Varistors are simple two terminal devices based primarily on metal oxide ceramic substrates and universally used for circuit protection from abrupt surges caused by thunderstorms or any other failures originating at the power supplies. These simple and yet very practical devices are ubiquitous and are present in almost all electronic and electrical circuits be they simple or complex. Varistors are the success story of oxide semiconductors and they are to ceramic technology as the diodes and transistors are to microelectronics. When the initial current-voltage characteristics are tuned by a biasing voltage or an electric field, the varistor itself becomes a signal amplifier while at the same time becoming the origin for the embedded voltage biased transistor (VBT) and electric field effect transistor (EFET) [1,2,3]. These transistors possess all the attributes of a traditional transistor based on classical semiconductors. However, when the varistors characteristics are modified by the application of an external magnetic field they become the basis for magnetic field effect transistors (HFET) and magnetic field sensors [4,5]. These devices are suitable for many general purpose applications. Their specialized applications could be at high temperature electronics, bioelectronics, space electronics and in well logging for exploration of energy resources. Being based on ceramic platforms these devices are expected to be rugged, robust, and inexpensive to produce on large scale.