

High Temperature, High Dielectric Constant Polymer Nanocomposite Thin Films

Enabling next-generation polymer thin film capacitors

Benefits

- Increased capacitor design freedom
- Higher service temperature than state-of-the-art polymer film capacitors
- High dielectric constant
- Increased capacitor reliability
- Reduction in cooling energy costs

The Problem

From satellites to smartphones, the increasing computing capability of small devices demands smaller, more efficient power supplies. Resins or polymers with better heat resistance than existing polypropylene (PP) and polyethylene terephthalate (PET) are needed to increase capacitor design freedom and improve service temperature capability. Coping with problems inherent in power devices, such as limited space and the high costs associated with cooling, is imperative to device reliability, high performance, and reducing operating expenses.

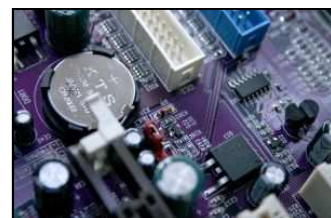
The Solution

Eltron has developed novel polymer nanocomposite thin film compositions and processes for their production. Eltron's thin films can operate at temperatures greater than 300°C. Nanoparticle additives increase the dielectric constant significantly beyond that of standard capacitor films. The approach is completely compatible with high-volume production methods.

Features and Benefits

The high temperature resistance of Eltron's thin films enables greater freedom in capacitor design. Their increased dielectric constant provides higher capacitance density. Initially developed for the satellite industry, Eltron's high performance polymers provide thermal control and antistatic discharge protection to sensitive electronic equipment.

Leveraging Eltron's proprietary technology, engineers in the telecommunications, aerospace, automotive and other industries will be able to pack more computing power into each application, powered by more efficient and reliable capacitors.



Eltron's nanocomposite thin films are based on a high performance polymer matrix that improves their tolerance to heat and increases dielectric capacity.