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(57) Abstract :

The system (100) architecture of the transient electrical device with an ion-exchanged glass interposer encompasses three fundamental components: the substrate (102), circuit (104), and interposer (106). The substrate serves as the base material on which the circuit is constructed, while the circuit is the electronic part responsible for executing designated functions. The innovation lies in the ion exchange treatment (108) applied to the interposer, which grants it a lower coefficient of thermal expansion than the substrate, reducing heat stress on the circuit and enhancing device reliability and lifespan. Additionally, the interposer's ion-exchanged glass treatment acts as a protective barrier against moisture and pollutants, ensuring the circuit's functionality in various environmental conditions. The modular design of the system simplifies manufacturing, lowers production costs, and allows for versatile applications across multiple industries.

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