Twin Side HTLS Connector With High Heat Dissipation Power For 1500 Amp Current Pass

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Abstract

In modern days one of the biggest challenges is to have a special connector for very high current power supply which shouldn't exceed the rating temperature of 90°C at full load. This main challenge it to design special connectors of aluminum (Al). In this study, a new approach is defined to design a unique connector made of Al which will not exceed the rating temperature and dissipate the heat very fast due to its well-organized fins and shape. The thermal analysis via COMSOL Multiphysics® gave a clear picture that the fins ratio for both the side should be maintained in a specific ration which gives the maximum heat dissipation power and the practical experiments showed that there are no large potential difference drop when the connectors are attached with any HTLS conductor.