각도 변화에 따른 판형 히트 스프레더의 열전달 특성 연구

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A Study on the Heat Transfer Characteristic of a Plate Heat Spreader according to Change of Angle

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Key Words: Heat spreader(히트 스프레더), change of angle (각도변화), amount of working fluid (작동유체량), thermal resistance(열저항).

Abstract : The present study analyzed heat transfer characteristicof a plate heat spreader according to change of angle and amount of working fluid. The heat spreader manufactured with copper and its size was 50×120×1.5mm. The angle was 0° (horizon), 30° , 60° , 90° (vertical) and amount of working fluid was 85%, 100% and 115% of standard amount. Thermal resistance was estimated at each case when input power was 10W, 20W, 30W, 40W, 50W. When angle was 0° and input power was 10W, thermal resistance was decreased as amount of working fluid was decreased. But when angle and amount was increased thermal resistance was decreased as amount of working fluid was increased.

모바일 전자장비 냉각을 위한 micro-CPL의 열성능 해석

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Analysis of the Thermal Performance of Micro-Capillary Pumped Loop for Mobile Electronic Device Cooling System

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Key Words: micro-Capillary Pumped Loop(마이크로 CPL), Mobile Electronic Device(모바일 전자장비), Cooling System(냉각 시스템)

Abstract : As more high power wide band gap devices are being utilized, the thermal management issues associated with these devices need to be resolved. High power small devices dissipate excessive heat that must be cooled, but traditional cooling methods are insufficient to provide such a cooling means. This paper will evaluate a micro-capillary pumped loop thermal management system that is incorporated into the shim of the device, taking advantage of phase-change to increase the thermal conductivity of the system. The results of the modeling of the thermal management system will be discussed