

# THT Quad Port PoE 1G or 5G or 10G Magnetic Modules

HB6603NL, HB6604NL, HB6605NL, HB5G601NL, HXB5G602NL, HXB6606NL, HXB6607NL, HXB7601NL and HXB7602NL



- ④ THT 4 port high density package in 88 or 96 pin options
- ④ Meets or exceeds IEEE 802.3ab/af/at/bt/bz/an standards
- ④ Compatible with all leading PHYs
- ④ Modules support 4pair PoE for 60W and 90W
- ④ Fully RoHS compliant
- ④ THT Parts Hand or Wave Solder 260°C/5secs (max)

## Electrical Specification @ 25°C (For 1Gbps - OCL measured at 8mAdc)

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	1-40MHz	40< f ≤ 100 MHz				
HB6603NL	350	-1.0	-16	-(10-20 log10(f/80))		600	0° to 70°	1500Vrms	4Pair PoE+ (60W)
HB6604NL	350	-1.0	-16	-(10-20 log10(f/80))		600	0° to 70°	1500Vrms	4Pair PoE+ (60W)
HB6605NL	350	-1.0	-16	-(10-20 log10(f/80))		600	0° to 70°	1500Vrms	4Pair PoE+ (60W)
HXB6607NL	260	-1.0	-16	-(10-20 log10(f/80))		600	-40° to 85°	1500Vrms	4Pair PoE+ (60W)
HXB6606NL	280*	-1.4	-16	-(10-20 log10(f/80))		1000	-40° to 85°	1500Vrms	4Pair PoE+ (90W)

Note: \* OCL measured at 15mAdc

## 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				
HB5G601NL	180	-1.0	-2.0	-16	-(16-10 log10(f /40))	600	0° to 70°	1500Vrms	4Pair PoE+ (60W)
HXB5G602NL	180	-1.0	-2.0	-16	-(16-10 log10(f /40))	1000	-40° to 85°	1500Vrms	4Pair PoE+ (90W)

## 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				
HXB7601NL	120	-1.0	-1.5	-2.0	-18	-(18-10 log10(f /40))	-(8-30 log10 ( f /400))	1000	-40° to 105°	1500Vrms	4Pair PoE+ (90W)
HXB7602NL	100	-1.0	-1.5	-2.0	-18	-(18-10 log10(f /40))	-(8-30 log10(f /400))	600	-40° to 90°	1500Vrms	4Pair PoE+ (60W)

## 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 for details
4. Header: Thermosetting plastics with flammability Rating UL 94V-0 or better
5. Lead Frame: Copper-clad Steel
6. Underplate / Overplate: Tin electro-deposited over Nickel
7. Finish: Matte finish Tin solder

# THT Quad Port PoE 1G or 5G or 10G Magnetic Modules

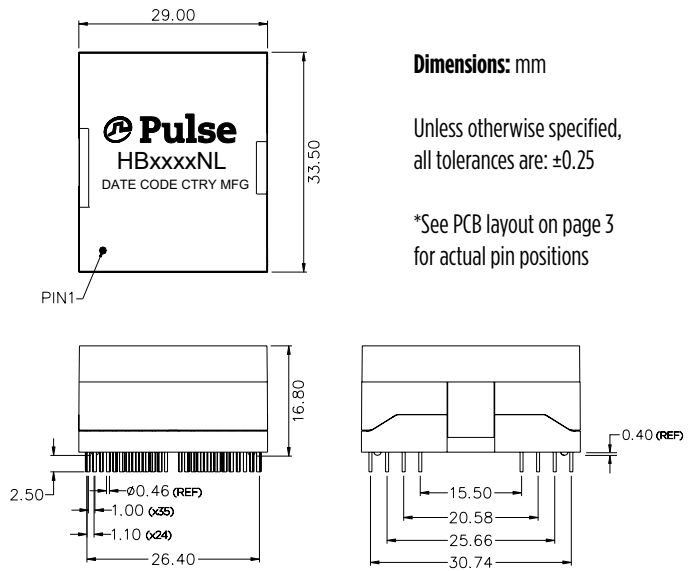
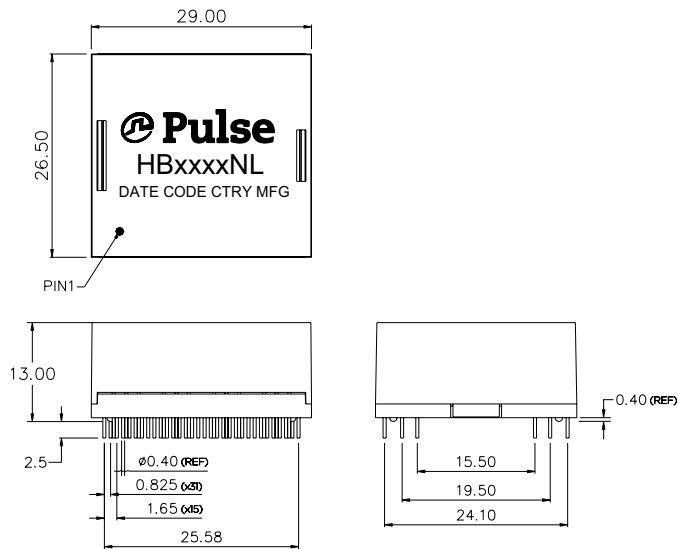
HB6603NL, HB6604NL, HB6605NL, HB5G601NL, HXB5G602NL, HXB6606NL, HXB6607NL, HXB7601NL and HXB7602NL



## Mechanicals

HB6603NL, HB6604NL, HB6605NL

HXB660xNL, HXB760xNL, HXB5G602NL, HB5G601NL



Dimensions: mm

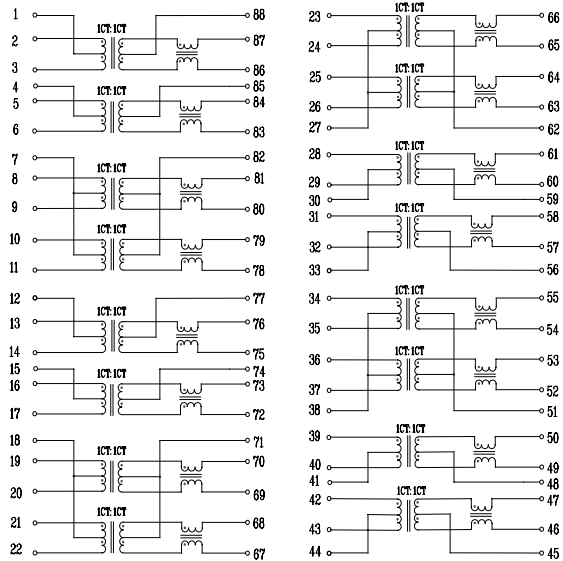
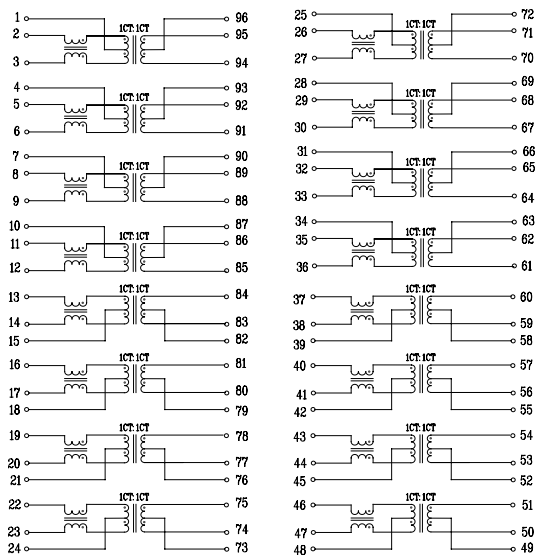
Unless otherwise specified, all tolerances are: ±0.25

\*See PCB layout on page 3 for actual pin positions

## Schematics

HXB660xNL, HXB760xNL, HXB5G602NL, HB5G601NL

HB6603NL



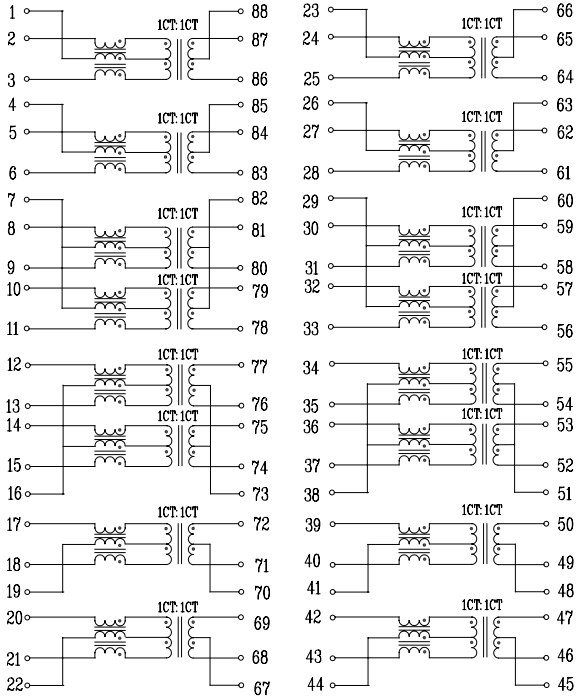
# THT Quad Port PoE 1G or 5G or 10G Magnetic Modules

HB6603NL, HB6604NL, HB6605NL, HB5G601NL, HXB5G602NL, HXB6606NL, HXB6607NL, HXB7601NL and HXB7602NL

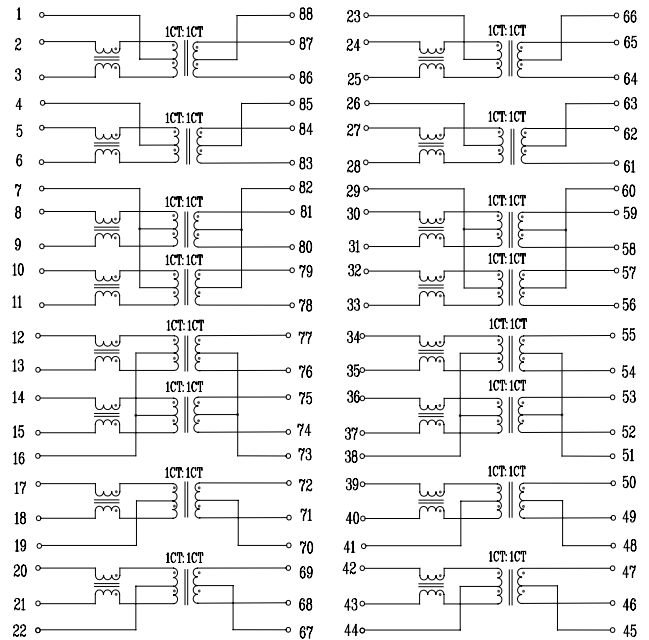


## Schematics

### HB6605NL

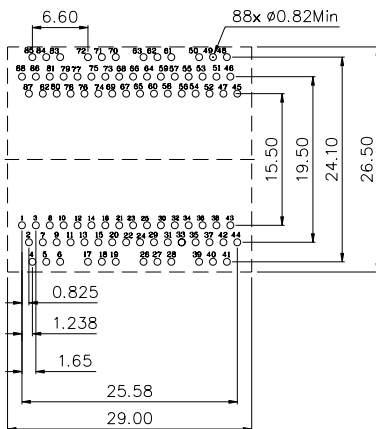


### HB6604NL



## PCB Layout mounting Hole (Top View)

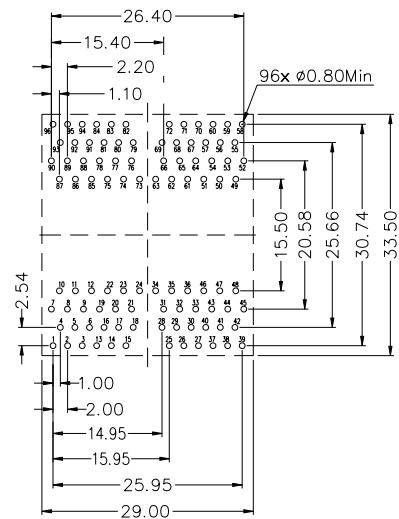
### HB6603NL, HB6604NL, HB6605NL



Dimensions: mm

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

### HXB660xNL, HXB760xNL, HXB5G602NL, HB5G601NL

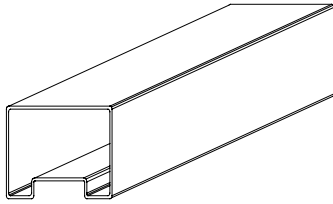


# THT Quad Port PoE 1G or 5G or 10G Magnetic Modules

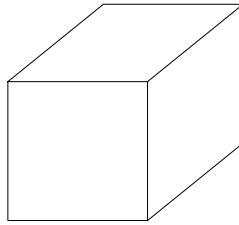
HB6603NL, HB6604NL, HB6605NL, HB5G601NL, HXB5G602NL, HXB6606NL, HXB6607NL, HXB7601NL and HXB7602NL

## Carton Package

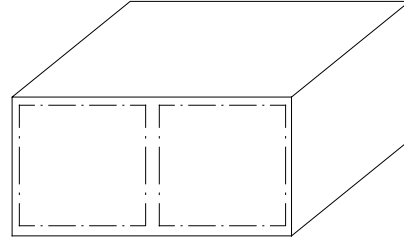
HB6603NL, HB6604NL, HB6605NL



TUBE



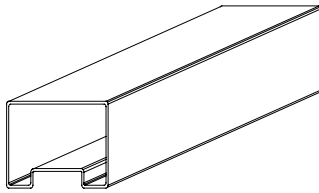
INNER BOX: 567x135x125



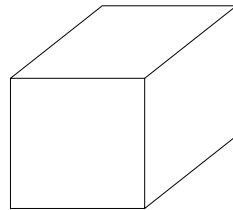
OUTER CARTON: 598x287x150

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

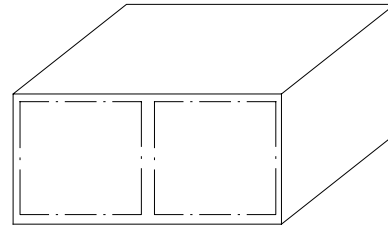
HXB660xNL, HXB760xNL, HXB5G602NL, HB5G601NL



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)

Performance warranty of products offered on this data sheet is limited to the parameters specified. Data is subject to change without notice. Other brand and product names mentioned herein may be trademarks or registered trademarks of their respective owners. © Copyright, 2023. Pulse Electronics, Inc. All rights reserved.

YAGEO Corporation and its affiliates do not recommend the use of commercial, automotive, and/or COTS grade products for high reliability applications or manned space flight.