THERMALLY STABLE DIELECTRIC COATINGS

ABSTRACT

This invention pertains to a method for producing thermally stable multi-layer coatings and the coatings produced therefrom. The multi-layer coating is comprised of a first coating produced from hydrogen silsesquioxane having a thickness of 1.25 to 2.25 μm and a second coating comprising silicon dioxide having a thickness of at least 100 nm. The method for producing the first coating comprises applying a fillerless hydrogen silsesquioxane resin composition onto a substrate and thereafter heating the hydrogen silsesquioxane resin at a temperature of 150°C. to 500°C. for a sufficient period of time to produce a crack-free coating having a thickness of 1.25 μm to 2.25 μm. The second coating is produced by depositing, preferably by PECVD, silicon dioxide over the first coating at a thickness of at least 100 nm.