

Introduction and Applications for Ceramic Band Pass Filters

Features

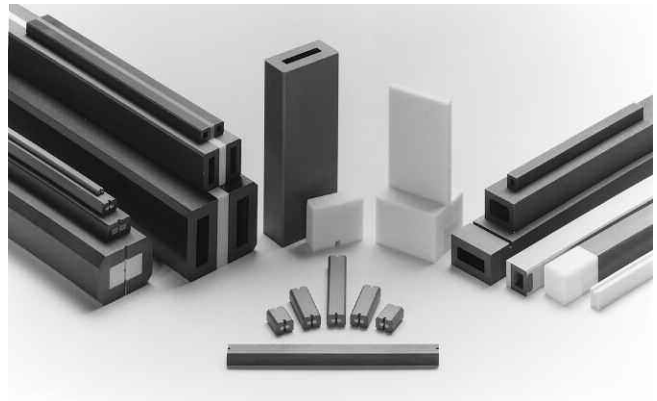
- Features
- Wide selection of $4\pi M_s$
- Low dielectric loss
- Square hysteresis loop properties
- Temperature stabilized
- Controlled coercive force
- Controlled DHk

Benefits

- Frequency design 1.5 GHz/35 GHz
- Low insertion loss
- Maximum phase shift
- Wide temperature
- Low switching energy
- High power handling

General Characteristics

- Wide selection of materials systems
- Diverse selection of material type
- Low magnetic and dielectric loss
- Controlled $4\pi M_s$ versus temperature
- Wide range of spin wave line width
- Square hysteresis loop properties



Intended Applications

Phase shifter materials are designed to meet the demands of latching type devices such as phase shifters, switches and latching circulators to optimize phase shift, insertion loss, temperature and size.

Availability

The selection of microwave magnetic material is a science and involves trade-offs of one or more performance parameters. High power handling may be obtained at the expense of low-level insertion loss. Loss may be improved if temperature performance is not critical. Frequency of operation may force a compromise. Trans-Tech offers a broad range of materials for the designer to choose from. The entire process is controlled from powder blending to final machining of phase shifter toroids to ensure reproducible properties. We have consistently shown this fact for 20 years in Aegis and other high volume, long term programs.

Quality Assurance

Throughout manufacturing, random lot samples are tested after key stages of production to guarantee conformance to all electrical and mechanical requirements. In addition, the finished ferrite phase shifter toroid is submitted to an especially rigorous series of quality assurance tests before delivery to the customer. At Trans-Tech, QA testing is the culmination of an overall process ensuring quality control. The final Quality Assurance tests measure the electrical properties of the toroid to assure reproducibility and performance. Using sample toroids from every batch of material, four principal electrical QA measurements are made:

- Complex dielectric constant and loss tangent
- Line width and gyromagnetic ratio
- Saturation magnetization
- Hysteresis loop properties

All finished pieces are 100% tested to verify precise dimensions. By rigorously adhering to quality control standards, Trans-Tech complies with all the specifications applicable to the prime and subcontract requirements for MIL-I-45208, and other Military Specifications.

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