



Magnetics modules and RJ45 Jacks for LAN applications

General

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General

EPCOS introduces a new range of magnetics modules and RJ45 Jacks with integrated magnetics for Local Area Networks (LAN). They are optimized for use in hubs, switches, and routers but also for use in PCs and modems.

Ethernet Protocol is the common basis for data communication in LANs. The physical layer of the Ethernet is standardized in IEEE 802.3. Depending on the technology, different transmission speeds can be distinguished: 10 Base-T with 10 Mbit/s, 100 Base-T with 100 Mbit/s and 1000 Base-T with 1 Gbit/s transmission speed. IEEE 802.3af describes transmission of power via the Ethernet port. This technology is called Power over Ethernet (PoE) and is necessary to implement applications like Voice over IP (VoIP) where the phone is powered via the Ethernet connection.

The transceiver chip side (PHY) and the medium side (connecting cable) must be galvanically isolated. Both EPCOS magnetic modules and EPCOS RJ45 Jacks provide minimum 1500 V dielectric isolation combined with excellent insertion and return loss as well as crosstalk and differential to common-mode rejection.

EPCOS magnetics modules and RJ45 Jacks support the standard temperature range from 0 °C to +70 °C and are also available with an extended temperature range from -40 °C to +85 °C for industrial applications. EPCOS RJ45 Jacks also provide excellent mechanical performance and electrical shielding. The characteristics insertion force, plug to jack retention force and durability are tested to ANSI/EIA-364 standards.

Electrical characteristics and circuits are given in the detailed specification. Additional modules and RJ45 Jacks are available on request.

Applications

- 10/100 Base-T
- 1000 Base-T
- Power over Ethernet

Features

- Single, dual and quad port solutions
- Standard temperature range from 0 °C to +70 °C
- Extended temperature range from -40 °C to +85 °C
- Fully compliant with IEEE 802.3
- Optimized for all major transceiver ICs
- Industry standard footprint
- RoHS-compatible
- Magnetics modules are fully compliant with IPC / JEDEC J-STD-020C

Additional features for RJ45 Jacks with integrated magnetics

- LEDs in different colours optional available
- High mechanical durability
- Excellent electrical shielding
- Connector dimensions comply with TIA-968 (FCC 68.5) dimension requirements