

MGH7S (HB7xx) Series	REV	 
	S	
Product Description	Ethernet Magnetics Module	
	Single Port, Surface Mount	

Standard Features

10BASE-T AND 10/100BASE-T

Single channel interface for 10/100Mbps Ethernet application

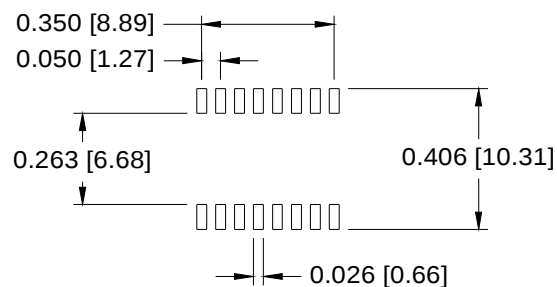
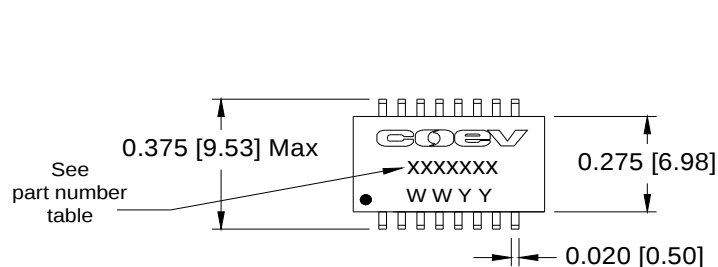
Compliant with IEEE 802.3 and ANSI X3.263 Standards

Surface mount package designed for reflow process (240°C peak)

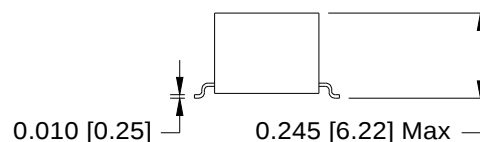
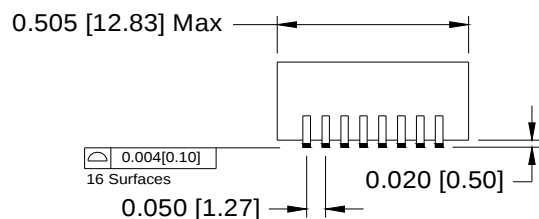
Dielectric Isolation is 1500Vrms minimum

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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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
HB710	1:1	1:1	C
HB721	2:1	1:1	A
HB721-1	2:1	1:1	B
HB723	1:1.41	1:1	D
HB723-1	1:1.41	1:1	E
HB726	1:1	1:1	A
HB726ET	1:1	1:1	A
HB726-1	1:1	1:1	B
HB726ET-1	1:1	1:1	B
HB726-4	1:1	1:1	F
HB726-5	1:1	1:1	G
HB726ET-5	1:1	1:1	G
HB726-6	1:1	1:1	H
HB733	1.25:1	1:1	A
HB733-1	1.25:1	1:1	B
HB739	1.41:1	1:1	A
HB739-1	1.41:1	1:1	B
HB781	1.41:1	1.41:1	A

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

Inductance: 350uH Min with 8mADC Bias, 0°C to +70°C
350uH Min with 8mADC Bias, -40°C to +85°C for "ET" parts
(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

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**MGH7S (HB7xx)
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**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	1:1.41	1:1	140	0.40	15	0°C to +70°C	J
HB719-3	1:1.41	1:1	140	0.40	15	0°C to +70°C	L
HB720	1:2	1:1	140	0.30	12	0°C to +70°C	M
HB720-2	1:2	1:1	140	0.30	12	0°C to +70°C	A
HB724	1:2.5	1:1	140	0.40	15	0°C to +70°C	C
HB724-3	1:2.5	1:1	140	0.40	15	0°C to +70°C	N
HB724ET	1:2.5	1:1	Note 3	0.40	15	-40°C to +85°C	C
HB724ET-3	1:2.5	1:1	Note 3	0.40	15	-40°C to +85°C	N
HB725	1:1.41	1:1	140	0.40	12	0°C to +70°C	M
HB725-2	1:1.41	1:1	140	0.40	12	0°C to +70°C	A
HB728	1:2	1:1	Note 4	0.30	12	-40°C to +85°C	A
HB728-3	1:2	1:1	Note 4	0.30	12	-40°C to +85°C	M
HB729	1:1	1:1	140	0.40	12	0°C to +70°C	A
HB729-3	1:1	1:1	140	0.40	12	0°C to +70°C	M
HB730	1:2	1:1	140	0.40	12	0°C to +70°C	N
HB730-2	1:2	1:1	140	0.40	12	0°C to +70°C	C
HB731	1:1.41	1:1	140	0.40	12	0°C to +70°C	K
HB731-3	1:1.41	1:1	140	0.40	12	0°C to +70°C	P
HB734	1:2	1:1	140	0.40	12	0°C to +70°C	L
HB734-2	1:2	1:1	140	0.40	12	0°C to +70°C	J
HB735	2:1	1:1	140	0.70	12	0°C to +70°C	A
HB735-1	2:1	1:1	140	0.70	12	0°C to +70°C	K
HB735-3	2:1	1:1	140	0.70	12	0°C to +70°C	M
HB736	2:1	1:1	140	1.00	20	0°C to +70°C	C
HB736-3	2:1	1:1	140	1.00	20	0°C to +70°C	N
HB782	1:2.5	1:1	Note 5	0.40	15	0°C to +70°C	J
HB782-3	1:2.5	1:1	Note 5	0.40	15	0°C to +70°C	L
HB783	1:1	1:1	100	0.40	15	0°C to +70°C	J
MGH7S-00001	1:1	1:1	100	0.40	15	0°C to +70°C	L

Notes:

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

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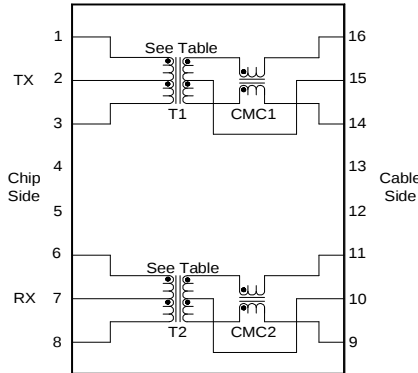
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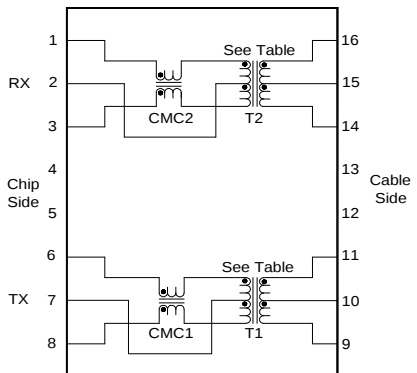
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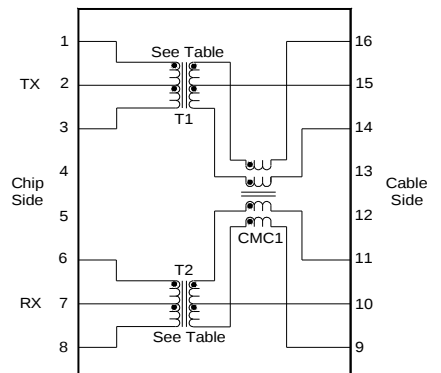
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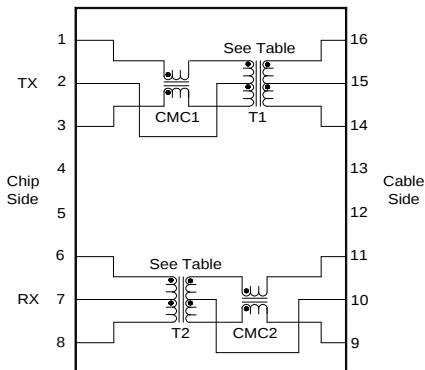
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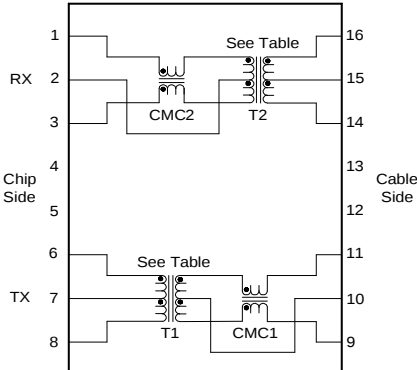
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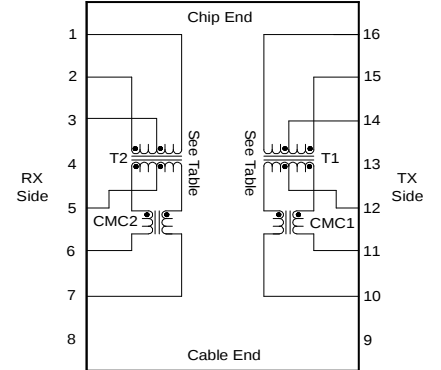
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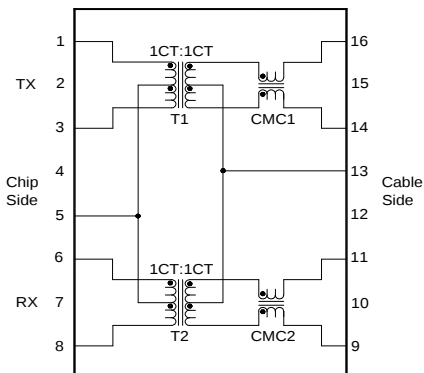
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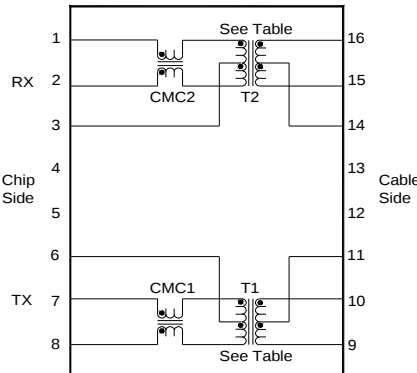
Schematic F



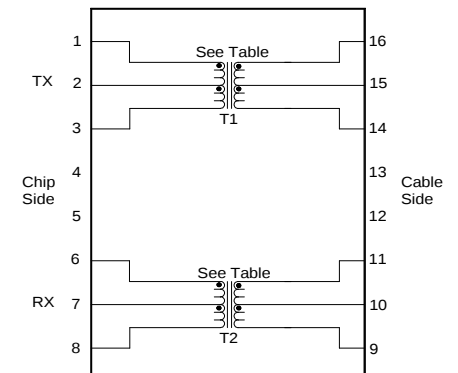
Schematic G



Schematic H



Schematic J



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