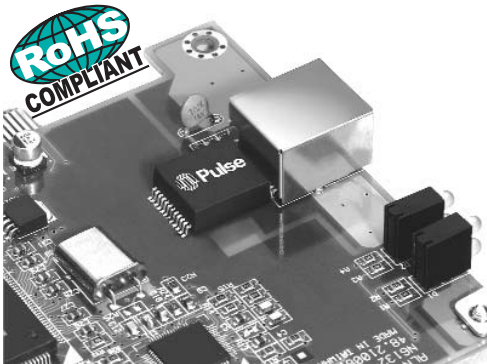


1000BASE-T MAGNETICS MODULES

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

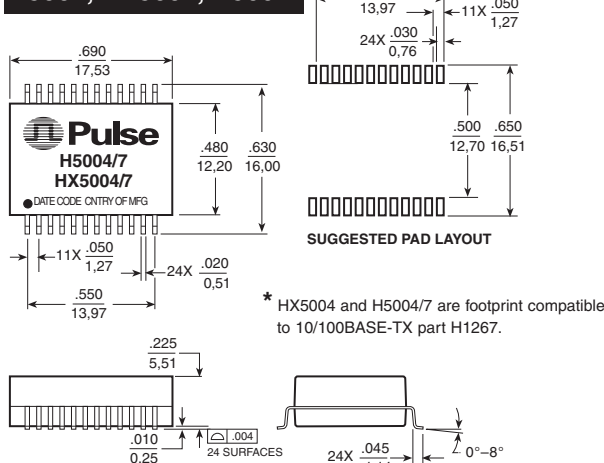
Electrical Specifications @ 25°C — Operating Temperature 0°C to 70°C

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

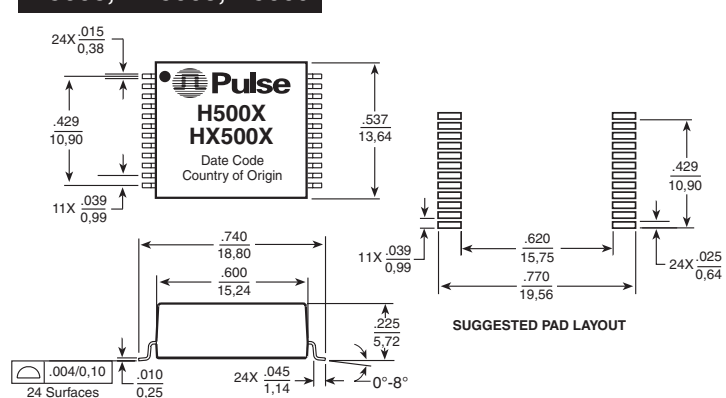
- HX: Extended temperature version -40°C to +85°C
- For Tape & Reel packaging, add a "T" suffix at the end of the part number, e.g. H5007T.
- MSL=Moisture Sensitivity Level: a=1 b=2 c=3 d=4
- RoHS-5: Product does not contain 5 out of the 6 banned substances specified in the RoHS directive (product contains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

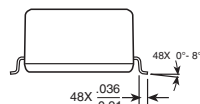
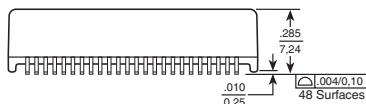
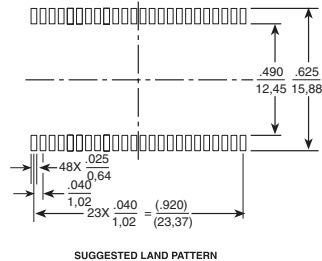


H5008, HX5008, H5009



Weight1.6 grams
Tape & Reel300
Tube35

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[illegible]

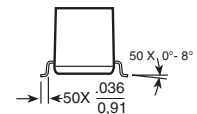
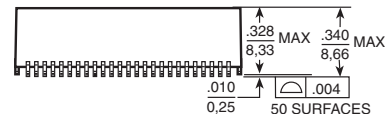
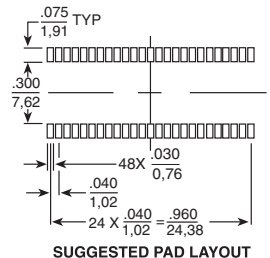
Weight 4.0 grams
Tape & Reel 250/reel
Tube 15/tube

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

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

Mechanical drawing of the H5020 HX5020 component showing dimensions in inches and millimeters:

- Overall length: 1.100" MAX (27.94 mm)
- Pin pitch: 48 X .020" (0.51 mm)
- Pin length: .430" MAX (10.92 mm)
- Pin diameter: .297" MAX (7.54 mm)
- Pin spacing: .040" (1.02 mm)
- Pin width: 24 X .040" (1.02 mm)
- Pin width: .960" (24.38 mm)

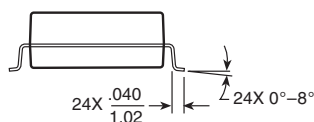
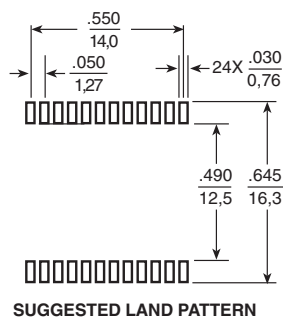


Weight1.6 grams
Tape & Reel250/reel
Tube15/tube

Schematics

The drawing shows the H5015 component with the following dimensions:

- Top View Dimensions:**
 - Overall width: $.695$ (17,7)
 - Pin pitch (left): $.050$ (1,27)
 - Pin pitch (right): $.020$ (0,51)
 - Pin width (left): $.480$ (12,2)
 - Pin width (right): $.620$ (15,8)
 - Pin width (bottom): $.180$ (4,57)
 - Pin width (bottom right): $.010$ (0,25)
- Side View Dimensions:**
 - Overall height: $.004/0,10$ (24 SURFACES)
- Component Markings:**
 - Logo: Pulse
 - Part Number: H5015
 - DATE CODE
 - CNTRY OF MFG



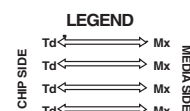
Weight 1.5 grams
Tape & Reel 400/reel

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

mm
Unless otherwise specified, all tolerances are $\pm \frac{.005}{0.13}$

The diagram shows four channels of a transformer, each with a 1:1 turns ratio. The primary windings are connected in a series-aiding configuration, and the secondary windings are also connected in a series-aiding configuration. The output terminals are labeled as follows:

- Channel 1:** TCT1 1, TD1+ 2, TD1- 3, 24 MCT1, 23 MX1+, 22 MX1-
- Channel 2:** TCT2 4, TD2+ 5, TD2- 6, 21 MCT2, 20 MX2+, 19 MX2-
- Channel 3:** TCT3 7, TD3+ 8, TD3- 9, 18 MCT3, 17 MX3+, 16 MX3-
- Channel 4:** TCT4 10, TD4+ 11, TD4- 12, 15 MCT4, 14 MX4+, 13 MX4-



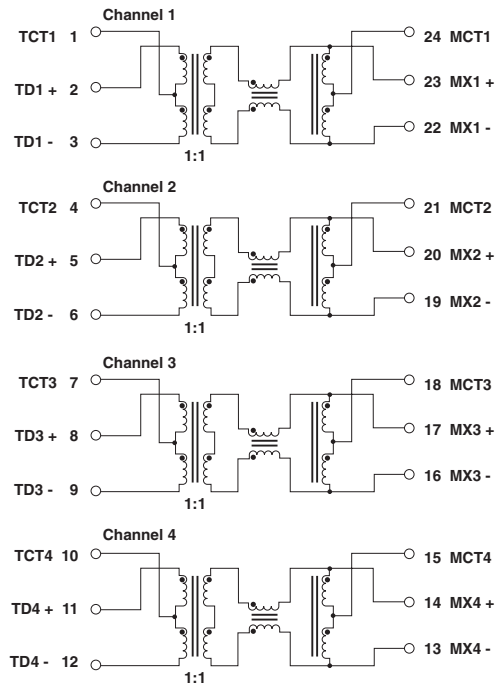
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Turns Ratio Transceivers

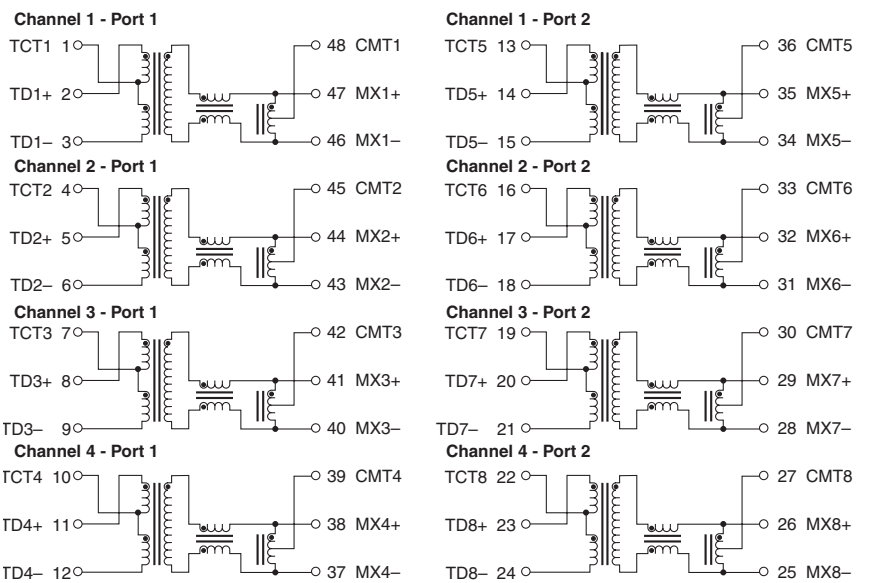


Schematics (continued)

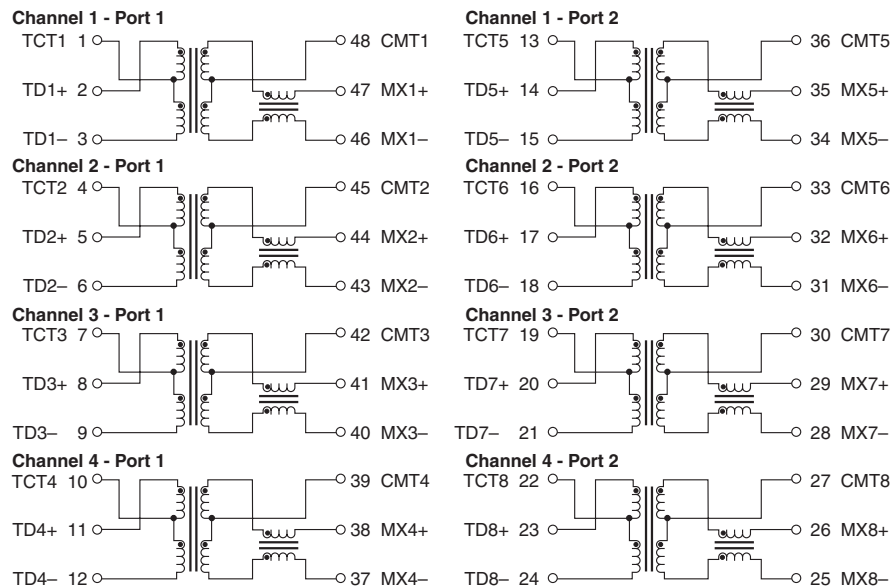
H5007*, H5008, HX5008, H5015



H5012 *



H5014, HX5014



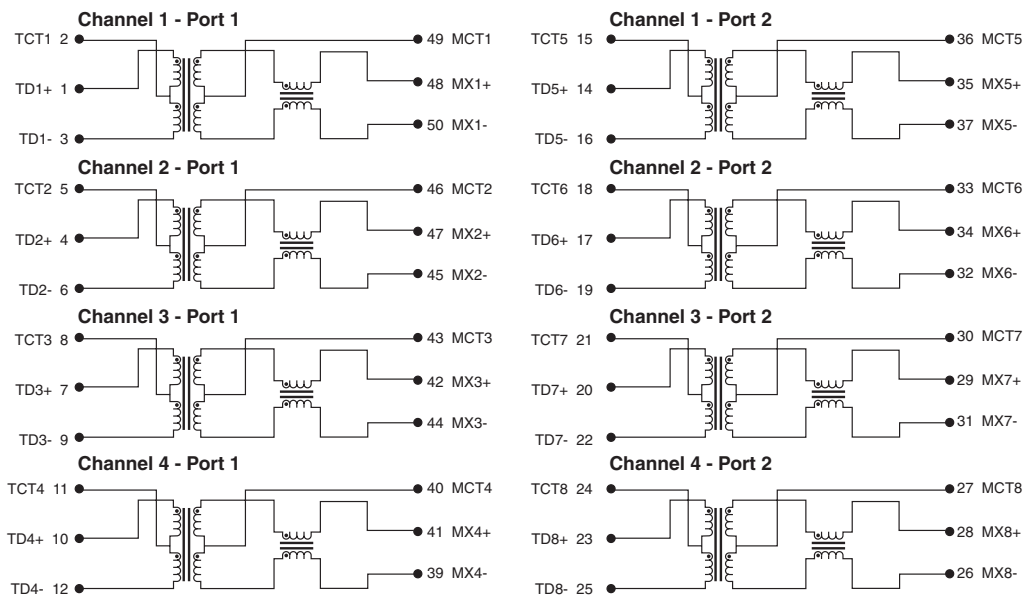
1000BASE-T MAGNETICS MODULES

Designed to Support 1:1
Turns Ratio Transceivers



Schematics (*continued*)

H5020, HX5020



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