

unacceptable variations of the dielectric constant throughout the bulk of the polymeric resin.

It is therefore an object of the present invention to provide an improved foamed dielectric polymer for use in electronic components.

Other objects and advantages will become apparent from the following disclosure.

Summary of the Invention

According to one aspect of the present invention there is disclosed an electrical device for distributing electrical current to electronic components comprising a dielectric foamed thermoset cross-linked polymer having an electrical circuit, the foamed polymer formed by the step of:

- (a) polymerizing a solution of cross-linkable precursor in a solvent;
- (b) gelling the polymer during phase separation of the solvent; and
- (c) removing the solvent from the polymer.

According to another aspect of the invention there is disclosed a process of making an electrical device having a first and second surface and comprising a foamed cross-linked polymer and a plurality of electrically conducting wires extending through the polymer from the first to the second surface of the electrical device, the process comprising the steps of:

- (a) disposing a solution of cross-linkable precursor in a solvent around a plurality of electrically conducting wires;
- (b) polymerizing the solution;
- (c) gelling the polymer during phase separation of the solvent; and
- (d) removing the solvent from the foamed polymer to form the electrical device.

What is claimed is:

1. An electrical device for distributing electrical current to electronic components comprising a dielectric foamed thermoset ~~cross-linked~~ polymer having an electrical circuit, the foamed polymer formed by the step of:

- (a) polymerizing a solution of crosslinkable precursor in a solvent;
- (b) gelling the polymer during phase separation of the solvent; and
- (c) removing the solvent from the polymer.

2. The device of claim 1 wherein the foamed polymer is crosslinked epoxy or crosslinked polycyanurate.

3. The device of claim 1 wherein the solvent is hexane, cyclohexane, or carbon dioxide.

4. The device of claim 1 wherein the solvent is removed by heating the crosslinked polymer.

5. The device of claim 1 wherein the circuit is a wire having a diameter less than 0.005 inches.