Proposed Amendments

WHAT IS CLAIMED IS:

~~1. An electrical circuit assembly, comprising:~~

an electrical circuit;

a heat spreader disposed in thermal contact with said electrical circuit for carrying heat away from said electrical circuit, said heat spreader having a coating of deposited material provided thereon for enhancing the adhesion capability thereof; and

a molded structure adhered to said coated heat spreader, wherein said coating comprises nickel aluminide.

2. The electrical circuit assembly accordingly to Claim 1, wherein said molded structure is molded onto said coated heat spreader.

3. The electrical circuit assembly according to Claim 2, wherein said coated heat spreader has an adhesive material applied thereto for adhering said heat spreader to said molded structure.

4. The electrical circuit assembly according to any preceding claim, wherein said coating has a thickness in a range of approximately 0.001 to 0.005 inches.

5. The electrical circuit assembly according to any preceding claim, wherein said coating has an adhesion strength of approximately 1000 psi.

6. The electrical circuit assembly according to any preceding claim, wherein said electrical circuit is a semiconductor integrated circuit chip, and wherein a chip support pad is mounted on said heat spreader, said chip being mounted on said chip support pad, said mounted casing being molded onto said chip support pad, and ~~said mounted casing being constructed from a plastic molding compound.~~

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~~7. The electrical circuit assembly according to any preceding claim, including~~ a plurality of leads connected to said electrical circuit, said leads having a coating of deposited material provided thereon for enhancing the adhesion capability thereof, said coated leads being adhesively attached to said coated heat spreader, said molded casing being molded onto said coated leads, said leads projecting exteriorly of said molded casing to provide external electrical access to said electrical circuit, and said heat spreader coating being electrically insulative such that said leads are electrically isolated from one another.

8. The electrical circuit assembly according to Claim 6, wherein said electrical circuit is a semiconductor integrated circuit chip and said chip being mounted directly on said heat spreader.

9. An electrical circuit according to any preceding claim, wherein the deposited material is flame plasma deposited material.

10. An electrical circuit according to any of claims 1 to 8, wherein the deposited ~~material is thermal spray deposited.~~

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TECHNIQUE FOR ENHANCING ADHESION CAPABILITY OF HEAT SPREADERS IN MOLDED PACKAGES

ABSTRACT OF THE DISCLOSURE

Adhesion between a heat spreader (15) and a substance (19) to be adhered to the heat spreader can be enhanced by using thermal spray deposition or flame plasma deposition to apply a coating (23) to the heat spreader. The substance to be adhered is applied to the coated heat spreader. The technique can be used in all electrical circuit assemblies.

Figure 1.