction through the first pair, and in a second opposite direction in the second pair to minimize thermal gradients along the length of the SSD and heat sink. The walls of the microchannel may be formed with a roughness that provides turbulent flow through the microchannels. The turbulent flow together with the large surface area of the three sides of the triangular microchannels increases the heat transfer coefficient of the microchannels, while the triangular shape and pumping fluid through a pair of microchannels reduces pressure drop along the microchannels.