

Title (en)

Wave propagation structures for the suppression of over-voltages and the absorption of transitory waves.

Title (de)

Wellenfortpflanzungsstrukturen für die Überspannungsunterdrückung und die Absorbierung von vorübergehenden Wellen.

Title (fr)

Structures à propagation d'onde pour la suppression de surtensions et l'absorption de transitoires.

Publication

EP 0264315 B1 19931201 (FR)

Application

EP 87402086 A 19870918

Priority

FR 8613093 A 19860918

Abstract (en)

[origin: US4841259A] A four-pole or three-pole structure adapted to propagate an electromagnetic wave, such as an electrical line or cable or electronic component, comprises a lossy non-linear dielectric material distributed in a wave propagation direction. This material has a non-linear conduction characteristic whereby it is substantially non-conductive at any rated applied voltage of the structure and substantially conductive at any abnormally high applied voltage. It consists of a polycrystalline material comprising thin interstitial layers procuring a tunneling or Schottky type effect in response to a high electric field resulting from such abnormally high applied voltages. It absorbs both voltage surges (varistor effect in the time domain) and high-speed transients (lowpass filter effect in the frequency domain). The structure can be used to provide protection against lightning strikes, nuclear electromagnetic pulses, electrostatic discharges and radio-frequency interference in general.

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