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(54) **THERMOELECTRIC MODULE**

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(57) **ABSTRACT**

A thermoelectric module comprising:

a first electrically-insulating substrate having a first face and a second face opposite the first face, wherein a first plurality of electrical interconnects is disposed in a first pattern on the first face;

a second electrically-insulating substrate spaced from the first electrically-insulating substrate and having a first face facing the first face of the first electrically-insulating substrate, wherein a second plurality of electrical interconnects is disposed in a second pattern on the first face of the second electrically-insulating substrate;

a plurality of thermoelectric elements comprising n-type thermoelectric elements and p-type thermoelectric elements disposed between the first electrically-insulating substrate and the second electrically-insulating substrate, wherein each thermoelectric element extends from one of the first plurality of electrical interconnects to one of the second plurality of electrical interconnects, wherein the thermoelectric elements are arranged to form a first series-connected string of alternating n-type and p-type thermoelectric elements and a second series-connected string of alternating n-type and p-type thermoelectric elements and at least one of the n-type or p-type thermoelectric elements in the first series-connected string is electrically connected in parallel with one of the thermoelectric elements of the same type (n-type or p-type) in the second series-connected string; and

one or more regions of metallic material are disposed in a third pattern on the second face of the first electrically-insulating substrate.

