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ABSTRACT

An electric vehicle thermal management system for compressing a low pressure refrigerant with a centrifugal compressor to generate a high pressure refrigerant, determining a battery cooling condition, routing one of the low pressure refrigerant and the high pressure refrigerant to the heat exchanger in response to the battery cooling condition, regulating a transfer of heat between the refrigerant loop and the battery cooling loop in response to a temperature of the battery coolant within the battery cooling loop and the battery cooling condition, and regulating the transfer of heat between the battery coolant loop and a cabin coolant loop in response to the HVAC setting and a cabin coolant temperature within the cabin coolant loop.

