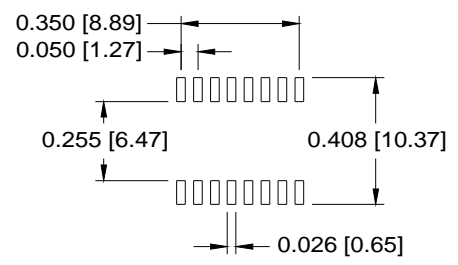
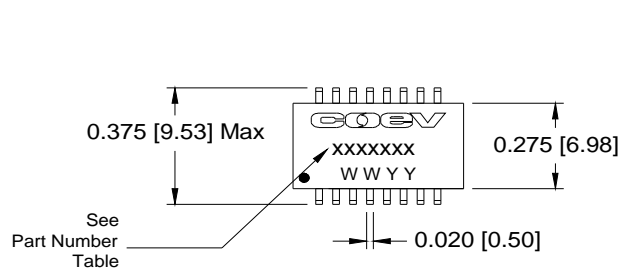


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|----------------------------|-----|--|
| MGH7L (HB7xx-LP) Series | REV |  |
| | R | |

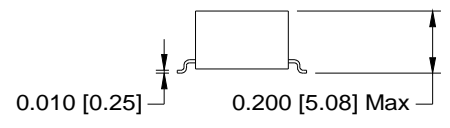
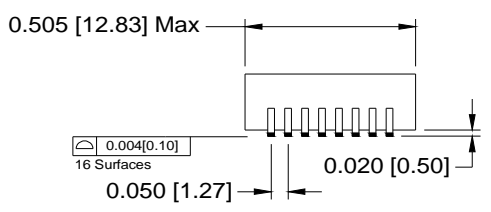
| | |
|------------------------|----------------------------|
| Product Description | Ethernet Magnetics Module |
| | Single Port, Surface Mount |

Standard Features

- Single channel interface for 10BASE-T and 10/100BASE-T Mbps Ethernet application
- Compliant with IEEE 802.3 and ANSI X3.263 Standards
- Surface mount package designed for reflow process (240°C peak)
- Dielectric Isolation is 1500Vrms minimum
- Tape & Reel Packaging standard
- Package molded using UL94-V0 rated material



Suggested Pad Layout



All dimensions are in inches [millimeters].
All dimensions are ±0.005 [0.127] unless otherwise noted.

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MGH7L (HB7xx-LP)
Series

REV

R



Product
Description

Ethernet Magnetics Module
Single Port, Surface Mount

10-100BASE-T Part Number Table

| Part Number | TX Turns Ratio (Chip:Cable) | RX Turns Ratio (Chip:Cable) | Schematic |
|-------------|--------------------------------|--------------------------------|-----------|
| MGH7L-00003 | 1:1 | 1:1 | R |
| HB710-LP | 1:1 | 1:1 | C |
| HB721-LP | 2:1 | 1:1 | A |
| HB721-1-LP | 2:1 | 1:1 | B |
| HB723-LP | 1:1.41 | 1:1 | D |
| HB723-1-LP | 1:1.41 | 1:1 | E |
| HB726-LP | 1:1 | 1:1 | A |
| HB726-1-LP | 1:1 | 1:1 | B |
| HB726-4-LP | 1:1 | 1:1 | F |
| HB726-5-LP | 1:1 | 1:1 | G |
| HB726-6-LP | 1:1 | 1:1 | H |
| HB733-LP | 1.25:1 | 1:1 | A |
| HB733-1-LP | 1.25:1 | 1:1 | B |
| HB739-LP | 1.41:1 | 1:1 | A |
| HB739-1-LP | 1.41:1 | 1:1 | B |
| HB781-LP | 1.41:1 | 1.41:1 | A |

10/100BASE-T Electrical Characterisitcs @ 25°C

Inductance: 350uH Min with 8mADC Bias, 0°C to +70°C
(each transformer measured on the cable side)

Dielectric Isolation: 1500Vrms Minimum

| Frequency | Insertion Loss (dB Max) | Return Loss (dB Min) (Note 1) | Crosstalk Attenuation (dB Min) | Transmit CMRR (dB Min) | Receive CMRR (dB Min) |
|------------------|----------------------------|-------------------------------------|--------------------------------------|------------------------------|-----------------------------|
| 0.1MHz - 1MHz | 1.0 | 18.0 | 43.0 | 42.0 | 42.0 |
| 1.1MHz - 15MHz | 0.5 | 18.0 | 43.0 | 42.0 | 42.0 |
| 15.1MHz - 30MHz | 0.8 | 18.0 | 43.0 | 42.0 | 42.0 |
| 30.1MHz - 60MHz | 0.8 | 12.0 @ 60Mhz | 43.0 | 42.0 | 42.0 |
| 60.1MHz - 80MHz | 1.1 | 12.0 @ 80MHz | 38.0 | 38.0 | 38.0 |
| 80.1MHz - 100MHz | 1.2 | 10.0 @ 100MHz | 38.0 | 35.0 | 35.0 |

Notes:

- 1) Minimum return loss is as follows with a circuit impedance of 100 Ohms +/- 15%:
 0.1Mhz - 29.9MHz = 18dB
 30Mhz - 60MHz = 18 - 20Log₁₀(f/30) dB where f is in MHz
 60Mhz - 80MHz = 12dB
 80.1Mhz - 100MHz = 10dB

MGH7L (HB7xx-LP)
Series

REV

R



Product
Description

Ethernet Magnetics Module
Single Port, Surface Mount

10BASE-T Part Number Table

| Part Number | TX Turns Ratio (Chip:Cable) | RX Turns Ratio (Chip:Cable) | OCL uH (Min) | LL uH (Max) | Cww pF (Max) | Temperature Range | Schematic |
|--------------|--------------------------------|--------------------------------|-----------------|----------------|-----------------|----------------------|-----------|
| HB719-LP | 1:1.41 | 1:1 | 140 | 0.40 | 15 | 0°C to +70°C | J |
| HB719-3-LP | 1:1.41 | 1:1 | 140 | 0.40 | 15 | 0°C to +70°C | L |
| HB720-LP | 1:2 | 1:1 | 140 | 0.30 | 12 | 0°C to +70°C | M |
| HB720-2-LP | 1:2 | 1:1 | 140 | 0.30 | 12 | 0°C to +70°C | A |
| HB724-LP | 1:2.5 | 1:1 | 140 | 0.40 | 15 | 0°C to +70°C | C |
| HB724-3-LP | 1:2.5 | 1:1 | 140 | 0.40 | 15 | 0°C to +70°C | N |
| HB724ET-LP | 1:2.5 | 1:1 | Note 3 | 0.40 | 15 | -40°C to +85°C | C |
| HB724ET-3-LP | 1:2.5 | 1:1 | Note 3 | 0.40 | 15 | -40°C to +85°C | N |
| HB725-LP | 1:1.41 | 1:1 | 140 | 0.40 | 12 | 0°C to +70°C | M |
| HB725-2-LP | 1:1.41 | 1:1 | 140 | 0.40 | 12 | 0°C to +70°C | A |
| HB728-LP | 1:2 | 1:1 | Note 4 | 0.30 | 12 | -40°C to +85°C | A |
| HB728-3-LP | 1:2 | 1:1 | Note 4 | 0.30 | 12 | -40°C to +85°C | M |
| HB729-LP | 1:1 | 1:1 | 140 | 0.40 | 12 | 0°C to +70°C | A |
| HB729-3-LP | 1:1 | 1:1 | 140 | 0.40 | 12 | 0°C to +70°C | M |
| HB730-LP | 1:2 | 1:1 | 140 | 0.40 | 12 | 0°C to +70°C | N |
| HB730-2-LP | 1:2 | 1:1 | 140 | 0.40 | 12 | 0°C to +70°C | C |
| HB731-LP | 1:1.41 | 1:1 | 140 | 0.40 | 12 | 0°C to +70°C | K |
| HB731-3-LP | 1:1.41 | 1:1 | 140 | 0.40 | 12 | 0°C to +70°C | P |
| HB734-LP | 1:2 | 1:1 | 140 | 0.40 | 12 | 0°C to +70°C | L |
| HB734-2-LP | 1:2 | 1:1 | 140 | 0.40 | 12 | 0°C to +70°C | J |
| HB735-LP | 2:1 | 1:1 | 140 | 0.70 | 12 | 0°C to +70°C | A |
| HB735-1-LP | 2:1 | 1:1 | 140 | 0.70 | 12 | 0°C to +70°C | K |
| HB735-3-LP | 2:1 | 1:1 | 140 | 0.70 | 12 | 0°C to +70°C | M |
| HB736-LP | 2:1 | 1:1 | 140 | 1.00 | 20 | 0°C to +70°C | C |
| HB736-3-LP | 2:1 | 1:1 | 140 | 1.00 | 20 | 0°C to +70°C | N |
| HB782-LP | 1:2.5 | 1:1 | Note 5 | 0.40 | 15 | 0°C to +70°C | J |
| HB782-3-LP | 1:2.5 | 1:1 | Note 5 | 0.40 | 15 | 0°C to +70°C | L |
| HB783-LP | 1:1 | 1:1 | 100 | 0.40 | 15 | 0°C to +70°C | J |
| MGH7L-00002 | 1:1 | 1:1 | 100 | 0.40 | 15 | 0°C to +70°C | L |

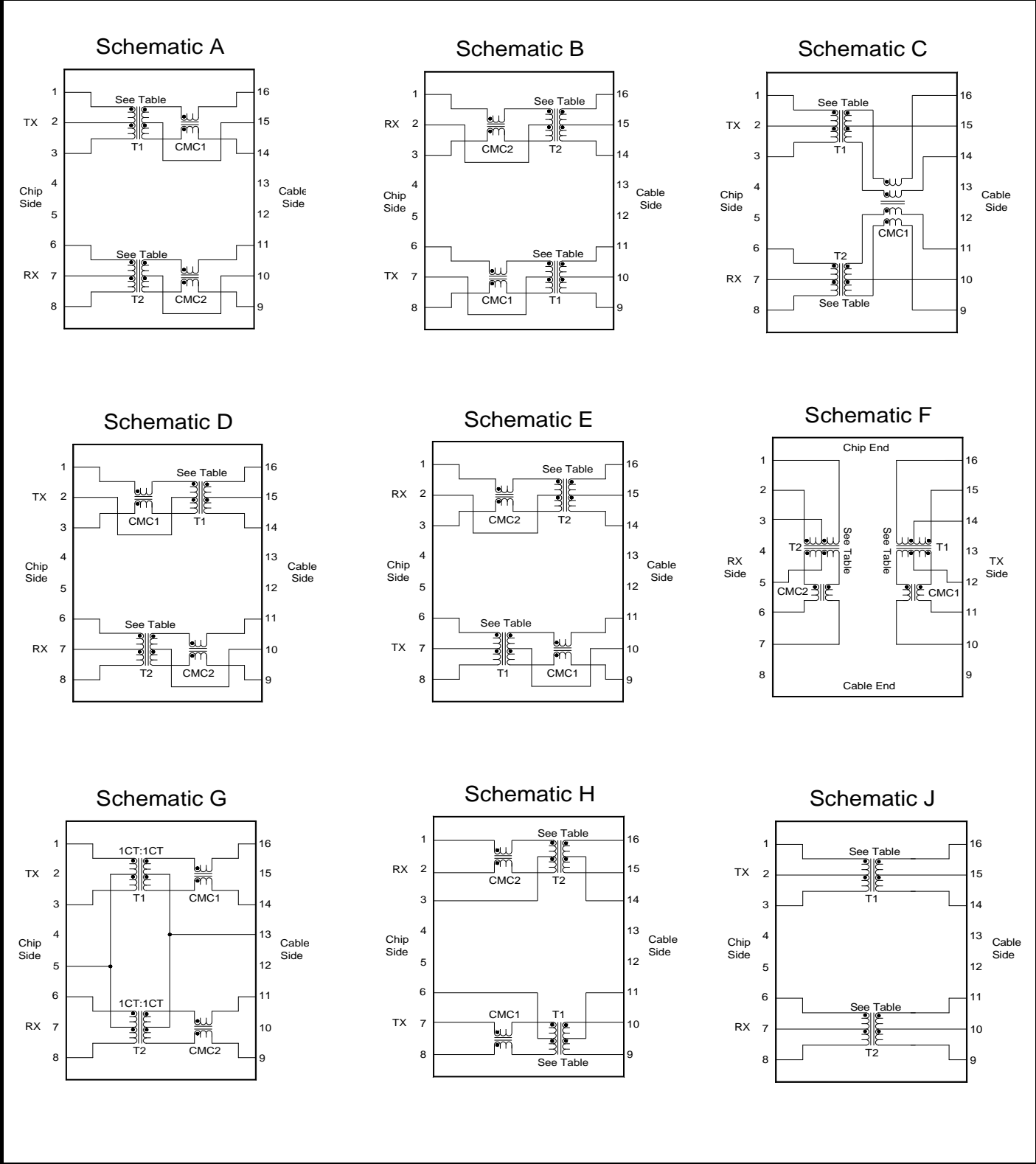
Notes:

- OCL, Cww and LL are measured at 0.10Vrms, 100kHz.
- TX OCL is 80uH Min @ 25°C, 35uH Min @ -40°C.
RX OCL is 389uH Min @ 25°C, 200uH Min @ -40°C.
- TX and RX OCL are 140uH Min @ 25°C, 60uH Min @ -40°C.
- TX OCL is 100uH Min
RX OCL is 200uH Min
- Dielectric isolation is 1500Vrms Min

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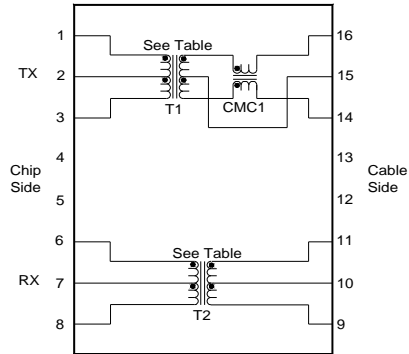
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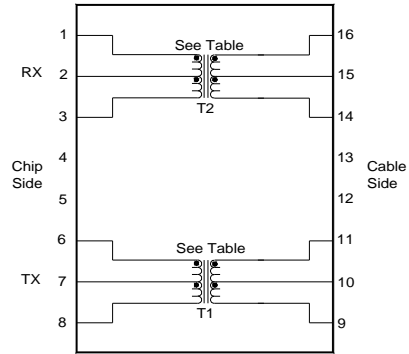
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| Product Description | Ethernet Magnetics Module Single Port, Surface Mount |
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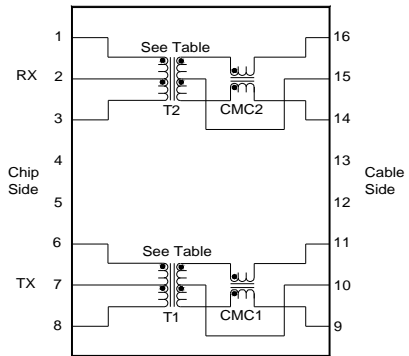
Schematic K



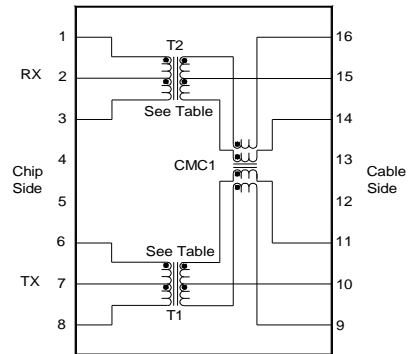
Schematic L



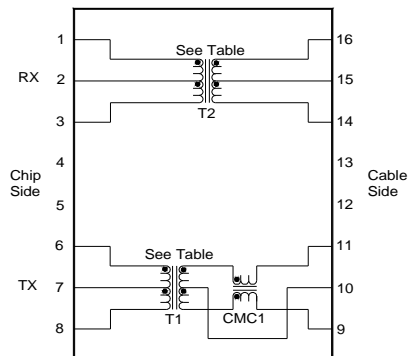
Schematic M



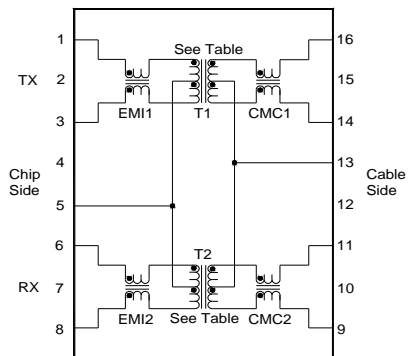
Schematic N



Schematic P



Schematic R



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