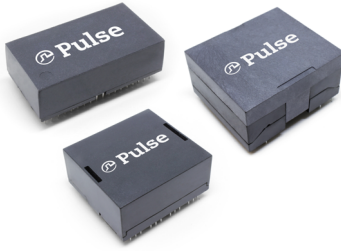


# THT Quad Ports 1G, 5G or 10G Magnetic Modules

HB5610NL, HB5611NL, HB5612NL, HB5013NL, HB5014NL, HB5G603NL and HXB7603NL



- Ⓢ THT package 96, 88 and 72 pin designs offer space saving high density port count compared to SMD solutions
- Ⓢ Meets or exceeds IEEE 802.3ab/bz/an standards
- Ⓢ Compatible with leading silicon vendors PHYs
- Ⓢ Fully RoHS compliant
- Ⓢ THT Parts Hand or Wave Solder 260°C/5secs (max)

## Electrical Specification @ 25°C (For 1Gbps)

Part Number	Media side Inductance (@100KHz/0.1Ve DC8mA) (uH min)	Insertion Loss (dB max)	Return Loss (dB min)		PoE (Current Per Pair mA)	Operating Temperature (°C)	Isolation (Pri:Sec)	Note	
			1-100 MHz	1-40MHz					40 < f ≤ 100 MHz
HB5613NL	350	-1.0	-16	-(10-20 log10(f/80))		-	0° to 70°	1500Vrms	-
HB5614NL	350	-1.0	-16	-(10-20 log10(f/80))		-	0° to 70°	1500Vrms	-
HB5610NL	350	-1.0	-16	-(10-20 log10(f/80))		-	0° to 70°	1500Vrms	-
HB5611NL	350	-1.0	-16	-(10-20 log10(f/80))		-	0° to 70°	1500Vrms	-
HB5612NL	350	-1.0	-16	-(10-20 log10(f/80))		-	0° to 70°	1500Vrms	-

## Electrical Specification @ 25°C (For 5Gbps)

Part Number	Media side Inductance (@100KHz/0.1Ve) uH min	Insertion Loss (dB max)		Return Loss (dB min)		PoE (Current Per Pair mA)	Operating Temperature (°C)	Isolation (Pri:Sec)	Note	
		1-100 MHz	100-250MHz	1-40MHz	40 < f ≤ 250 MHz					
HB5G603NL	180	-1.0	-2.0	-16	-(16-10 log10(f /40))		-	0° to 70°	1500Vrms	-

## Electrical Specification @ 25°C (For 10Gbps)

Part Number	Media side Inductance (@100KHz/0.1Ve) uH min	Insertion Loss (dB max)			Return Loss (dB min)			PoE (Current Per Pair mA)	Operating Temperature (°C)	Isolation (Pri:Sec)	Note	
		1-100MHz	100-400MHz	500MHz	1-40MHz	40 < f ≤ 400 MHz	400 < f ≤ 500 MHz					
HXB7603NL	100	-1.0	-1.5	-2.0	-18	-(18-10 log10(f /40))		-(8-30 log10(f /400))	-	-40° to 90°	1500Vrms	-

## Process and Materials

### Notes:

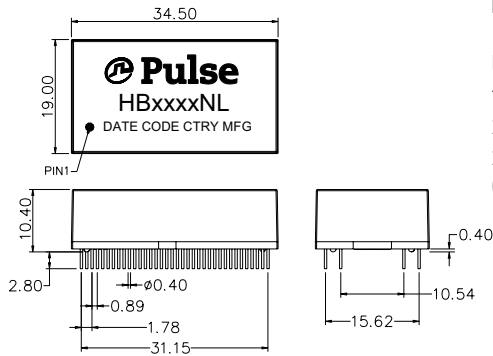
1. Storage Temperature:
  - HBxxxxNL = -20 to +125°C
  - HXBxxxxNL = -50 to +125°C
2. Compliance to JEDEC-J-STD 020:
  - i. Moisture Sensitive Level 1
3. All parts are packaged in tubes - see page 4-5 for details
4. Header: Black Thermoset Plastic - Material flammability rating UL 94V-0
5. Lead Frame: Copper-clad Steel
6. Underplate / Overplate: Tin electro-deposited over Nickel
7. Finish: Matte finish Tin solder

# THT Quad Ports 1G, 5G or 10G Magnetic Modules

HB5610NL, HB5611NL, HB5612NL, HB5013NL, HB5014NL, HB5G603NL and HXB7603NL

## Mechanicals

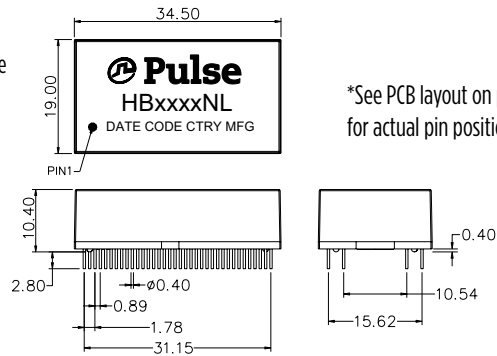
### HB5613NL



Dimensions: mm

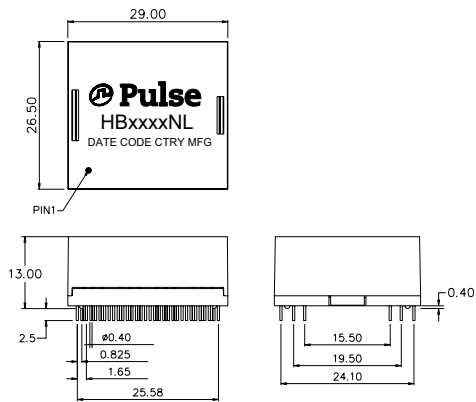
Unless otherwise specified the following tolerances apply:  
 xx.xx =  $\pm 0.25$   
 x.xx =  $\pm 0.25$   
 0.xx =  $\pm 0.13$

### HB5614NL



\*See PCB layout on page 4 for actual pin positions

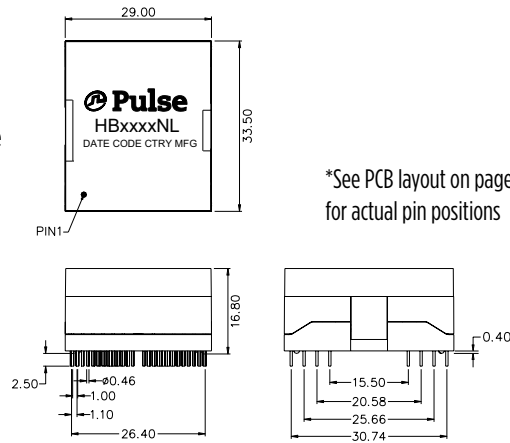
### HB5610NL, HB5611NL



Dimensions: mm

Unless otherwise specified the following tolerances apply:  
 xx.xx =  $\pm 0.25$   
 x.xx =  $\pm 0.25$   
 0.xx =  $\pm 0.13$

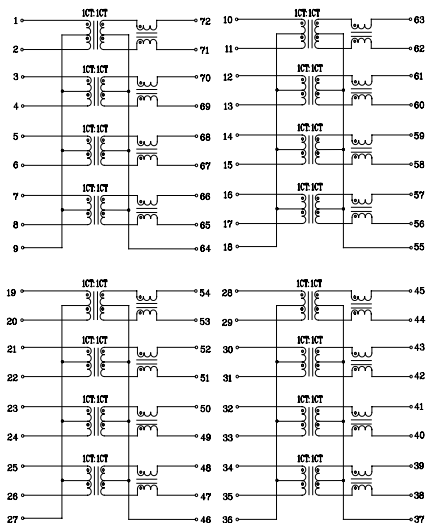
### HB5612NL, HXB7603NL, HB5G603NL



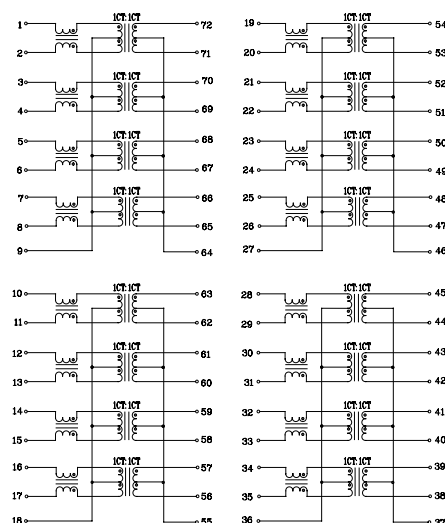
\*See PCB layout on page 4 for actual pin positions

## Schematics

### HB5613NL



### HB5614NL



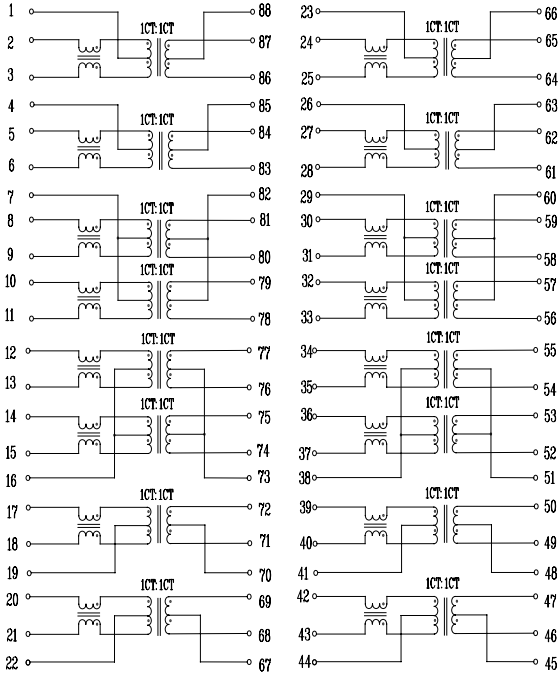
# THT Quad Ports 1G, 5G or 10G Magnetic Modules

HB5610NL, HB5611NL, HB5612NL, HB5013NL, HB5014NL, HB5G603NL and HXB7603NL

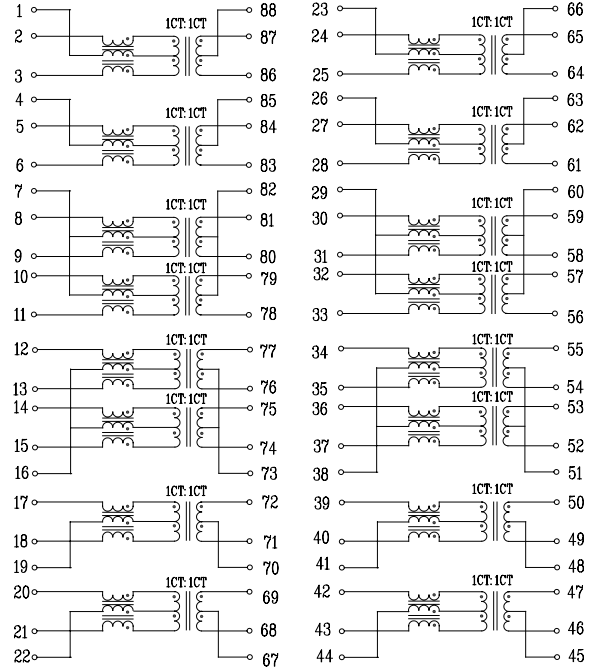


## Schematics

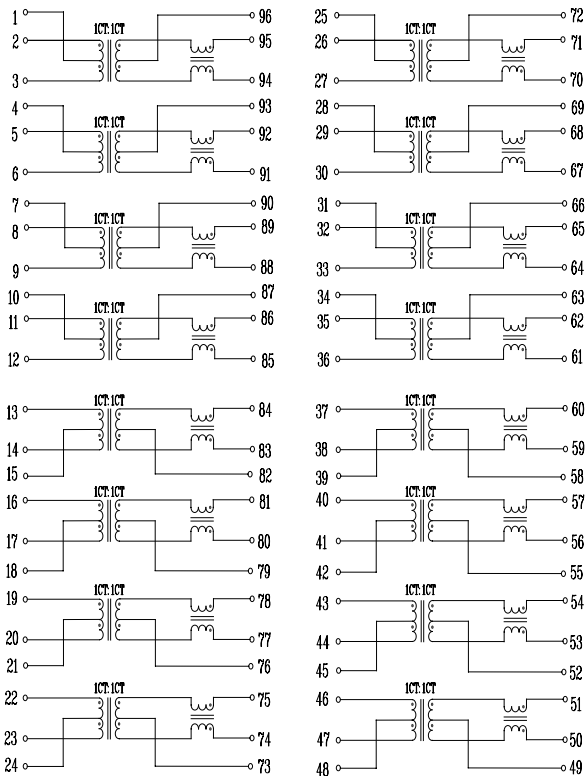
### HB5611NL



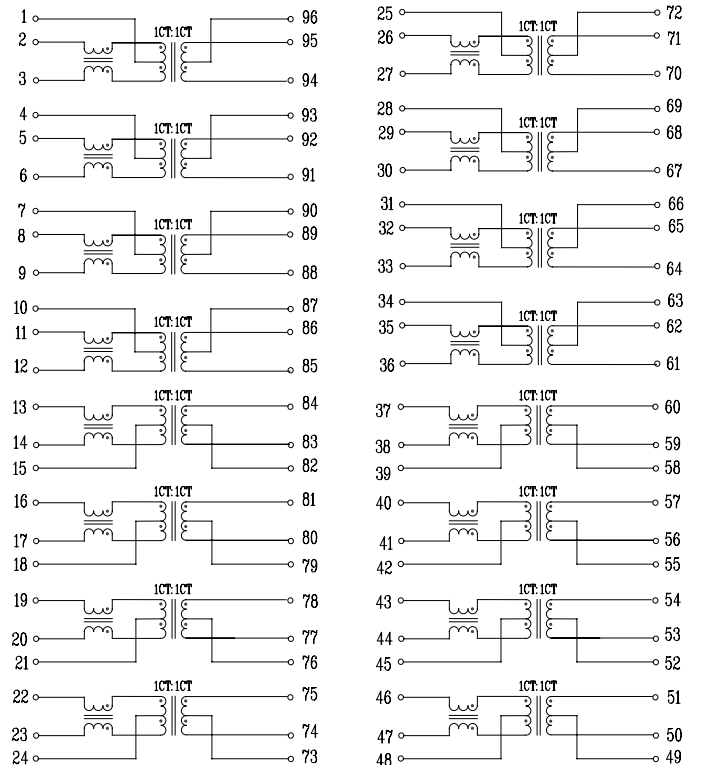
### HB5610NL



### HXB7603NL



### HB5612NL, HB5G603NL



# THT Quad Ports 1G, 5G or 10G Magnetic Modules

HB5610NL, HB5611NL, HB5612NL, HB5013NL, HB5014NL, HB5G603NL and HXB7603NL

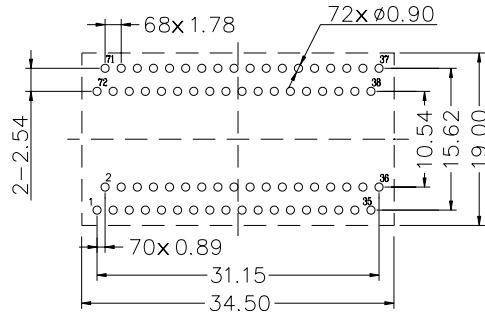


## PCB Layout mounting Hole (Top View)

### HB5613NL, HB5614NL

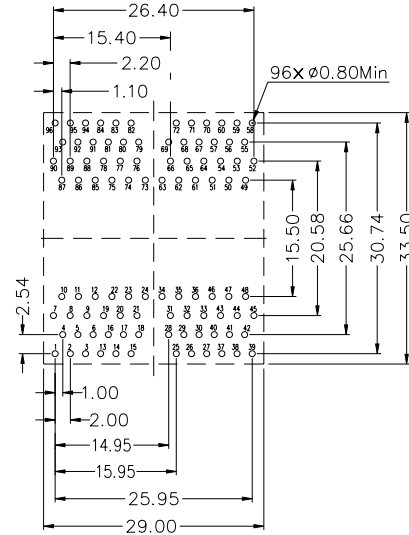
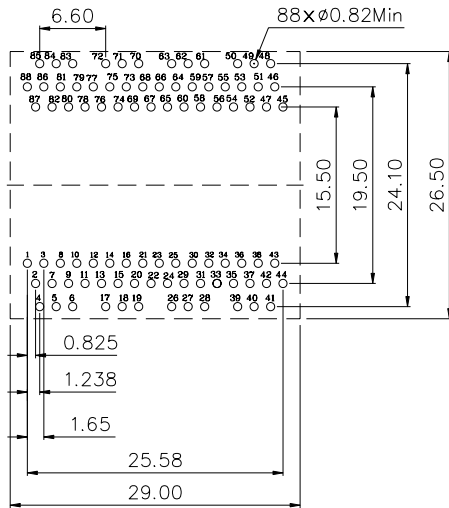
Dimensions: mm

Unless otherwise specified,  
all tolerances are  $\pm 0.08$



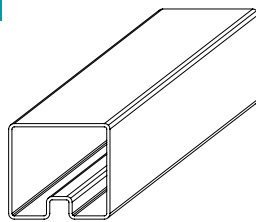
### HB5610NL, HB5611NL

### HB5612NL, HXB7603NL, HB5G603NL

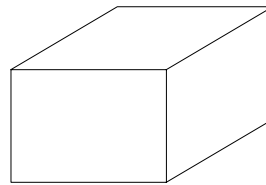


## Carton Package

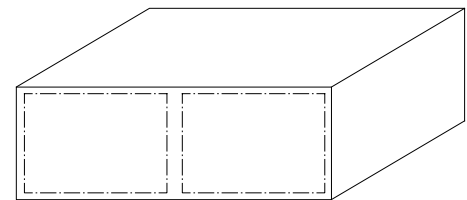
### HB5613NL



TUBE



INNER BOX: 567x135x125



OUTER CARTON: 598x287x150

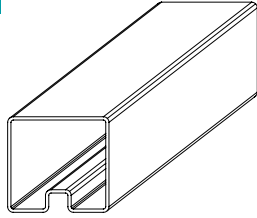
1. TUBE=14 PCS
2. INNER BOX=25 TUBES=350 PCS
3. OUTER CARTON=2 INNER BOXES=700 PCS

# THT Quad Ports 1G, 5G or 10G Magnetic Modules

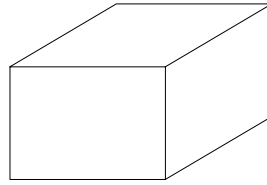
HB5610NL, HB5611NL, HB5612NL, HB5013NL, HB5014NL, HB5G603NL and HXB7603NL

## Carton Package

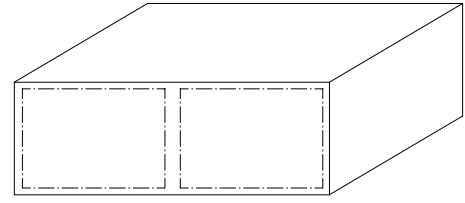
### HB5614NL



TUBE



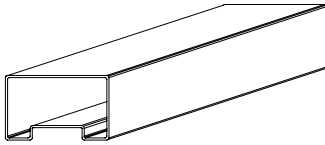
INNER BOX: 567x135x125



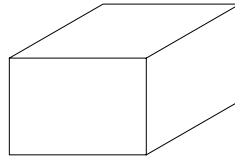
OUTER CARTON: 598x287x150

- 1.TUBE=14 PCS
- 2.INNER BOX=25 TUBES=420 PCS
- 3.OUTER CARTON=2 INNER BOXES=840 PCS

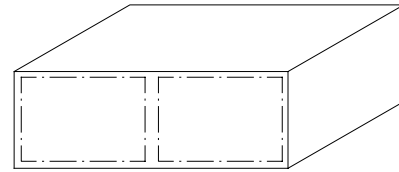
### HB5610NL, HB5611NL



TUBE



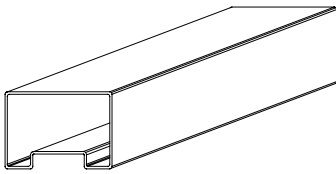
INNER BOX: 567x135x125



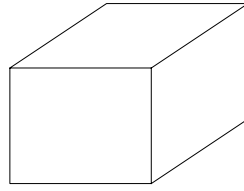
OUTER CARTON: 598x287x150

1. 1 TUBE=17PCS
2. 1 INNER BOX=20 TUBES=340PCS
3. 1 OUTER CARTON=2 INNER BOXES=680PCS

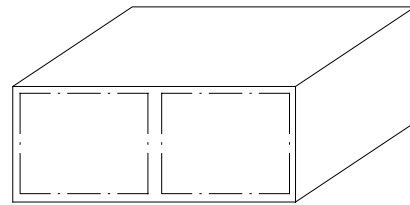
### HB5612NL, HXB7603NL, HB5G603NL



TUBE



INNER BOX: 567x135x125



OUTER CARTON: 598x287x150

1. 1 TUBE=17PCS
2. 1 INNER BOX=12 TUBES=204PCS
3. 1 OUTER CARTON=2 INNER BOXES=408PCS

## For More Information:

Americas - [prodinfo\\_network\\_americas@yageo.com](mailto:prodinfo_network_americas@yageo.com) | Europe - [prodinfo\\_network\\_emea@yageo.com](mailto:prodinfo_network_emea@yageo.com) | Asia - [prodinfo\\_network\\_asia@yageo.com](mailto:prodinfo_network_asia@yageo.com)

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