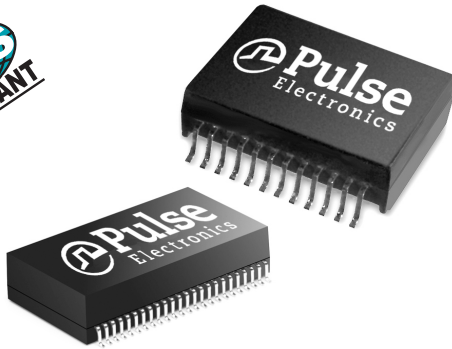
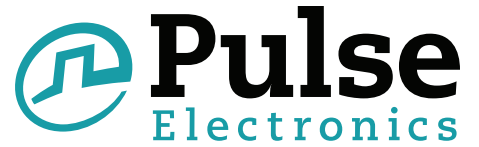


# 1000BASE-T MAGNETICS MODULE

Designed to Support 1:1 Turns Ratio Transceivers



- RoHS peak reflow temperature rating 245°C
- Meets IEEE 802.3 specification

## Electrical Specifications @ 25°C — Operating Temperature 0°C to 70°C

RoHS Compliant Part Number	Number of Ports	Insertion Loss (dB MAX)	Return Loss (dB MIN)					Differential to Common Mode Rejection (dB MIN)			Crosstalk (dB MIN)			Hipot (Vrms)
			1-100 MHz	1-30 MHz	40 MHz	50 MHz	60-80 MHz	100 MHz	30 MHz	60 MHz	100 MHz	30 MHz	60 MHz	
H5004NL <sup>3d</sup>	1	1	-18	-18	-16	-12	-10	-43	-37	-33	-43	-37	-33	1500
HX5004NL <sup>1,3d</sup>	1	1	-18	-18	-16	-12	-10	-43	-37	-33	-43	-37	-33	1500
H5007NL <sup>3d</sup>	1	1	-18	-18	-16	-12	-10	-43	-37	-33	-43	-37	-33	1500
H5008NL <sup>3a</sup>	1	1	-18	-18	-16	-12	-10	-43	-37	-33	-43	-37	-33	1500
HX5008NL <sup>1,3a</sup>	1	1	-18	-18	-16	-12	-10	-43	-37	-33	-43	-37	-33	1500
H5009NL <sup>3a</sup>	1	1	-18	-18	-16	-12	-10	-43	-37	-33	-43	-37	-33	1500
H5012NL <sup>3a</sup>	2	1.4	-18	-16	-14.4	-12	-10	-45	-40	-35	-43.5	-37.5	-33	1500
H5014NL <sup>3a</sup>	2	1.4	-18	-16	-14.4	-12	-10	-45	-40	-35	-43.5	-37.5	-33	1500
HX5014NL <sup>1,3a</sup>	2	1.4	-18	-16	-14.4	-12	-10	-45	-40	-35	-43.5	-37.5	-33	1500
H5015NL <sup>3a</sup>	1	1	-18	-18	-16	-12	-10	-43	-37	-33	-43	-37	-33	1500
H5020NL <sup>3a</sup>	2	1	-18	-16	-14.4	-12	-10	-40	-35	-30	-40	-33	-28	1500
HX5020NL <sup>1,3a</sup>	2	1.4	-18	-16	-14.4	-12	-10	-40	-35	-30	-40	-33	-28	1500
H5089NL <sup>3a</sup>	2	1.4	-18	-16	-14.4	-12	-10	-45	-40	-35	-43.5	-37.5	-33	1500

1. HX = extended temperature version -40°C to +85°C

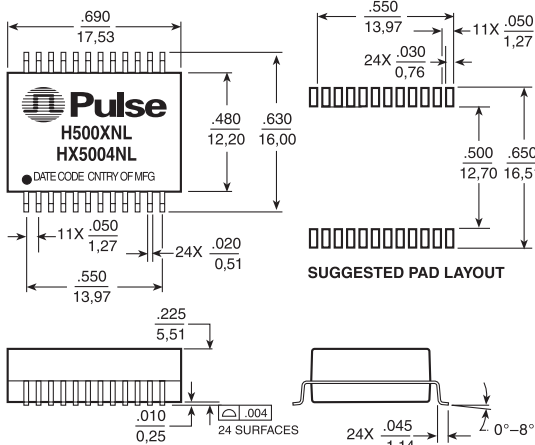
3. MSL = Moisture Sensitivity Level: a = 1, b = 2, c = 3, d = 4

2. For Tape & Reel packaging, add a "T" suffix at the end of the part number, e.g. H5007NLT.

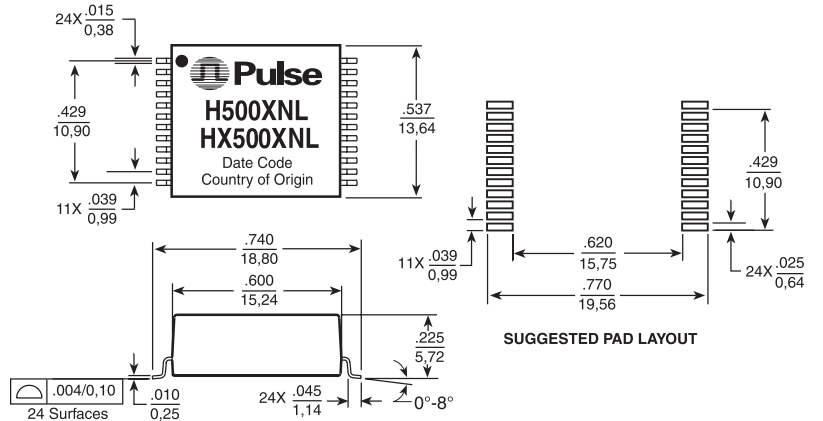
## Mechanicals

### H5004NL, HX5004NL\*, H5007NL\*

H5004NL, H5007NL, and HX5004NL are footprint-compatible to 10/100BASE-TX part H1267.



### H5008NL, H5009NL, HX5008NL, H5089NL

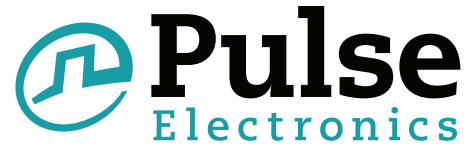


Dimensions:  $\frac{\text{Inches}}{\text{mm}}$   
Unless otherwise specified, all tolerances are  $\pm .010$  /  $0.25$

Weight . . . . . 1.6 grams  
Tape & Reel . . . . . 300  
Tube . . . . . 25

# 1000BASE-T MAGNETICS MODULE

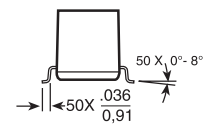
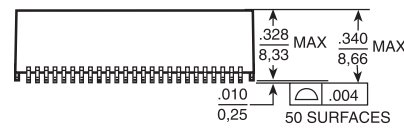
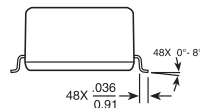
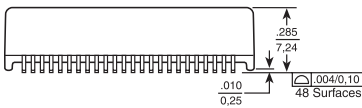
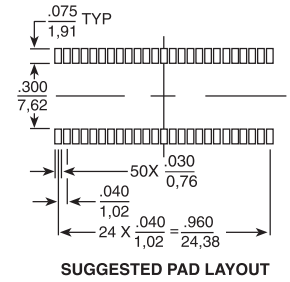
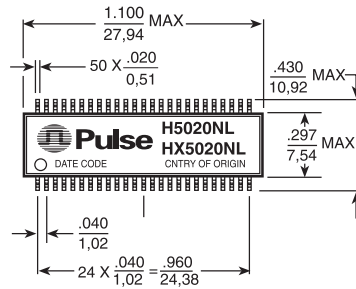
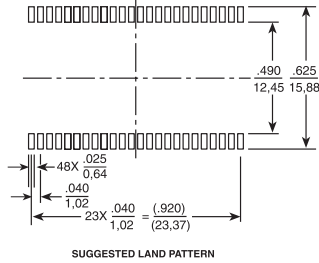
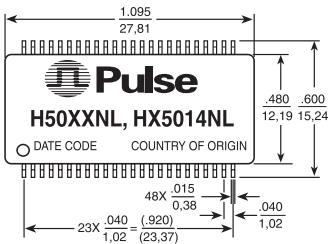
Designed to Support 1:1 Turns Ratio Transceivers



## Mechanicals (continued)

H5012NL, H5014NL, HX5014NL, H5089NL

H5020NL, HX5020NL

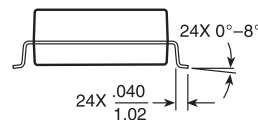
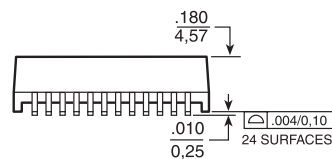
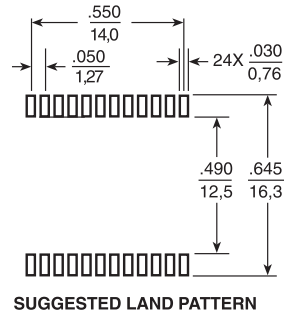
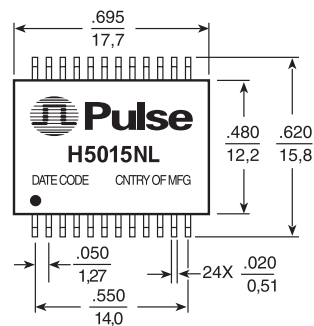


Weight ..... 4.0 grams  
Tape & Reel ..... 250/reel  
Tube ..... 15/tube

Dimensions: Inches \_\_\_\_\_  
mm \_\_\_\_\_  
Unless otherwise specified, all tolerances are  $\pm .005$  \_\_\_\_\_  
 $0,13$  \_\_\_\_\_

Weight ..... 1.6 grams  
Tape & Reel ..... 250/reel  
Tube ..... 15/tube

H5015NL

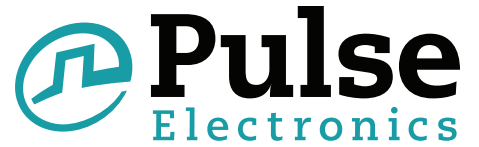


Weight ..... 1.5 grams  
Tape & Reel ..... 400/reel

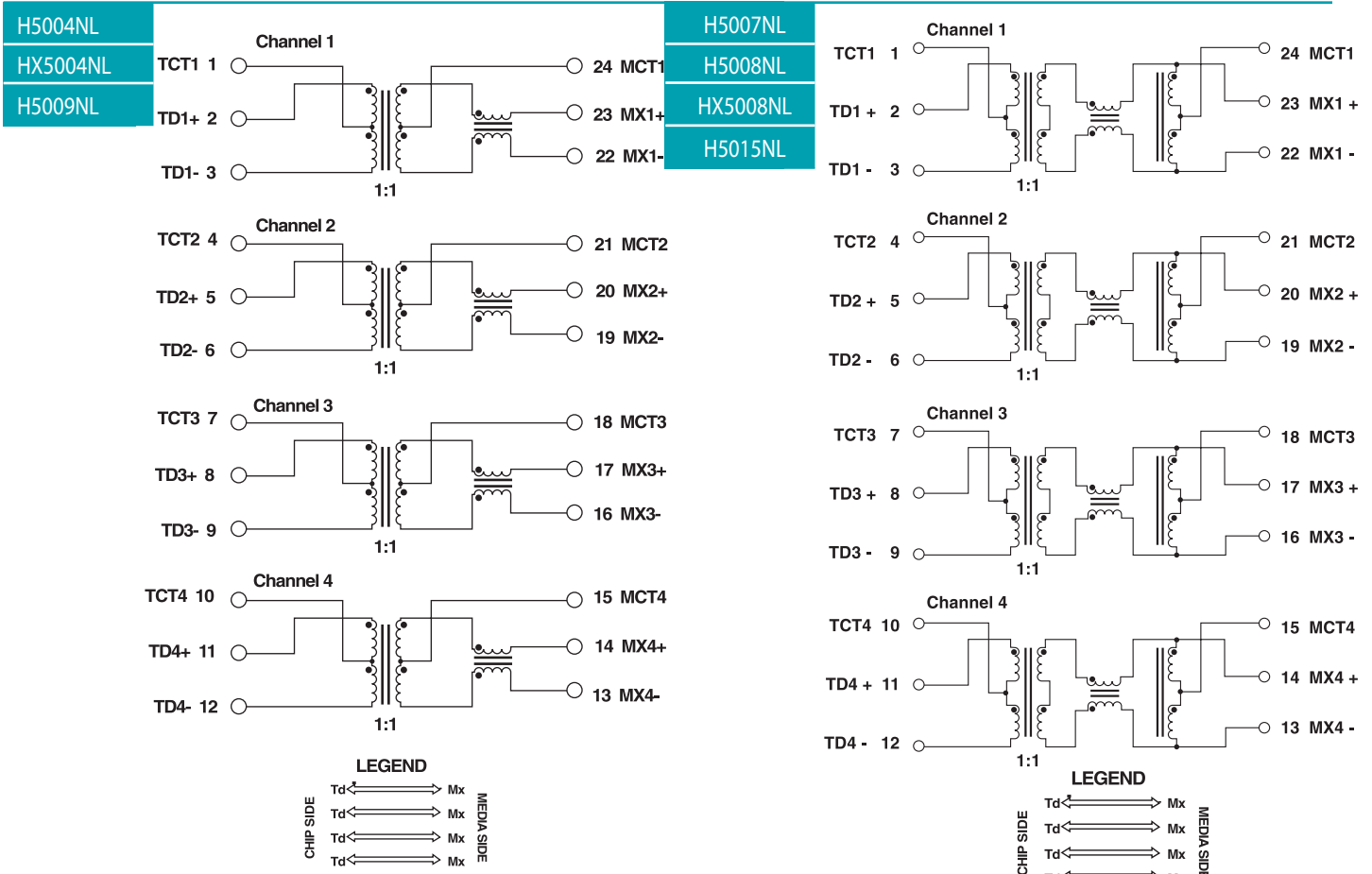
Dimensions: Inches \_\_\_\_\_  
mm \_\_\_\_\_  
Unless otherwise specified, all tolerances are  $\pm .005$  \_\_\_\_\_  
 $0,13$  \_\_\_\_\_

# 1000BASE-T MAGNETICS MODULE

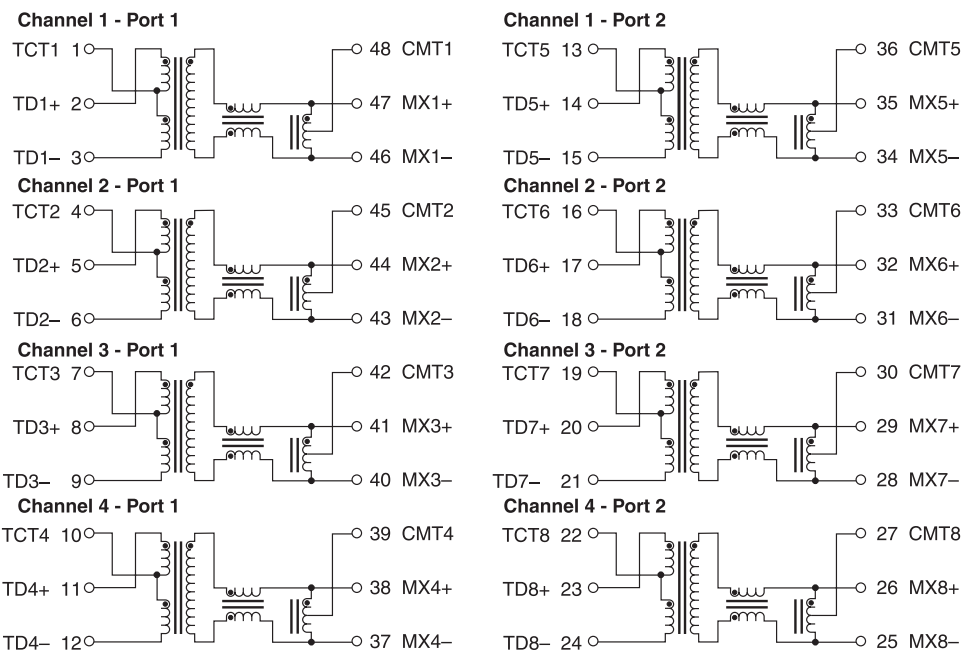
Designed to Support 1:1 Turns Ratio Transceivers



## Schematics



### H5012NL, H5089NL



# 1000BASE-T MAGNETICS MODULE

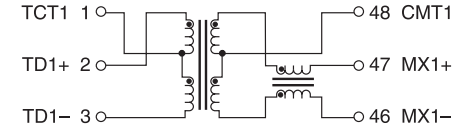
Designed to Support 1:1 Turns Ratio Transceivers



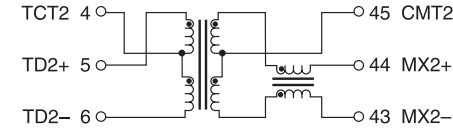
## Schematics (continued)

### H5014NL, HX5014NL

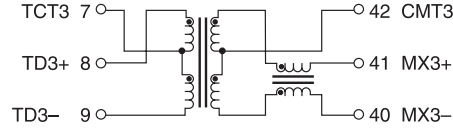
#### Channel 1 - Port 1



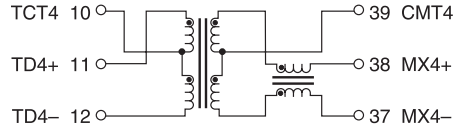
#### Channel 2 - Port 1



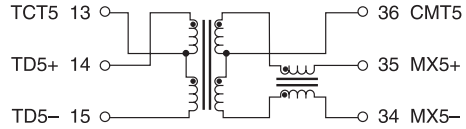
#### Channel 3 - Port 1



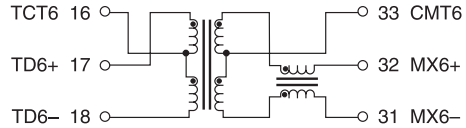
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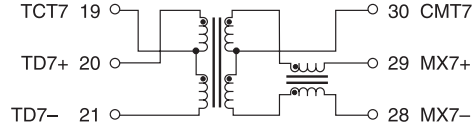
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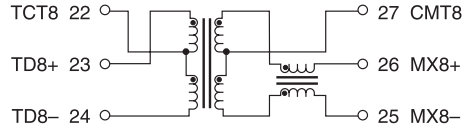
#### Channel 2 - Port 2



#### Channel 3 - Port 2

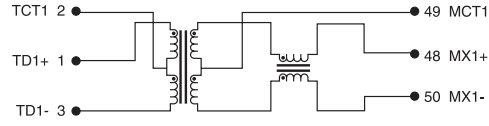


#### Channel 4 - Port 2

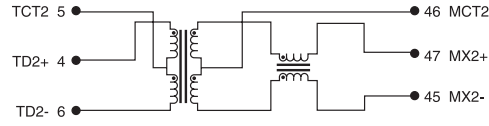


### H5020NL, HX5020NL

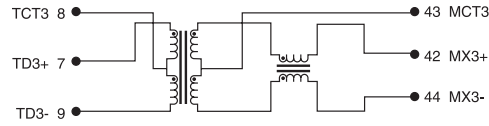
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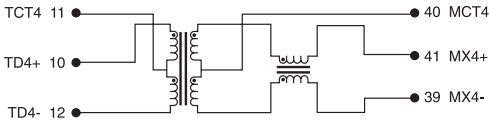
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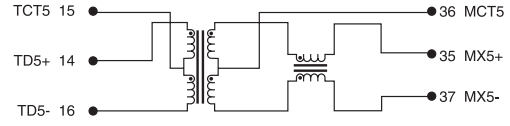
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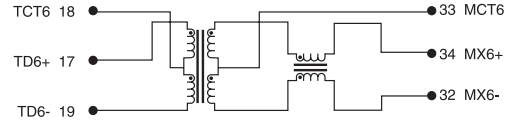
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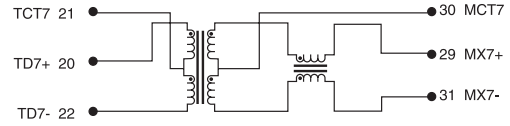
#### Channel 1 - Port 2



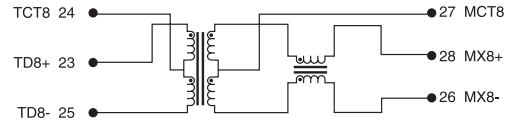
#### Channel 2 - Port 2



#### Channel 3 - Port 2



#### Channel 4 - Port 2



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