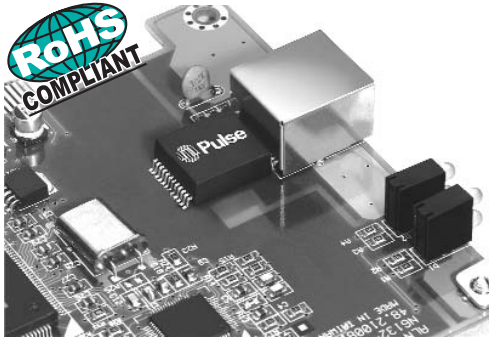





# 1000BASE-T MAGNETICS MODULES

Designed to Support 1:1  
Turns Ratio Transceivers



-  RoHS-5 peak reflow temperature rating 235°C
-  RoHS-6 peak reflow temperature rating 245°C
-  Meets IEEE 802.3 specification

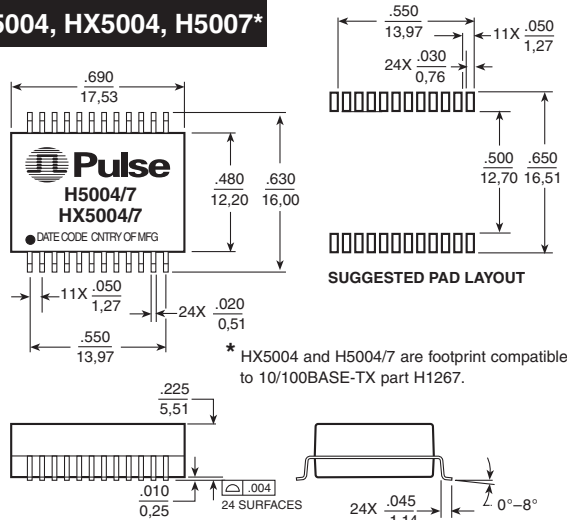
## Electrical Specifications @ 25°C — Operating Temperature 0°C to 70°C

RoHS-5 <sup>4</sup> Compliant Part Number	RoHS-6 <sup>5</sup> 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 (V <sub>RMS</sub> MIN)
				1-100MHz	1-30MHz	40MHz	50MHz	60-80MHz	100MHz	30MHz	60MHz	100MHz	30MHz	60MHz	
H5004 <sup>3c</sup>	H5004NL <sup>3d</sup>	1	1	-18	-18	-16	-12	-10	-43	-37	-33	-43	-37	-33	1500
HX5004 <sup>1,3c</sup>	HX5004NL <sup>1,3d</sup>	1	1	-18	-18	-16	-12	-10	-43	-37	-33	-43	-37	-33	1500
H5007 <sup>3c</sup>	H5007NL <sup>3d</sup>	1	1	-18	-18	-16	-12	-10	-43	-37	-33	-43	-37	-33	1500
H5008 <sup>3a</sup>	H5008NL <sup>3a</sup>	1	1	-18	-18	-16	-12	-10	-43	-37	-33	-43	-37	-33	1500
HX5008 <sup>1,3a</sup>	HX5008NL <sup>1,3a</sup>	1	1	-18	-18	-16	-12	-10	-43	-37	-33	-43	-37	-33	1500
H5009 <sup>3a</sup>	H5009NL <sup>3a</sup>	1	1	-18	-18	-16	-12	-10	-43	-37	-33	-43	-37	-33	1500
H5012 <sup>3a</sup>	H5012NL <sup>3a</sup>	2	1.4	-16	-14.4	-13.1	-12	-10	-45	-40	-35	-43.5	-37.5	-33	1500
H5014 <sup>3a</sup>	H5014NL <sup>3a</sup>	2	1.4	-16	-14.4	-13.1	-12	-10	-45	-40	-35	-43.5	-37.5	-33	1500
HX5014 <sup>1,3a</sup>	HX5014NL <sup>1,3a</sup>	2	1.4	-16	-14.4	-13.1	-12	-10	-45	-40	-35	-43.5	-37.5	-33	1500
H5015 <sup>3a</sup>	H5015NL <sup>3a</sup>	1	1	-18	-18	-16	-12	-10	-43	-37	-33	-43	-37	-33	1500
H5020 <sup>3a</sup>	H5020NL <sup>3a</sup>	2	1	-18	-14.4	-13.1	-12	-10	-40	-35	-30	-40	-33	-28	1500
HX5020 <sup>1,3a</sup>	HX5020NL <sup>1,3a</sup>	2	1	-18	-14.4	-13.1	-12	-10	-40	-35	-30	-40	-33	-28	1500
H5089 <sup>3a</sup>	H5089NL <sup>3a</sup>	2	1.4	-16	-14.4	-13.1	-12	-10	-45	-40	-35	-43.5	-37.5	-33	1500

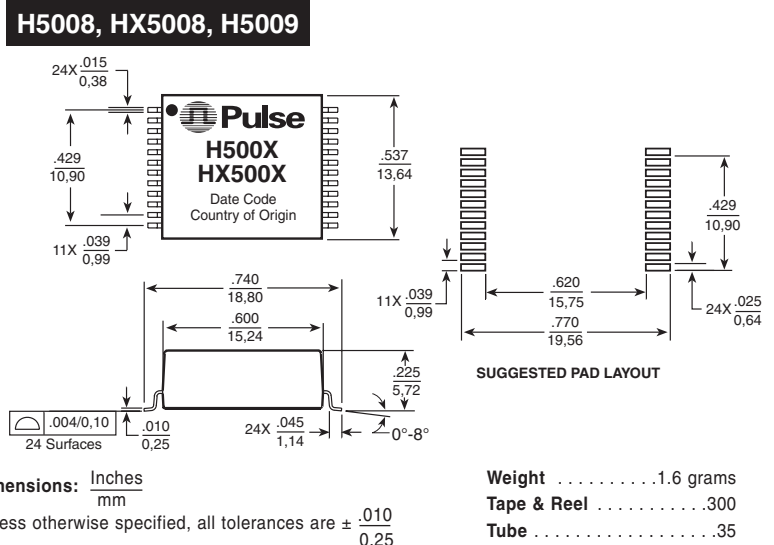
- HX:** Extended temperature version -40°C to +85°C
- For Tape & Reel packaging, add a "T" suffix at the end of the part number, e.g. H5007T.
- MSL=Moisture Sensitivity Level: a=1 b=2 c=3 d=4
- RoHS-5:** Product does not contain 5 out of the 6 banned substances specified in the RoHS directive (product contains lead in applications considered solder).
- RoHS-6:** Product does not contain 5 out of the 6 banned substances specified in the RoHS directive. Some internal connections may contain lead in high-temperature solder (solder alloys containing more than 85% lead)

## Mechanicals

### H5004, HX5004, H5007\*



### H5008, HX5008, H5009



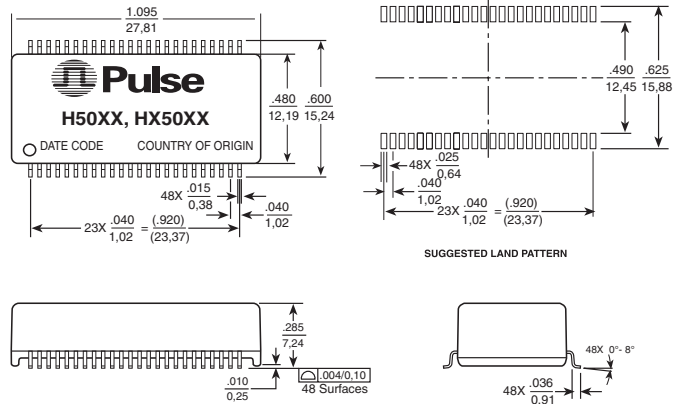
# 1000BASE-T MAGNETICS MODULES

Designed to Support 1:1  
Turns Ratio Transceivers



## Mechanicals (continued)

### H5012, H5014, HX5014, H5089

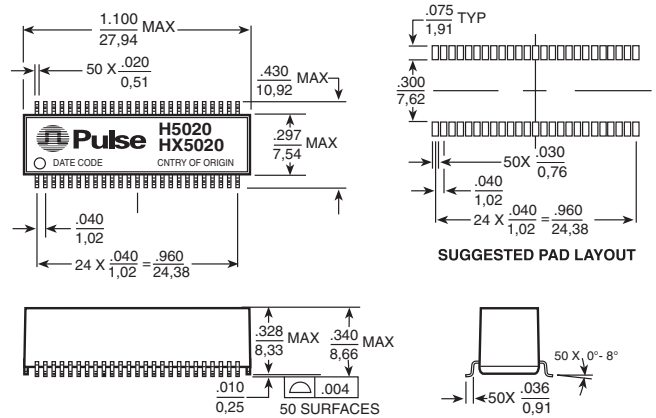


Weight ..... 4.0 grams  
Tape & Reel ..... .250/reel  
Tube ..... .15/tube

Dimensions:  $\frac{\text{Inches}}{\text{mm}}$

Unless otherwise specified, all tolerances are  $\pm \frac{.010}{0,25}$

### H5020, HX5020

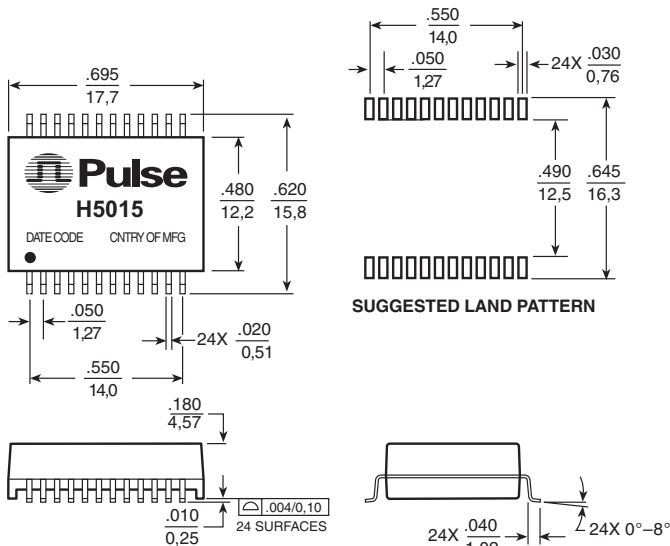


Weight ..... 1.6 grams  
Tape & Reel ..... .250/reel  
Tube ..... .15/tube

## Mechanicals (continued)

## Schematics

### H5015

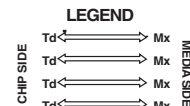
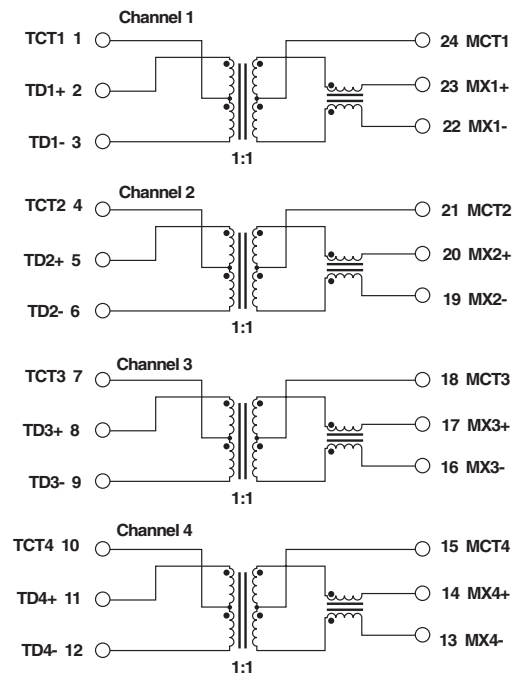


Weight ..... 1.5 grams  
Tape & Reel ..... .400/reel

Dimensions:  $\frac{\text{Inches}}{\text{mm}}$

Unless otherwise specified, all tolerances are  $\pm \frac{.005}{0,13}$

### H5004, HX5004, H5009



# 1000BASE-T MAGNETICS MODULES

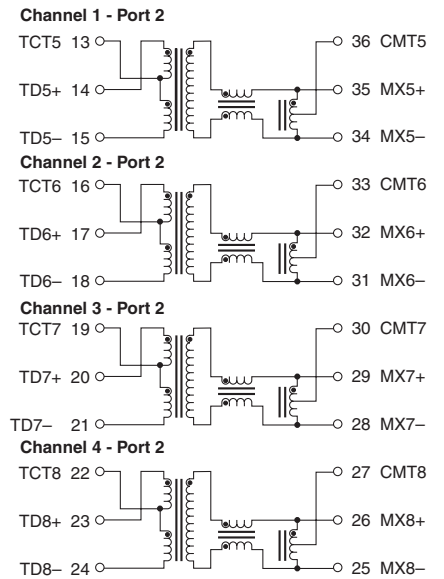
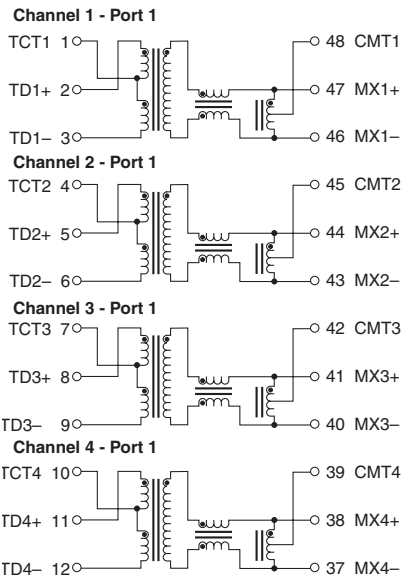
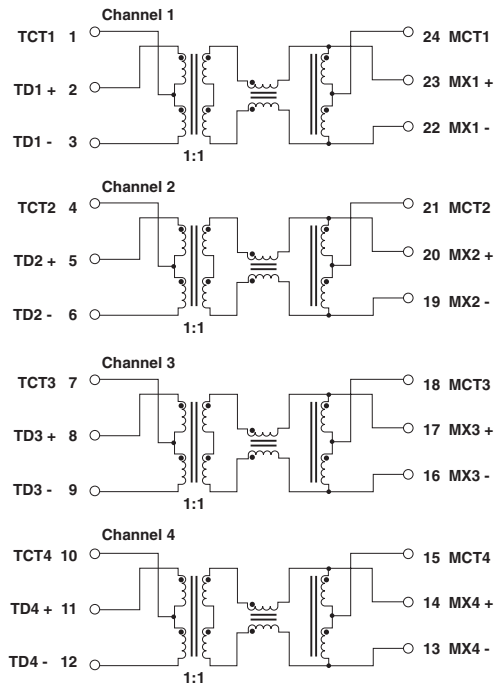
Designed to Support 1:1  
Turns Ratio Transceivers



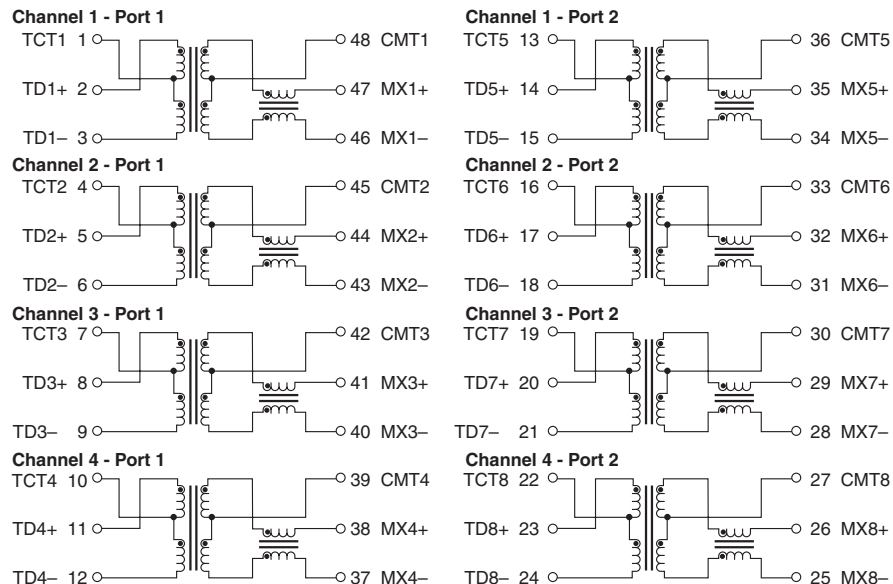
## Schematics (continued)

### H5007\*, H5008, HX5008, H5015

### H5012, H5089



### H5014, HX5014



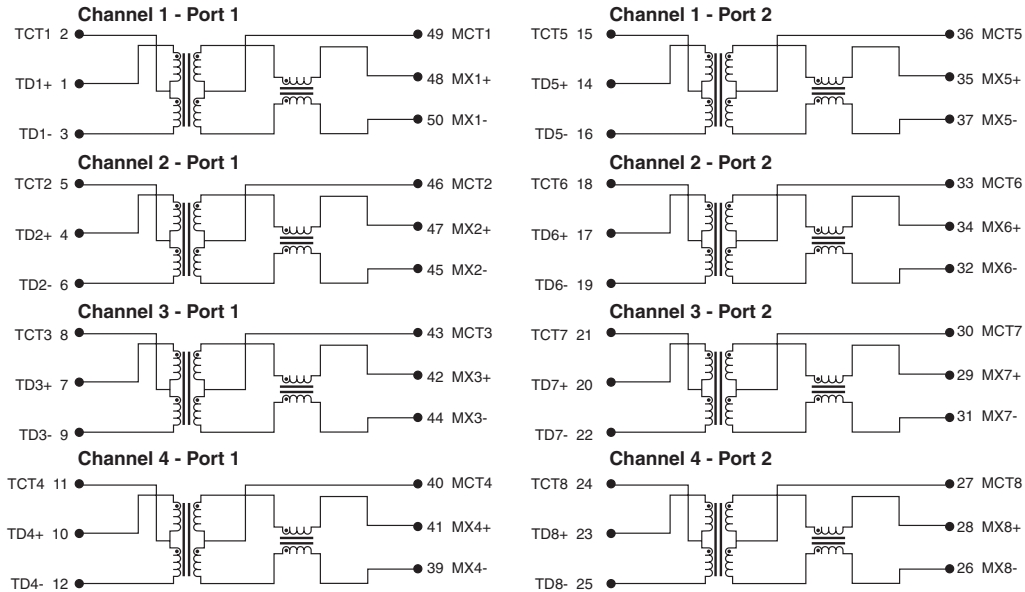
# 1000BASE-T MAGNETICS MODULES

Designed to Support 1:1  
Turns Ratio Transceivers



## Schematics (continued)

### H5020, HX5020



### For More Information:

**Pulse Worldwide Headquarters**  
12220 World Trade Dr.  
San Diego, CA 92128  
U.S.A.

**Pulse Europe**  
Einsteinstrasse 1  
D-71083 Herrenberg  
Germany

**Pulse China Headquarters**  
B402, Shenzhen Academy of  
Aerospace Technology Bldg.  
10th Kejinan Rd.  
High-Tech Zone  
Nanshan District  
Shenzhen, PR China 518057  
TEL: 86 755 33966678  
FAX: 86 755 33966700

**Pulse North China**  
Room 1503  
XinYin Building  
No. 888 YiShan Rd.  
Shanghai 200233  
China

**Pulse South Asia**  
150 Kampong Ampat  
#07-01/02  
KA Centre  
Singapore 368324

**Pulse North Asia**  
No. 26, Kao Ching Rd.  
Yang Mei Chen  
Taoyuan Hsien  
Taiwan  
R. O. C.

[www.pulseeng.com](http://www.pulseeng.com)

Tel: 858 674 8100  
Fax: 858 674 8262

Tel: 49 7032 7806 0  
Fax: 49 7032 7806 135

Tel: 86 21 54643211/2  
Fax: 86 21 54643210

Tel: 65 6287 8998  
Fax: 65 6280 0080

Tel: 886 3 4643715  
Fax: 886 3 4641911

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, 2008. Pulse Engineering, Inc. All rights reserved.