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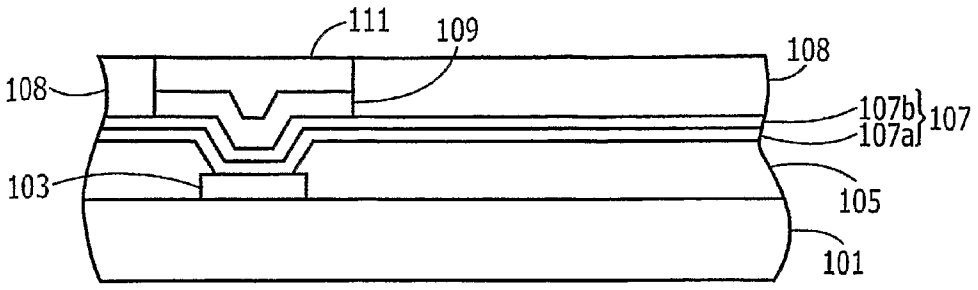
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(54) **Title:** METHODS OF FORMING LEAD FREE SOLDER BUMPS AND RELATED STRUCTURES



(57) **Abstract:** Methods of forming an electronic device may include forming an under bump seed metallurgy layer on an electronic substrate. A nickel layer may be formed on the under bump seed metallurgy layer so that the under bump seed metallurgy layer is between the nickel layer and the electronic substrate, and portions of the under bump seed metallurgy layer may be free of the nickel layer. In addition, a solder layer may be formed on the nickel layer so that the nickel layer is between the solder layer and the under bump seed metallurgy layer. In addition, a copper layer may be formed on the under bump seed metallurgy layer before forming the nickel layer with portions of the under bump seed metallurgy layer being free of the copper layer. Accordingly, the under bump seed metallurgy layer may be between the copper layer and the electronic substrate, and the copper layer may be between the under bump seed metallurgy layer and the nickel layer. Related structures are also discussed.

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