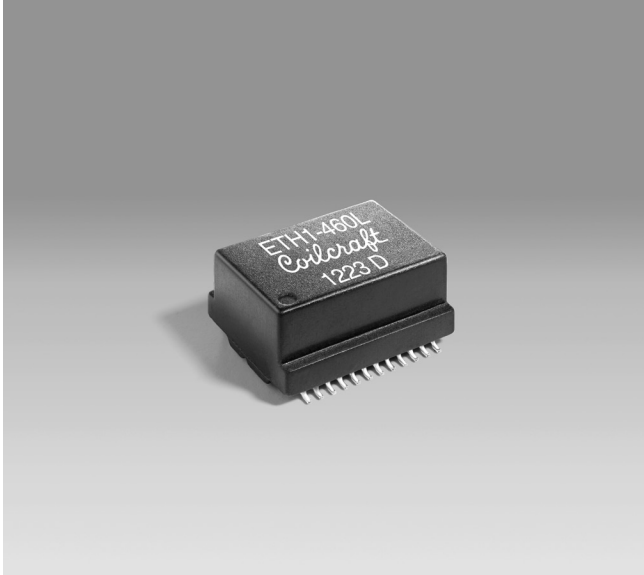




PoE Signal Path Transformer ^{60 W/120 W} signal path



Core material Ferrite

Terminations RoHS compliant tin-silver-copper over tin over nickel over phos bronze

Weight 3.6 g

Ambient temperature -40°C to $+85^{\circ}\text{C}$

Storage temperature Component: -40°C to $+85^{\circ}\text{C}$.
Tape and reel packaging: -40°C to $+80^{\circ}\text{C}$

Resistance to soldering heat Max three 40 second reflows at $+260^{\circ}\text{C}$, parts cooled to room temperature between cycles

Moisture Sensitivity Level (MSL) 1 (unlimited floor life at $<30^{\circ}\text{C}$ / 85% relative humidity)

Failures in Time (FIT) / Mean Time Between Failures (MTBF)
60 per billion hours / 16,666,667 hours, calculated per Telcordia SR-332

Packaging 250/13" reel; Plastic tape: 32 mm wide, 0.5 mm thick, 24 mm pocket spacing, 10.6 mm pocket depth

PCB washing Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787_PCB_Washing.pdf](#).

The **ETH1-460L**¹ is developed to meet the IEEE 802.3at-2009 and IEEE 802.3bt Type 4 standard for PoE+ and PoE++ applications. This module is designed for 4-pair cabling plants at 60 / 120 Watts. It exceeds the return loss requirements of Gbit Ethernet.

This single component solution may be used in place of two ETH1-230 parts, saving valuable board space.

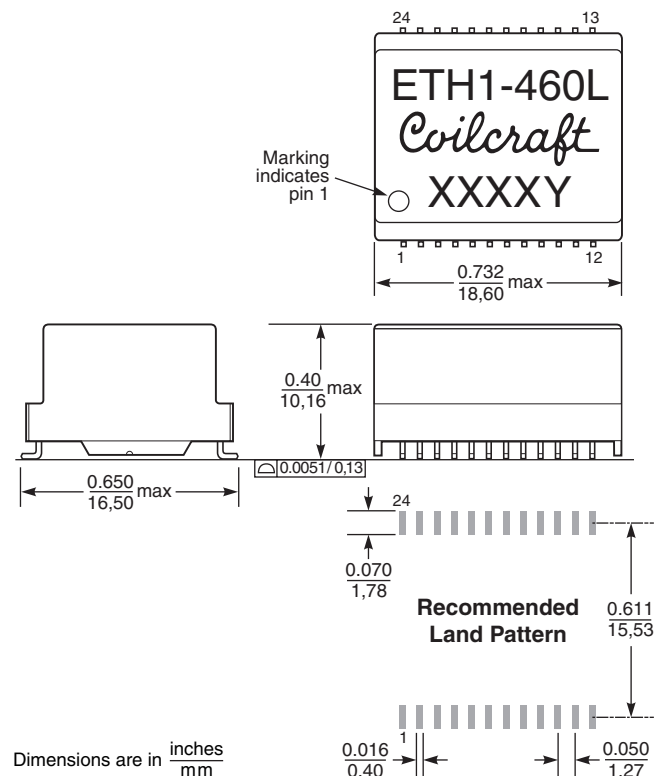
It has a minimum open-circuit inductance of 350 μH at an offset current of 35 mA at 25°C ambient temperature, and can handle 22.5 mA minimum dc offset at 85°C . Typical temperature rise from 25°C ambient is 7°C with 800 mA and 10°C with 1000 mA dc current applied to one center tap of each isolation transformer. Winding to winding isolation is 1500 Vrms. Ambient temperature range: -40°C to $+85^{\circ}\text{C}$ with 1 A current.

1. When ordering, please specify **packaging** code:

ETH1-460LD

Packaging: **D** = 13" machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked (250 parts per full reel).

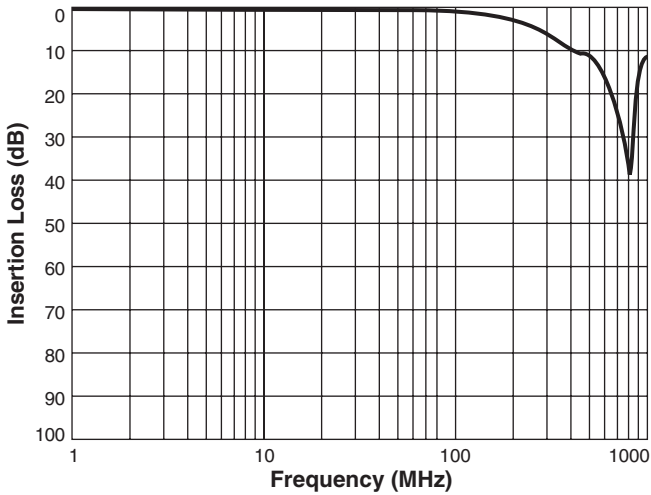
B = Less than full reel. In tape, but not machine ready. To have a leader and trailer added (\$25 charge), use code letter D instead.





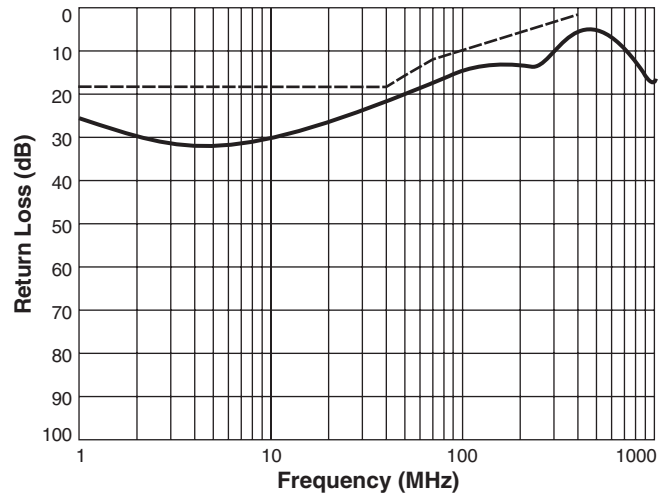
“PoE Plus” Magnetics – ETH1-460

Insertion Loss



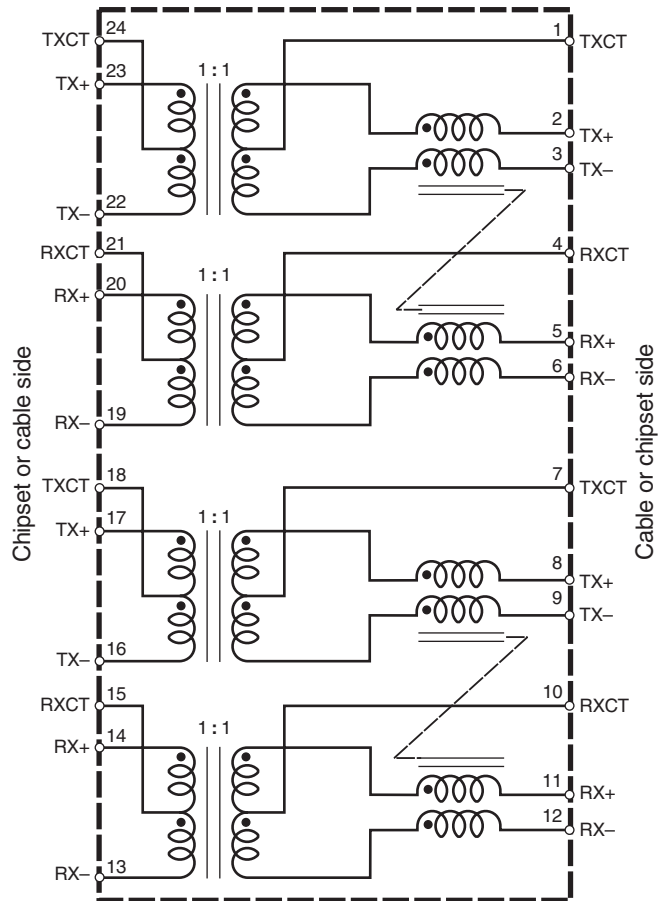
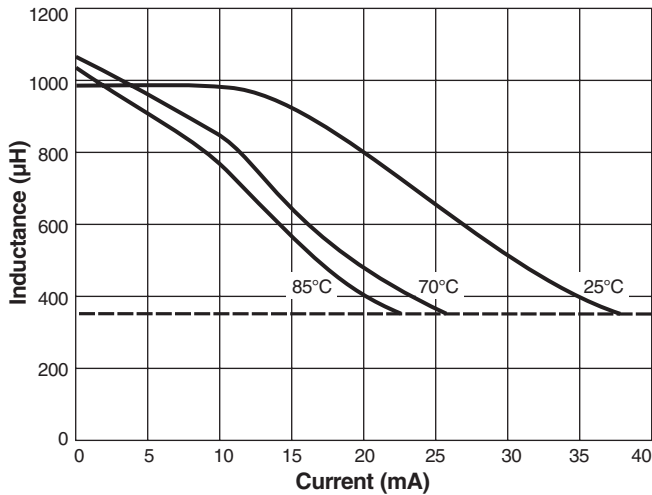
802.3af specification:
 1.0 min dB from 0.1 MHz to 100 MHz
 1.2 min dB at 125 MHz

Return Loss



802.3af specification:
 18 dB min from 1 MHz to 40 MHz
 16 dB min at 50 MHz
 12 dB min at 80 MHz
 10 dB min at 100 MHz

L vs Offset Current



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