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(54) **DOUBLE-SIDED COOLING COLD PLATES WITH OVERHANGING HEAT SINKS AND THROUGH BODY BUSBAR FOR HIGH-POWER DENSITY POWER ELECTRONICS**

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(57) **ABSTRACT**

A double-sided cold plate includes a manifold comprising openings extending from a first surface of the manifold through the manifold to a second surface of the manifold forming recesses within the manifold and an inlet channel and an outlet channel fluidly coupled to the recesses within the manifold, a plurality of first heat sinks coupled to the first surface of the manifold enclosing the openings on the first surface, and a plurality of second heat sinks positioned adjacent each other along a length of the manifold and coupled to the second surface of the manifold, enclosing the openings on the second surface, a width of the plurality of second heat sinks is greater than a width of the manifold thereby forming an overhanging portion on each lengthwise side of the manifold, the overhanging portion configured to mechanically support a plurality of electrical components positioned around a perimeter of the manifold.