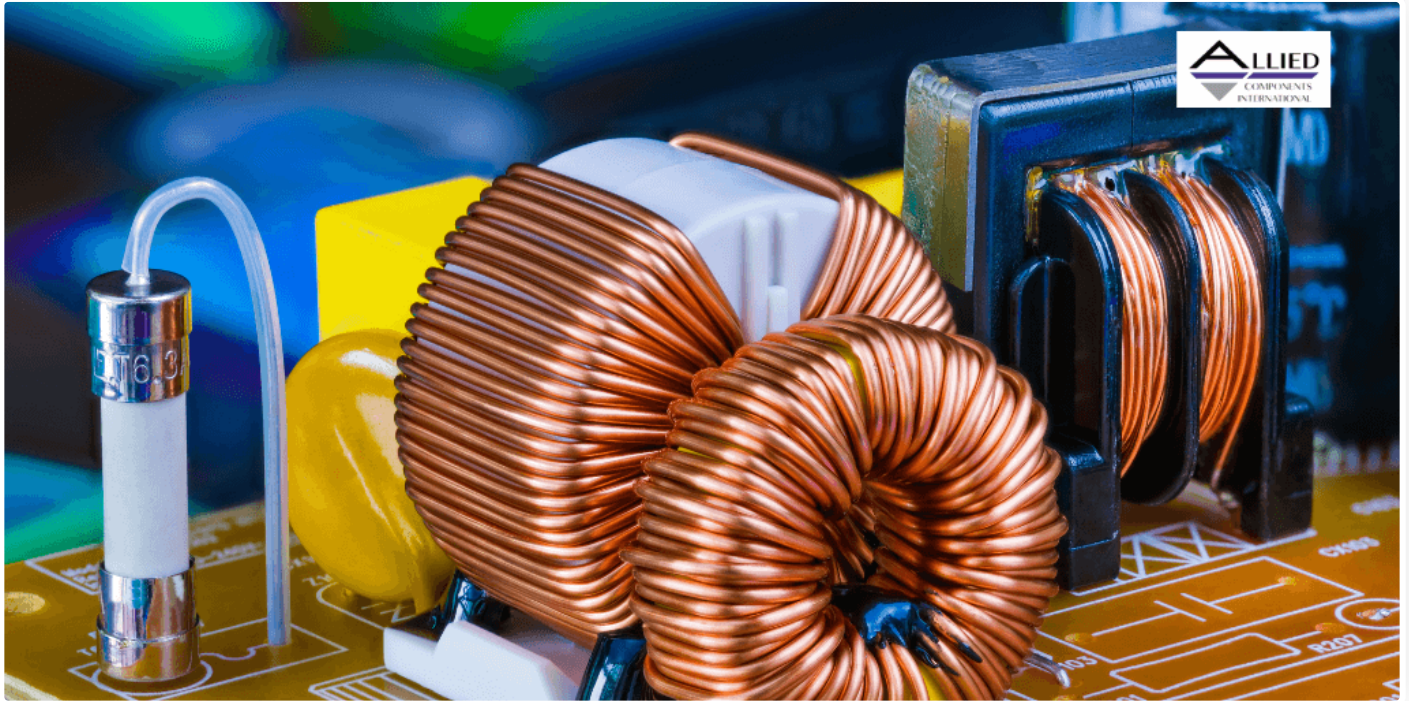


Ferrite Core Inductors: All You Need to Know

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Ferrite core inductors are one of three types of inductors commonly found on the market, besides air core and iron core inductors.

The purpose of an inductor is to store electrical energy in a magnetic field as currents flow through it.

The magnetic field is generated from currents flowing through a coil. Here are more essential details about ferrite core inductors.

Related: [Ferrite bead Vs. Inductor: All You Need to Know](#)

What Are Ferrite Core Inductors?

Inductor types are distinguished by their core material.

Ferrite is a term for iron in its solid form or a material that mainly contains iron

It's commercially made from a blend of ferric oxide and other trace metals. Since the material has low electrical conductivity, it keeps eddy currents low.

Ferrite core inductors are a cost-effective alternative to air core or iron core inductors, which can only handle limited frequencies.

The use of the magnetic material ferrite core allows for more frequencies with minimal eddy current losses.

Benefits of Ferrite Core Inductors

- High inductance with low loss
- High permeability with temperature stability

- Operates at medium and high frequency
- Air gap adjustment controls various parameters
- Provides higher inductance and complete screening
- Q factor can be adjusted for appropriate frequency

Why Do We Use Ferrite Core Inductors?

Ferrite core inductors are used for superior inductance and a more powerful magnetic field.

They help provide better performance for electronic circuits by reducing eddy current losses. Eddy currents are closed loops of electrical current resulting from changes in the magnetic field.

These planes of energy flow perpendicular to the magnetic field and can convert forms of energy into heat, which is unwanted and disruptive in electrical circuits.

Faraday's law says any magnetic change in a wire coil will induce voltage through the coil. That's how eddy currents are created.

They appear when a motor core rotates, inducing an electromagnetic field (EMF).

Characteristics of Ferrite Core Inductors

One of the main functions of ferrite core inductors is they convert electrical energy into magnetic energy.

The change in the magnetic field leads to opposing currents passing through the inductor. At higher frequencies, ferrite core inductors allow DC power to pass through while blocking AC power.

Also read: [5 Key Electronic Product Design Challenges That Need to be Addressed](#)

Applications of Ferrite Core Inductors

Industries that use ferrite core inductors include telecom, entertainment, and other fields of communication.

Ferrite core inductors are useful in a variety of scenarios that contribute to high-quality circuitry.

They can be used in power transformers, switching circuits, Pi filters, and rod antennas.

Contact us at [Allied Components](#) for more information on [ferrite core inductors](#).