

Power Kicker for Railway / Power Conditioner

Below 10,000W semiconductor for Railway / Subway



Application:

Thermal control is indispensable for emission control semiconductor to perform its function. Especially for power module like Insulated Gate Bipolar Transistor (IGBT) which dissipates kilo watts of heat, a thermal solution must be designed in capable of cooling such amount of heat as well as being reliable in long term for stable energy supply. For power and design efficiency, power module itself is becoming smaller and compact while heat dissipation is no less. It is known that high heat density is a tough task for thermal solution in general.



Design Concept:

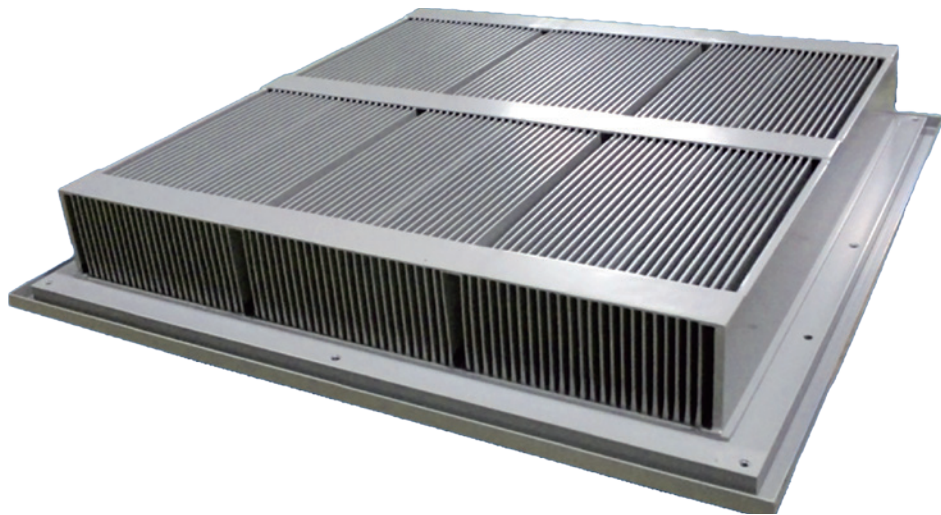
Furukawa Electric recommends power kicker (heat pipe heat stack solution) especially if there is limited space horizontally but more space available vertically. Heat pipe solution in general is also recommended to be used when heat generating element has un-even thermal extent which causes a "hot-spot". To prevent corrosion in out-door use, anticorrosion treatment such as nickel plating is highly recommended as an industry standard.

Material:

Aluminum Fin / Aluminum Base / Heat Pipes (Copper) / Ni Plating

Heat Pipe Embedded Blower Less Solution for High Speed Rail

10,000W to 20,000W semiconductor for Railway/Subway



Application:

Thermal control is indispensable for emission control semiconductor to perform its function. Especially for power module like Insulated Gate Bipolar Transistor (IGBT) which dissipates kilo watts of heat, a thermal solution must be designed in capable of cooling such amount of heat as well as being reliable in long term for stable energy supply.



Material:
Aluminum Extrusion/ Heat Pipes (Copper) / Ni Plating

Design Concept:

Furukawa Electric recommends heat pipe embedded blower less solution especially if there is limited space vertically but more space available horizontally. This specific solution has been applied for high-speed railway that use the wind flow during transportation instead of using fans for forced convection. Heat pipe solution in general is also recommended to be used when heat generating element has un-even thermal extent which causes a "hot-spot". To prevent corrosion in out-door use, anti-corrosion treatment such as nickel plating is highly recommended as an industry standard.

