

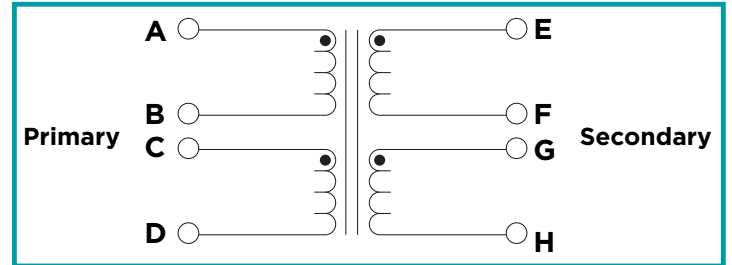
AUTOMOTIVE COMMUNICATION MAGNETICS ETHERNET TRANSFORMERS & MODULES FOR AUTOMOTIVE



AUTOMOTIVE COMMUNICATION MAGNETICS

ETHERNET TRANSFORMERS AND MODULES FOR AUTOMOTIVE

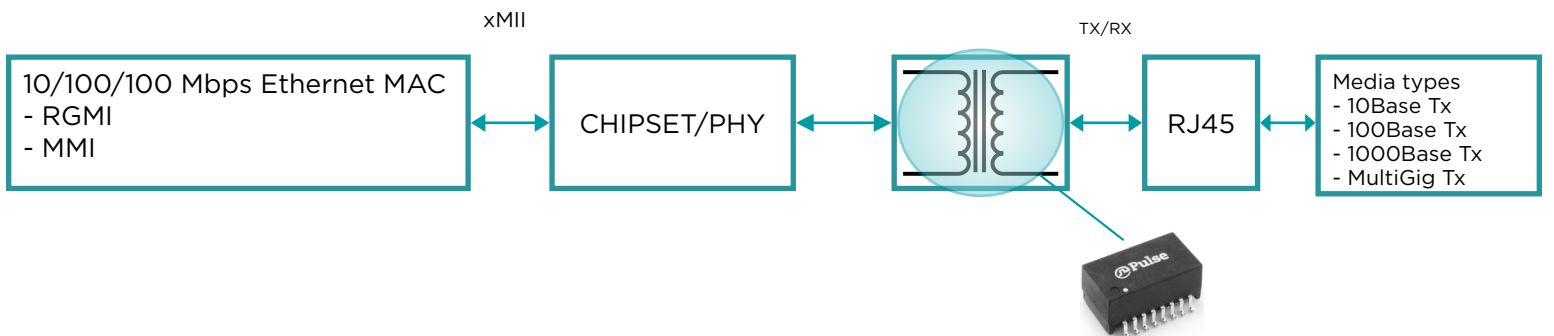
The Ethernet transformers and modules used in automotive applications serve a similar function as those used in industrial and datacom settings. They enable the transmission of a differential signal at data rates ranging from 100BaseT to 10GBaseT, by providing isolation between the device and the cable and filtering to reduce common mode noise. The transformer consists of four windings, two on the primary side for the digital interface and two on the secondary side connected to the twisted pair wires via the RJ45 connector.



To be suitable for use in modern smart vehicles, the design must be appropriate for the complex electronic systems and meet required safety standards. Pulse Ethernet transformers provide 1500Vrms (or 2250Vdc) isolation as specified in the IEEE802.xx standards, derived from IEC62368-1. This magnetic coupling insulation protects sensitive electronics from potential high voltage exposure.

Applications

- Infotainment Systems
- ADAS (Advanced Driver Assist System)
- Automotive Diagnostic
- Body electronics



KEY ELEMENTS ON ETHERNET TRANSFORMER FOR AUTOMOTIVE

Due to the high reliability and safety requirements of automotive applications, Pulse offers highly automated Ethernet transformers in a range of package sizes and with various safety isolation and EMI noise rejection options. To meet these needs, IEEE802.3 has created standards for Ethernet in the Automotive industry, with data rates ranging from 10 to 1000Mbps, as well as Multigig Ethernet.

Pulse ethernet transformers exhibit the following features and benefits:

- IEEE 802.3 compliant, supporting from 10BaseTx to Multi-Gig Ethernet
- Meet safety standards according to IEC62228-3
- HDBaseT Compliant
- Operational temperature ranges from -40C up to 125C
- AEC-Q200 qualified parts for automotive applications
- RoHS & REACH compliant
- PPAP available for production parts approval
- Available in single, dual, and quad packages
- PoE capable

APPROVED ETHERNET TRANSFORMERS AND MODULES

Pulse ethernet Transformers are designed to pass the requirements from 3rd Parties according to the high Automotive quality, reliability and safety standards. Due to the need of ethernet transformers in a very stringent environment, Pulse transformers are designed to meet the requirements from major PHY and OEM customers.



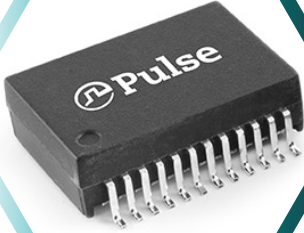


ETHERNET TRANSFORMER MODULES

Part Number	Number of Ports	Data Rate	PoE Option	HI-POT Isolation	Centre Tap	Fitted CMC	Package Size (mm) (L x W x H)	Operation Range
HM0068BNL	1	100BaseTx	Non-PoE	1500Vrms	Yes	Yes	12.7 x 9.65 x 3.05	-40 -105°C
HM1188NL	1	100BaseTx	Non-PoE	1500Vrms	Yes	Yes	12.7 x 7.11 x 5.97	-40 -105°C
HM1190NL	1	100BaseTx	Non-PoE	2500Vrms	Yes	Yes	12.7 x 9.10 x 5.99	-40 -125°C
HM1193NL	1	100BaseTx	Non-PoE	2500Vrms	Yes	No	12.7 x 7.11 x 5.97	-40 -125°C
HM1194NL	1	100BaseTx	Non-PoE	1500Vrms	Yes	Yes	12.7 x 7.11 x 5.97	-40 -125°C
HM1225NL	1	150 MOST	Non-PoE	1650Vrms	Yes	Yes	12.7 x 9.40 x 5.97	-40 - 95°C
HM1234FNL	4	100BaseTx	Non-PoE	1500Vrms	Yes	Yes	28.2 x 16.00 x 5.72	-40 -105°C
HM2104ZNL	2	150 MOST	Non-PoE	1500Vrms	Yes	Yes	14.8 x 14.7 x 4.88	-40 -125°C
HM2130NL	1	10GBaseTx	Non-PoE	500Vdc	Yes	Yes	20.0 x 9.2 x 7.90	-40 -125°C
HM5004ENL	1	1000BaseTx	Non-PoE	1500Vrms	Yes	Yes	17.65 x 16.00 x 5.72	-40 -105°C
HM5149NL	1	1000BaseTx	Non-PoE	1500Vrms	Yes	Yes	17.78 x 10.41 x 3.20	-40 -125°C
HM5165NL	1	1000BaseTx	4P PoE 30W	1500Vrms	Yes	Yes	17.65 x 16.00 x 5.72	-40 -125°C
HM5169NL	1	1000BaseTx	Non-PoE	1500Vrms	Yes	Yes	22.14 x 12.27 x 4.75	-40 -125°C
HM6098NL	1	1000BaseTx	4P PoE 120W	1500Vrms	Yes	Yes	18.16 x 16.00 x 6.60	-40 -105°C
HM7142NL	1	10GBaseTx	Non-PoE	1500Vrms	Yes	Yes	13.72 x 15.24 x 5.72	-40 -125°C

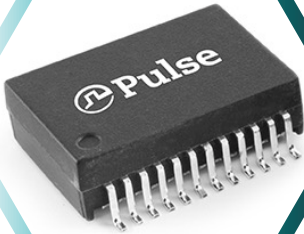
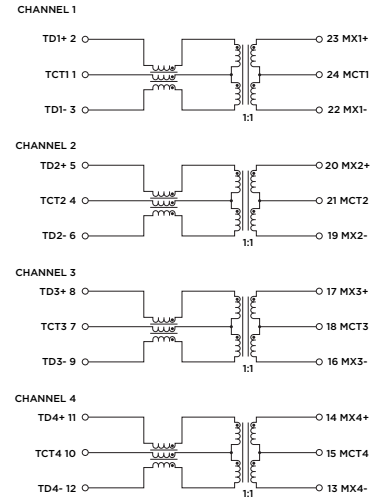
HIGH ISOLATION TRANSFORMERS

FEATURED PRODUCTS



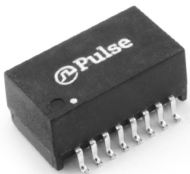
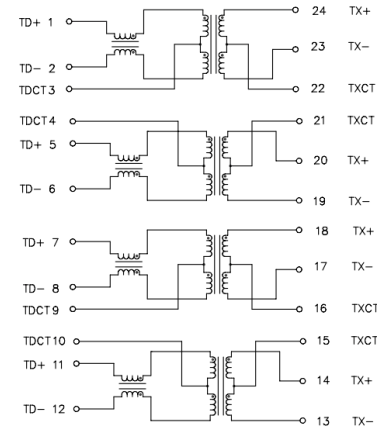
HM5165NL

- 1000BaseTx ethernet transformer
- PoE capable
- Isolation 1500VRMS



HM5169NL

- 1000BaseTx ethernet transformer
- Extended temperature range (up to 125C)
- Isolation 1500VRMS



HM1194NL

- 100BaseTx ethernet transformer
- Extended temperature range (up to 125C)
- Isolation 1500VAC

