"PoE Plus" Magnetics

The **ETH1-230L_**[1] is developed for high power PoE applications in support of the goals of the IEEE 802.3at-2009 standard. This module is designed for 2-pair cabling plants at 30 Watts and two modules may be used for 4-pair cabling in 60 Watt applications. It exceeds the return loss requirements of Gbit Ethernet.

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°C with 1 A current.

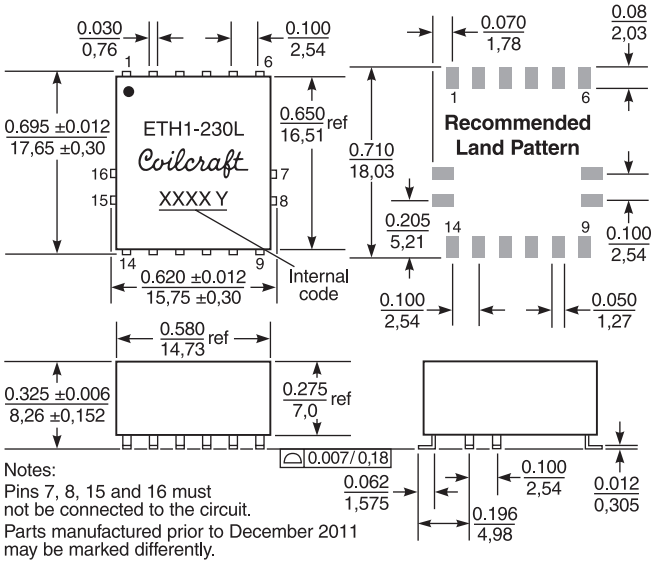
Request free evaluation samples by contacting Coilcraft or visiting **www.coilcraft.com.**

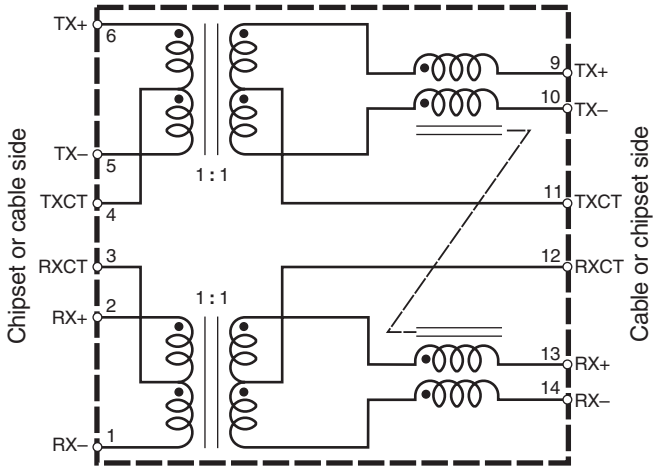
1. When ordering, please specify **packaging** code:

ETH1-230LD

Packaging: **D** = 13″ machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked (400 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.





Dimensions are in inches / mm

Core material Ferrite

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

Weight 3.0 g

Ambient temperature –40°C to +85°C

Storage temperature Component: –40°C to +85°C. Tape and reel packaging: –40°C to +80°C

Resistance to soldering heat Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

Moisture Sensitivity Level (MSL) 1 (unlimited floor life at <30°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 400/13″ reel; Plastic tape: 32 mm wide, 0.5 mm thick,

PCB washing Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See Doc787_PCB_Washing.pdf.

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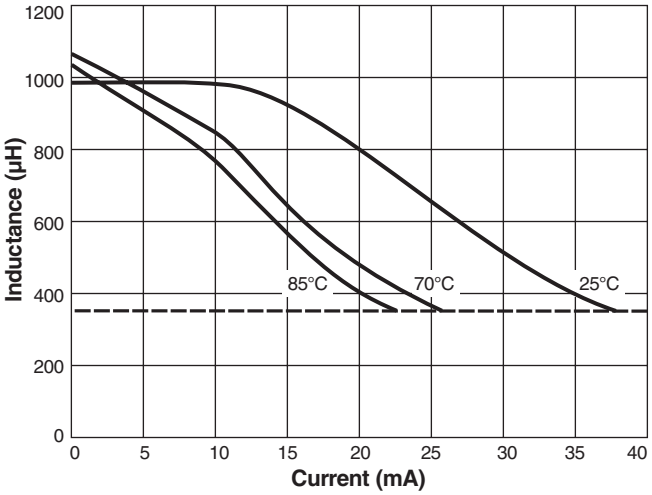
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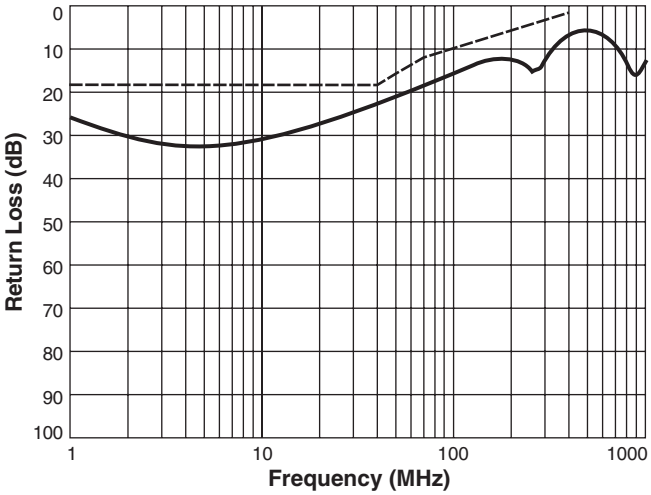
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"PoE Plus" Magnetics

L vs Offset Current

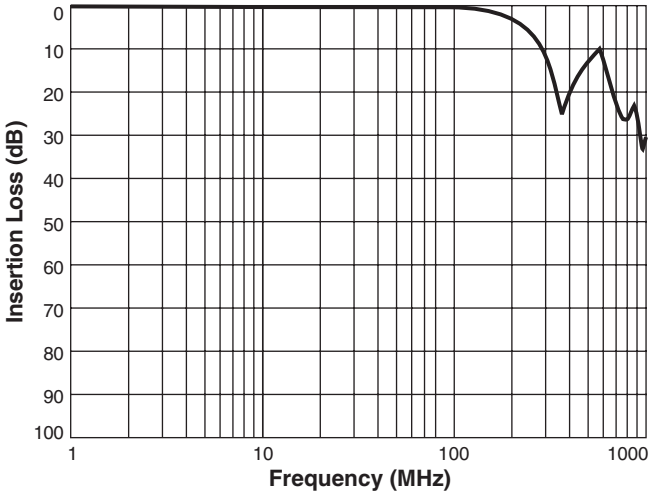


Return Loss



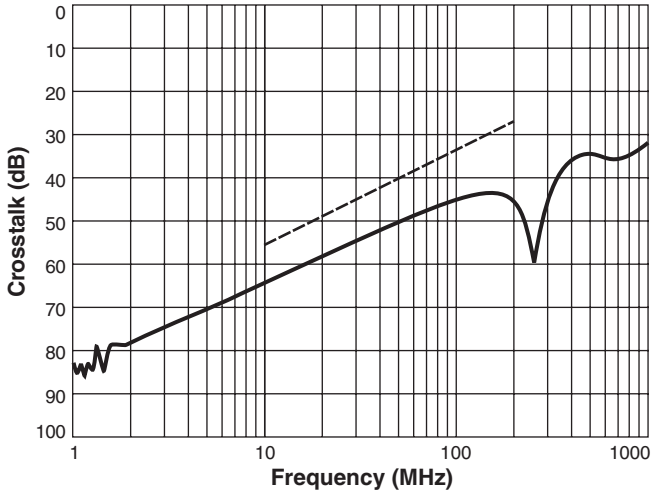
802.3af specification:
18 dB min from 1 MHz to 40 MHz
16 dB min at 50 MHz
12 dB min at 80 MHz
10 dB min at 100 MHz

Insertion Loss



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

Crosstalk



802.3af specification:
45 dB min at 30 MHz
40 dB min at 60 MHz
33 dB min at 100 MHz

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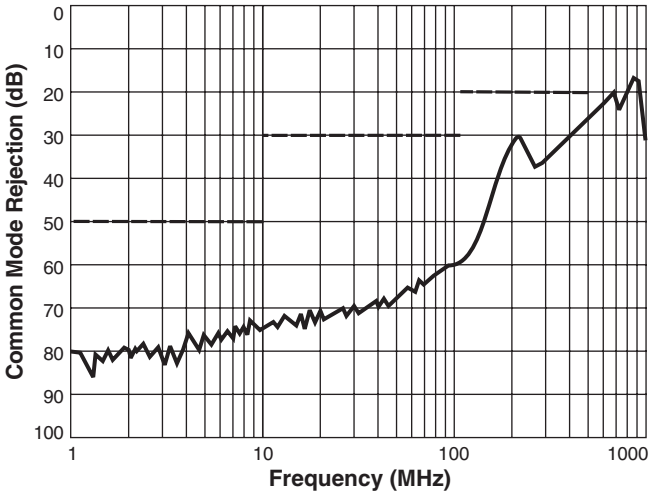
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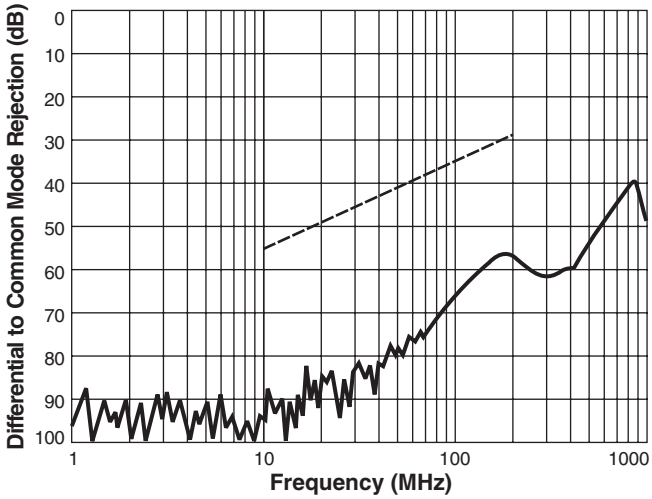
"PoE Plus" Magnetics

Common Mode Rejection



802.3af specification:
50 dB min from 1 MHz to 10 MHz
30 dB min from 10 MHz to 125 MHz
20 dB min from 125 MHz to 500 MHz

Differential to Common Mode Rejection



802.3af specification:
45 dB min at 30 MHz
40 dB min at 60 MHz
35 dB min at 100 MHz

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