PoE+/PoE++ Magnetics for 30 W/60 W signal path

The ETH1-230L is developed to meet the IEEE 802.3at-2009 and IEEE 802.3.bt Type 3 standard for PoE+ and PoE++ applications. This module is designed for 2-pair cabling plants at 30/60 Watts and two modules may be used for 4-pair cabling in 30/60 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.

   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.
“PoE Plus” Magnetics

L vs Offset Current

Return Loss

Insertion Loss

Crosstalk

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

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

802.3af specification:
- 45 dB min at 30 MHz
- 40 dB min at 60 MHz
- 33 dB min at 100 MHz
"PoE Plus" Magnetics

Common Mode Rejection

- 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

- 45 dB min at 30 MHz
- 40 dB min at 60 MHz
- 35 dB min at 100 MHz

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

Please check web site for latest information.