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Metallization For Polymer-Dielectric MultiChip Modules

Abstract

Multilayer circuit devices include a plurality of metallized patterns thereon, said patterns being separated by a polymeric dielectric film. The various metallized patterns are interconnected by means of microvias through the polymeric film or films. Each of the metallizations is a composite including in succession from the substrate or from the polymeric film, a layer of titanium (Ti), a layer of titanium and palladium alloy (Ti/Pd), a layer of copper (Cu), and a layer of titanium and palladium alloy (Ti/Pd). The Ti-Ti/Pd-Cu-Ti/Pd composite is hereinafter referred to as TCT. The adhesion between the polymeric film and the top Ti/Pd layer is better than that between the polymer and gold (Au) and comparable to that between the polymer and an adhesion promoted Au layer. Use of the TCT metallization also results in additional cost reduction due to the elimination of Ni and Au layers on top of the Cu layer.