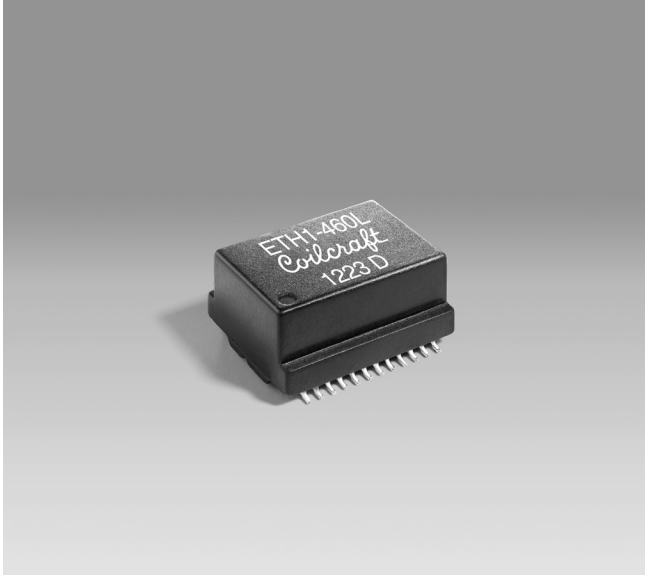


**NEW!**

# "PoE Plus" Magnetics – ETH1-460



**Core material** Ferrite

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

**Weight** 3.6 g

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

**Storage temperature** Component:  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ .  
Tape and reel packaging:  $-40^{\circ}\text{C}$  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** Only pure water or alcohol recommended

The **ETH1-460L<sub>1</sub>** is developed for high power PoE applications in support of the goals of the IEEE 802.3at-2009 standard. This module is designed for 4-pair cabling plants at 60 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.

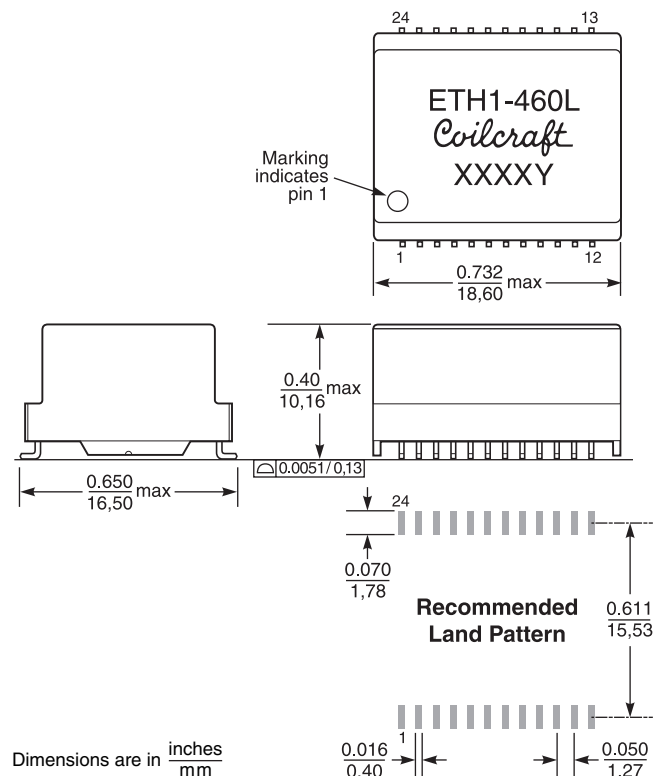
It has a minimum open-circuit inductance of  $350\ \mu\text{H}$  at an offset current of 35 mA at  $25^{\circ}\text{C}$  ambient temperature, and can handle 22.5 mA minimum dc offset at  $85^{\circ}\text{C}$ . Typical temperature rise from  $25^{\circ}\text{C}$  ambient is  $7^{\circ}\text{C}$  with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

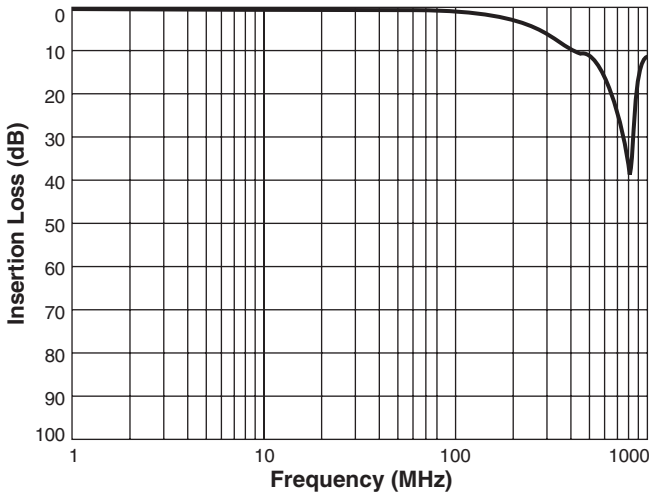




**NEW!**

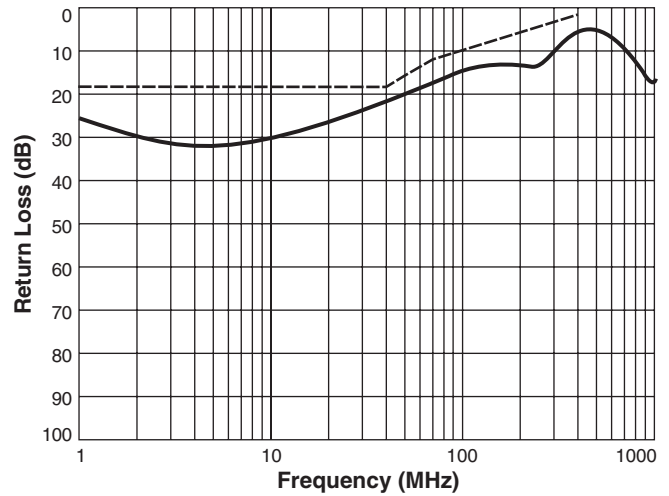
# “PoE Plus” Magnetics – ETH1-460

## Insertion Loss



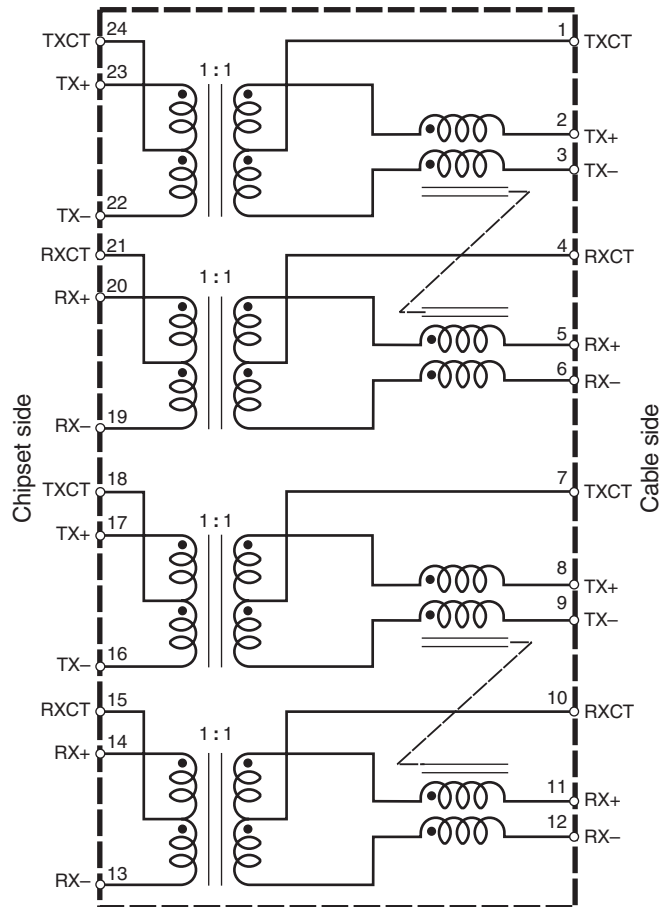
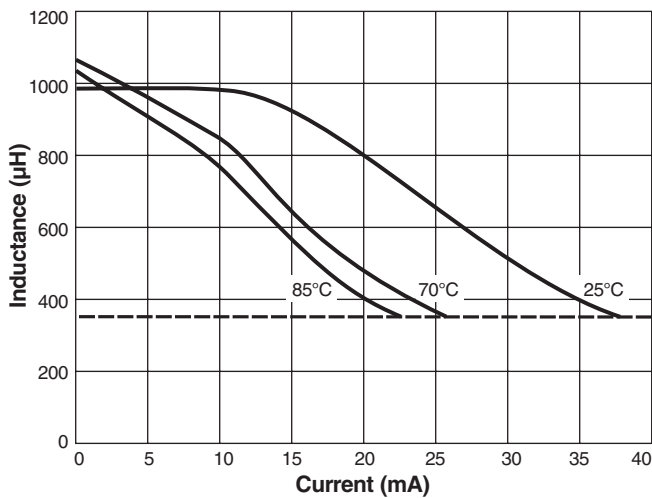
802.3af specification:  
 1.0 min dB from 0.1 MHz to 100 MHz  
 1.2 min dB at 125 MHz

## 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



**US** +1-847-639-6400 sales@coilcraft.com  
**UK** +44-1236-730595 sales@coilcraft-europe.com  
**Taiwan** +886-2-2264 3646 sales@coilcraft.com.tw  
**China** +86-21-6218 8074 sales@coilcraft.com.cn  
**Singapore** +65-6484 8412 sales@coilcraft.com.sg

Document 1008-2 Revised 10/09/12  
 © Coilcraft Inc. 2012  
 This product may not be used in medical or high risk applications without prior Coilcraft approval. Specification subject to change without notice. Please check out web site for latest information.