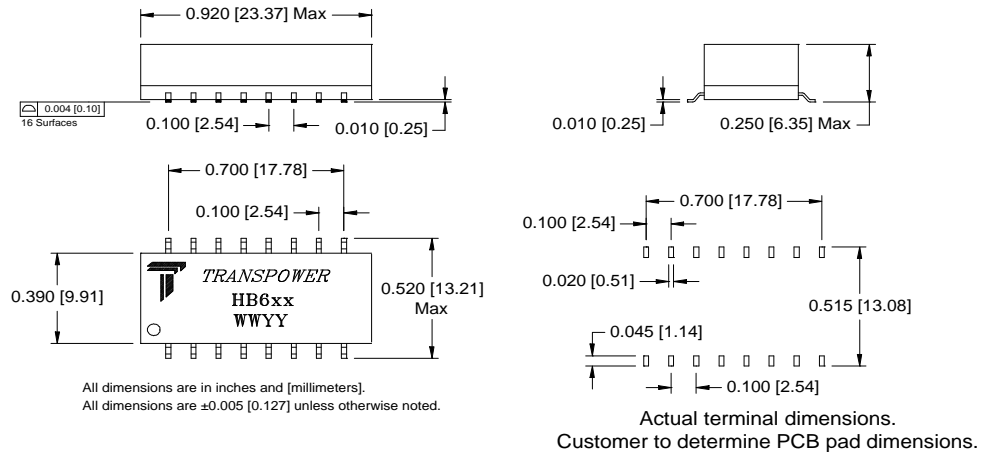


<b>Product Description</b>	<b>Ethernet Magnetics</b>
	<b>Single Port Ethernet Magnetics Module</b>

### Standard Features

- Single port interface
- Compliant IEEE 802.3 and ANSI X3.263 Standards
- Surface mount package designed for reflow process (240°C peak)
- Tape & Reel Packaging is standard
- Package molded using UL94-V0 rated material

### HB6xx Package (Standard)





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

- Inductance: 350uH Min with 8mADC Bias  
(See part number table for operating temperature range)  
(Each transformer measured on the cable side)
- Rise time (10% - 90%): 2.5nSec typical
- 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 - 20Log<sub>10</sub>(f/30) dB where f is in MHz
  - 60Mhz - 80MHz = 12dB
  - 80.1Mhz - 100MHz = 10dB

MGH6S (HB6xx) Series	REV	 
	P	
Product Description	Ethernet Magnetics	
	Single Port Ethernet Magnetics Module	

10-100BASE-T Part Number Table

Part Number	TX Turns Ratio (Chip:Cable)	RX Turns Ratio (Chip:Cable)	Schematic	Auto MDIX Capable	Temperature Range
HB606	1:1	1:1	A	Yes	0°C to 70°C
HB606-1	1:1	1:1	S	Yes	0°C to 70°C
HB606-2	1:1	1:1	T	Yes	0°C to 70°C
HB606ET	1:1	1:1	A	Yes	-40°C to +85°C
HB606ET-1	1:1	1:1	S	Yes	-40°C to +85°C
HB606ET-2	1:1	1:1	T	Yes	-40°C to +85°C
HB607	2:1	1:1	D	No	0°C to 70°C
HB607-1	2:1	1:1	G	No	0°C to 70°C
HB607-2	2:1	1:1	K	No	0°C to 70°C
HB608	1:1	1:1	U	No	0°C to 70°C
HB608-1	1:1	1:1	V	No	0°C to 70°C
HB608-2	1:1	1:1	W	No	0°C to 70°C
HB608ET	1:1	1:1	U	No	-40°C to +85°C
HB608ET-1	1:1	1:1	V	No	-40°C to +85°C
HB608ET-2	1:1	1:1	W	No	-40°C to +85°C
HB612	1.41:1	1:1	P	No	0°C to 70°C
HB612-1	1.41:1	1:1	E	No	0°C to 70°C
HB612-2	1.41:1	1:1	H	No	0°C to 70°C
HB612-12	1.41:1	1:1	P	No	0°C to 70°C
HB614	1:1	1:1	C	No	0°C to 70°C
HB614-1	1:1	1:1	F	No	0°C to 70°C
HB614-2	1:1	1:1	J	No	0°C to 70°C
HB614ET	1:1	1:1	X	No	-40°C to +85°C
HB614ET-1	1:1	1:1	F	No	-40°C to +85°C
HB614ET-2	1:1	1:1	J	No	-40°C to +85°C
HB615	1:1	1:1	Y	Yes	0°C to 70°C
HB615-1	1:1	1:1	Z	Yes	0°C to 70°C
HB615-2	1:1	1:1	AA	Yes	0°C to 70°C
HB615ET	1:1	1:1	Y	Yes	-40°C to +85°C
HB615ET-1	1:1	1:1	Z	Yes	-40°C to +85°C
HB615ET-2	1:1	1:1	AA	Yes	-40°C to +85°C
HB616	1:1.41	1:1	N	No	0°C to 70°C
HB617	1:1	1:1	R	No	0°C to 70°C
HB617-1	1:1	1:1	G	No	0°C to 70°C
HB617-2	1:1	1:1	K	No	0°C to 70°C
HB617-3	1:1	1:1	D	No	0°C to 70°C
HB618	2:1	1:1	C	No	0°C to 70°C
HB618-1	2:1	1:1	F	No	0°C to 70°C
HB618-2	2:1	1:1	J	No	0°C to 70°C

continued on sheet 3

MGH6S (HB6xx) Series	REV	 
	P	
Product Description	Ethernet Magnetics	
	Single Port Ethernet Magnetics Module	

(continued from sheet 2)

### 10-100BASE-T Part Number Table

Part Number	TX Turns Ratio (Chip:Cable)	RX Turns Ratio (Chip:Cable)	Schematic	Auto MDIX Capable	Temperature Range
HB621	2:1	1:1	E	No	0°C to 70°C
HB621-2	2:1	1:1	H	No	0°C to 70°C
HB621-3	2:1	1:1	B	No	0°C to 70°C
HB622	1:1.41	1:1	M	No	0°C to 70°C
HB623	1:1.41	1:1	L	No	0°C to 70°C
HB626	1:1	1:1	B	Yes	0°C to 70°C
HB626-1	1:1	1:1	E	Yes	0°C to 70°C
HB626-2	1:1	1:1	H	Yes	0°C to 70°C
HB626ET	1:1	1:1	AB	Yes	-40°C to +85°C
HB626ET-1	1:1	1:1	E	Yes	-40°C to +85°C
HB626ET-2	1:1	1:1	H	Yes	-40°C to +85°C
HB637	1.25:1	1:1	C	No	0°C to 70°C
HB637-1	1.25:1	1:1	F	No	0°C to 70°C
HB637-2	1.25:1	1:1	J	No	0°C to 70°C
HB638	1.41:1	1:1	C	No	0°C to 70°C
HB638-1	1.41:1	1:1	F	No	0°C to 70°C
HB638-2	1.41:1	1:1	J	No	0°C to 70°C
HB681	1.41:1	1.41:1	B	No	0°C to 70°C
HB681-1	1.41:1	1.41:1	E	No	0°C to 70°C
HB681-2	1.41:1	1.41:1	H	No	0°C to 70°C

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### 10BASE-T Part Number Table

Part Number	TX Turns Ratio (Chip:Cable)	CMC1	CMC2	OCL uH (Min)	LL uH (Max)	Cww pF (Max)	Temperature Range	Schematic
HB619	1:1.41	No	No	140	0.40	15	0°C to +70°C	A
HB619-1	1:1.41	No	No	140	0.40	15	0°C to +70°C	B
HB620	1:2	Yes	Yes	140	0.30	12	0°C to +70°C	A
HB620-1	1:2	Yes	Yes	140	0.30	12	0°C to +70°C	B
HB624	1:2.5	Note 1	Note 1	140	0.30	15	0°C to +70°C	AC
HB624-1	1:2.5	Note 1	Note 1	140	0.30	15	0°C to +70°C	B
HB624ET	1:2.5	Note 1	Note 1	Note 3	0.30	15	-40°C to +85°C	AC
HB624ET-1	1:2.5	Note 1	Note 1	Note 3	0.30	15	-40°C to +85°C	B
HB625	1:1.41	Yes	Yes	140	0.40	12	0°C to +70°C	A
HB625-1	1:1.41	Yes	Yes	140	0.40	12	0°C to +70°C	B
HB628	1:2	Yes	Yes	140	0.30	12	-40°C to +85°C	A
HB628-1	1:2	Yes	Yes	140	0.30	12	-40°C to +85°C	B
HB629	1:1	Yes	Yes	140	0.40	12	0°C to +70°C	A
HB629-1	1:1	Yes	Yes	140	0.40	12	0°C to +70°C	B
HB631	1:1.41	Yes	No	140	0.40	12	0°C to +70°C	A
HB631-1	1:1.41	Yes	No	140	0.40	12	0°C to +70°C	B
HB634	1:2	Yes	No	140	0.40	12	0°C to +70°C	A
HB634-1	1:2	Yes	No	140	0.40	12	0°C to +70°C	B
HB635	2:1	Yes	Yes	140	0.70	12	0°C to +70°C	A
HB635-1	2:1	Yes	Yes	140	0.70	12	0°C to +70°C	B
HB636	2:1	Note 1	Note 1	140	1.00	20	0°C to +70°C	AC
HB636-1	2:1	Note 1	Note 1	140	1.00	20	0°C to +70°C	B

**Notes:**

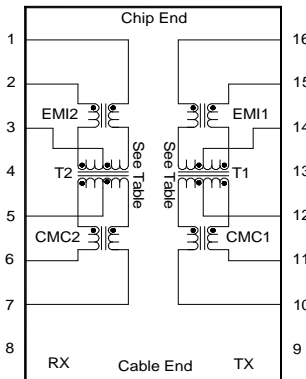
1. The 24, 24ET and 36 circuits have one 4 line CMC
2. OCL, Cxx and LL are measured at 0.10Vrms at 100KHz
3. TX OCL is 80uH Min @ 25°C, 35uH Min @ -40°C  
RX OCL is 389uH Min @ 25°C, 200uH Min @ -40°C
4. TX and RX OCL is 140uH Min @ 25°C, 60uH Min @ -40°C
5. Dielectric isolation is 1500Vrms

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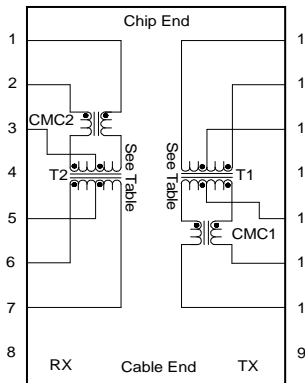
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<b>Product Description</b>	<b>Ethernet Magnetics</b> <b>Single Port Ethernet Magnetics Module</b>
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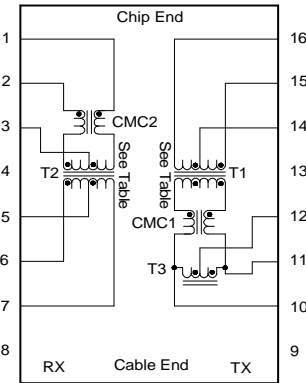
**Schematic A**



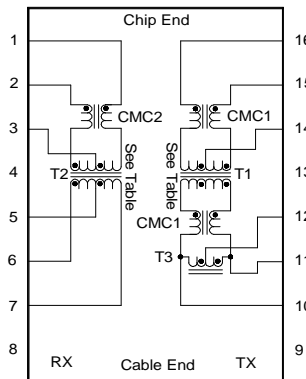
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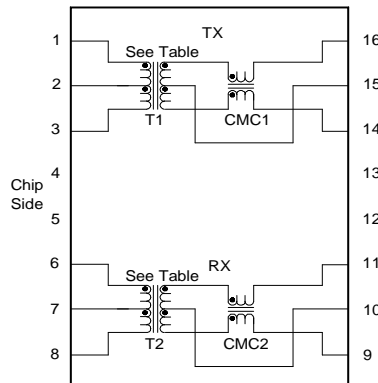
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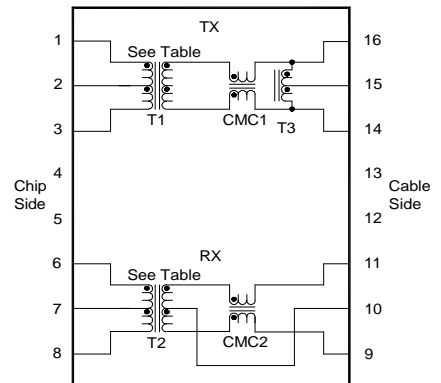
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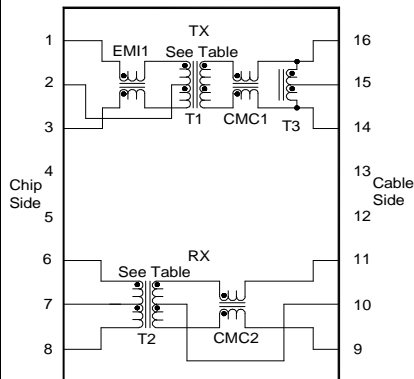
**Schematic E**



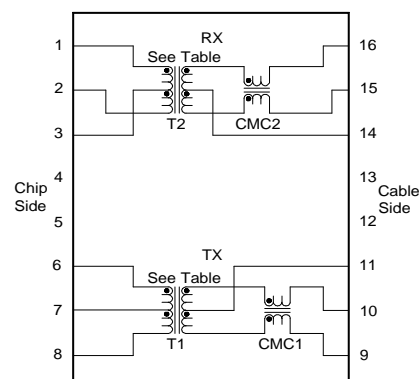
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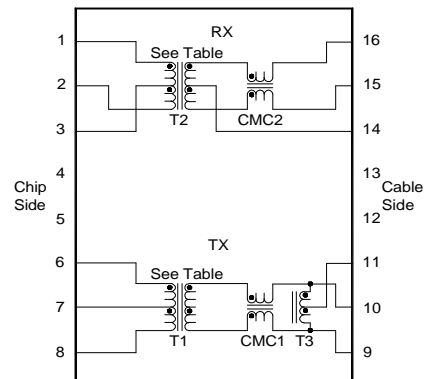
**Schematic G**



**Schematic H**



**Schematic J**



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**MGH6S (HB6xx)  
Series**

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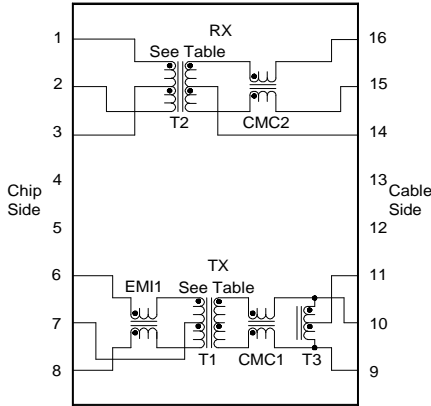
**COEV  
MAGNETICS**

**tyco** Electronics

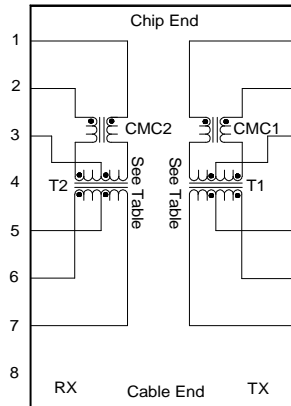
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Description**

**Ethernet Magnetics  
Single Port Ethernet Magnetics Module**

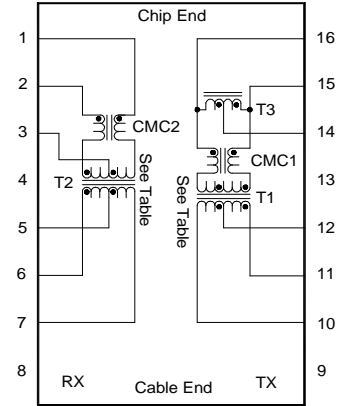
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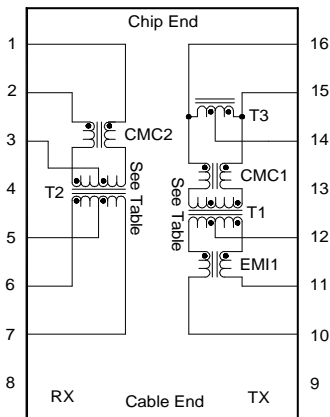
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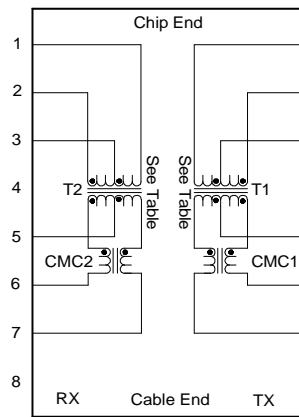
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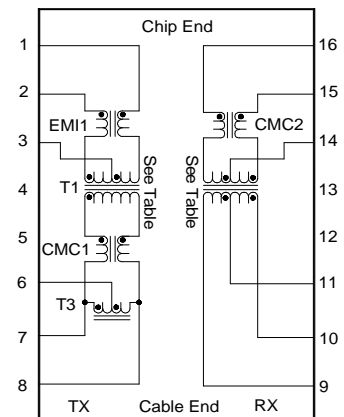
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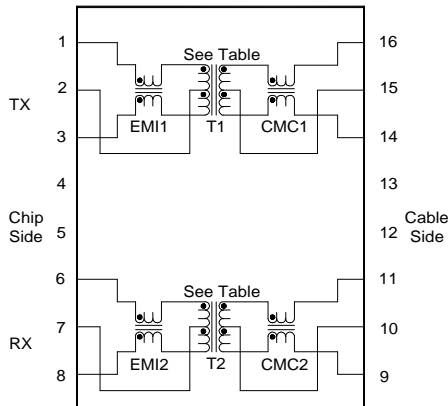
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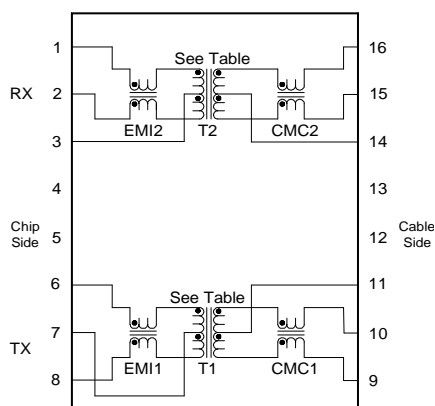
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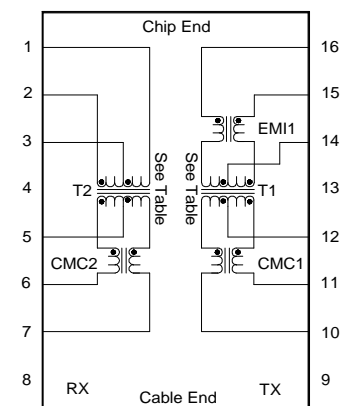
**Schematic S**



**Schematic T**



**Schematic U**



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**MGH6S (HB6xx)  
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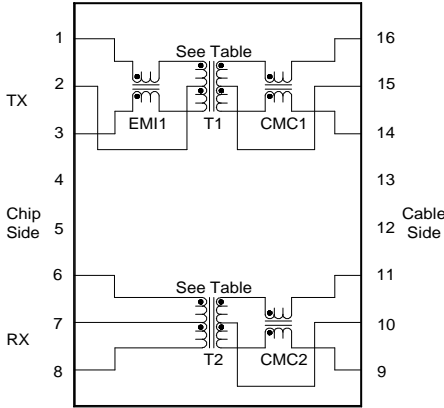
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**tyco** Electronics

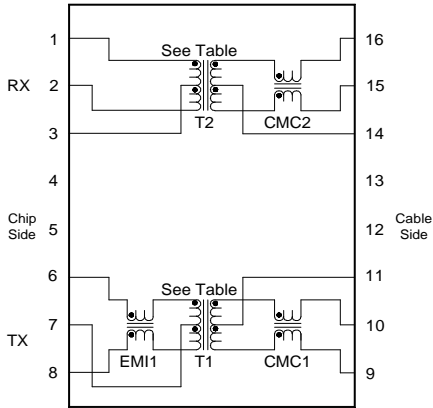
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Description**

**Ethernet Magnetics  
Single Port Ethernet Magnetics Module**

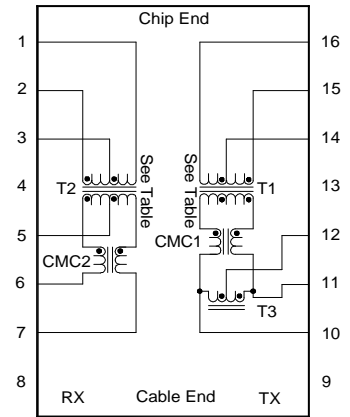
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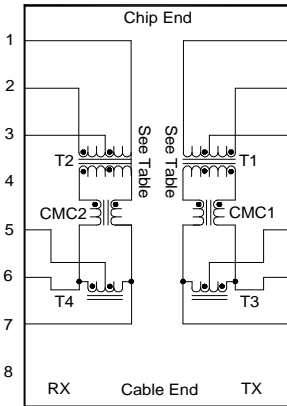
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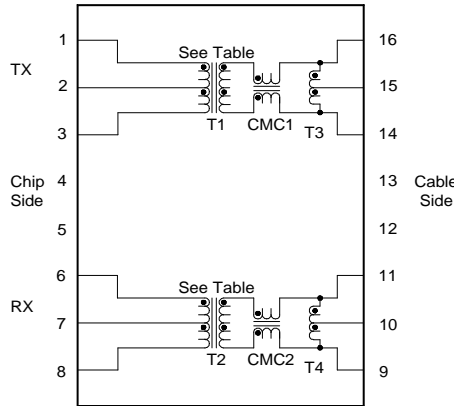
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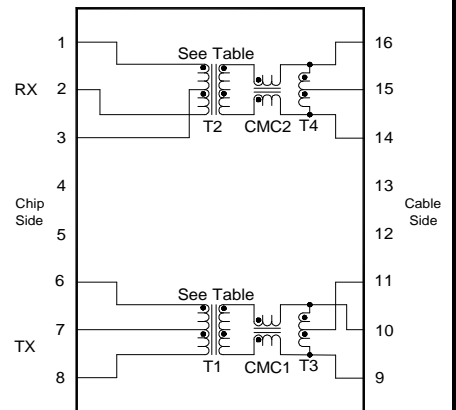
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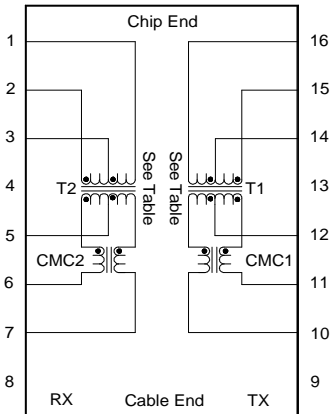
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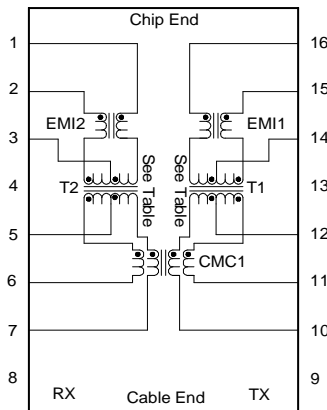
**Schematic AA**



**Schematic AB**



**Schematic AC**



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