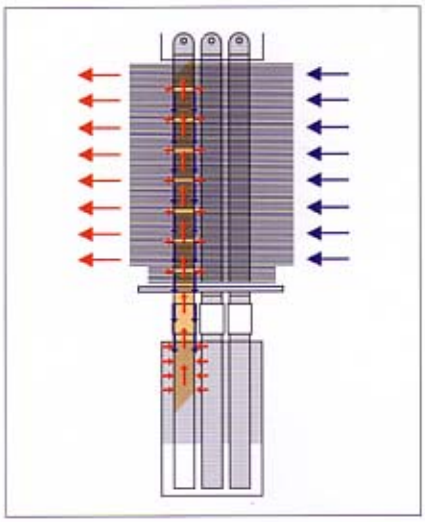
Heat Pipe Heat Sink for cooling power semiconductor modules

1. Main power device stack for the Korea high- speed railway using Heat Pipe Heat Sink
2. Main power conversion equipment for the Korean high- speed railway using Heat Pipe Heat Sink

The Heat Pipe Heat Sink (HPHS) which consists of a block, heat pipes and fins is a device designed for cooling power semiconductors such as GTO thyristor, IGCT, IGBT, etc. It is capable of transferring a large amount of heat from a power semiconductor mounted on the heat sink block to fins attached at the heat pipe condenser. The transferred heat is dissipated to the surrounding air by natural or forced convection. For cooling the power semiconductors (which are used in the converter and the inverter of the power control for electric railway and subway), they are placed on the surface of the heat sink blocks. Several HPHSs are utilized for cooling power semiconductors.

Advantages :

high cooling capacity. long term high reliability. electrical safety due to separation of heat source from radiating section. no power in operation. easy maintenance.



1.

2.