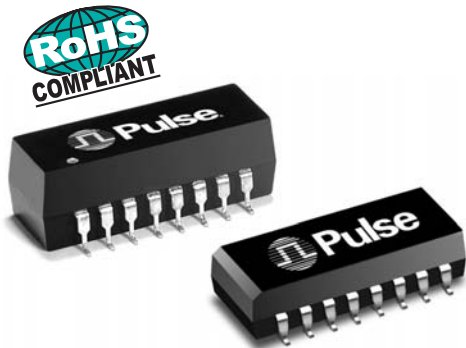







10/100 BASE-T SINGLE PORT TRANSFORMER MODULES

With 1:1 Transmit Turns Ratios



-  For RoHS part add suffix **NL**⁷
-  RoHS “**NL**” peak solder rating 260°C, non-RoHS peak solder rating 235°C
-  Compatible with Broadcom, Intel, Micrel, National Semiconductor, ICS, and TDK Transceivers
-  Meets IEEE 802.3 specification
-  Patented InterlockBase construction for high reliability

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

Part # Number	RoHS ⁷	Insertion Loss (dB MAX)	Return Loss (dB MIN @ 100 Ω)					Differential to Common Mode Rejection (dB MIN)			Crosstalk (dB TYP)			Hipot (Vrms MIN)
			0.1-100 MHz	1-30 MHz	40 MHz	50 MHz	60-80 MHz	30 MHz	60 MHz	100 MHz	30 MHz	60 MHz	100 MHz	
H1012	NL ^{6c}	-1.0	-20	-20	-18	-14	-42	-36	-33	-50	-40	-40	1500	
H1019	NL ^{6c}	-1.0	-20	-18	-18	-14	-45	-40	-35	-45	-40	-35	1500	
H1042	5, 6 ^c	-1.0	-16	-13.5	-11.5	-10	-45	-40	-35	-40	-38	-35	1500	
H1086 ¹	5, 6 ^c	-1.0	-22	-20	-18	-12	-45	-40	-35	-50	-40	-40	1500	
H1089	5, 6 ^c	-1.0	-22	-20	-18	-12	-42	-38	-32	-50	-40	-40	1500	
H1117	5, 6 ^c	-1.0	-22	-20	-18	-12	-45	-40	-35	-50	-40	-40	1500	
H1138	NL ^{6a}	-0.8	-18	-16	-14	-12	42	-37	-33	-50	-40	-40	1500	
HX1148 ²	NL ^{6c}	-1.5	-18	-13.5	-11.5	-10	-42	-37	-33	-50	-40	-40	1500	
HX1178 ³	5, 6 ^c	-1.5	-18	-13.5	-11.5	-10	-42	-37	-33	-50	-40	-40	1500	
PE-68515L	5, 6 ^c	-1.0	-18	-18	-16	-12	-50	-45	-40	-55	-50	-50	1500	
PE-68517L	5, 6 ^c	-1.0	-18	-16	-15	-12	-45	-40	-35	-50	-40	-40	1500	
H1338	5, 6 ^a	-1.1	-18	-16	-14	-12	-42	-37	-35	-40	-40	-35	1800	

1. Rise time optimized for National's DP83843.
2. Operating temperature: -40°+ 85°C.
3. Meets UL 1950 and UL 1459 3rd edition requirements.
4. For Tape & Reel packaging, add a “T” suffix to the end of the part number when ordering e.g. H1012T
5. Contact Pulse for RoHS compliant part availability.
6. MSL=Moisture Sensitivity Level: a=1, b=2, c=3, d=4.
7. Add suffix **NL** for RoHS compliant parts, e.g: H1012 changes to H1012**NL** or H1012**NLT** (for Tape & Reel).

U.S. Patent No. 5,015,981

10/100 BASE-T SINGLE PORT TRANSFORMER MODULES

With 1:1 Transmit Turns Ratios

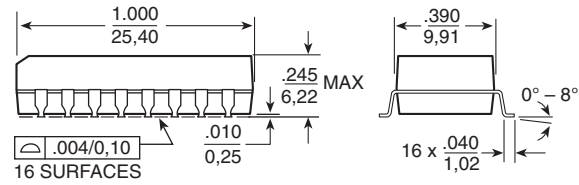
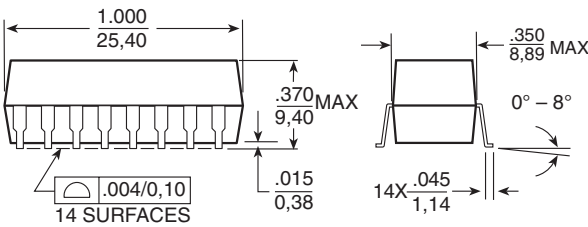
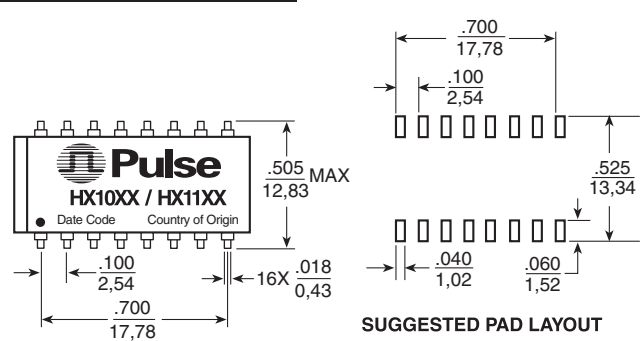
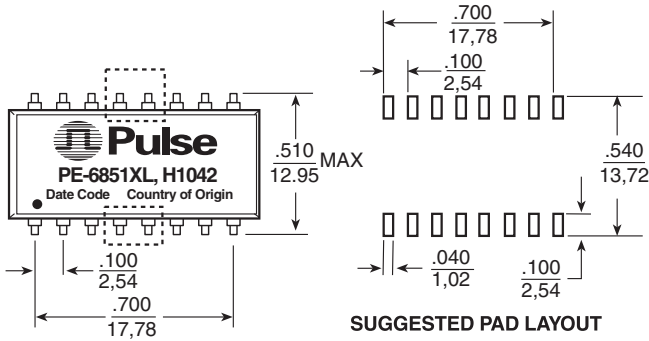


Mechanicals

PE-68515L, PE-68517L, H1042

H1012, H1019, H1086, H1089, H1117,

H1138, HX1148, HX1178



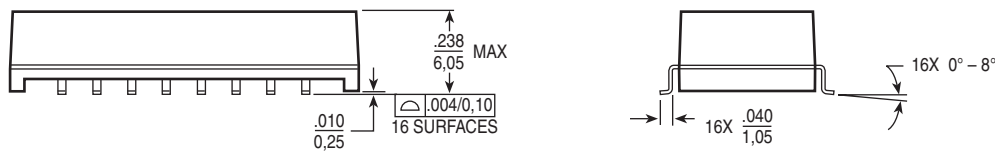
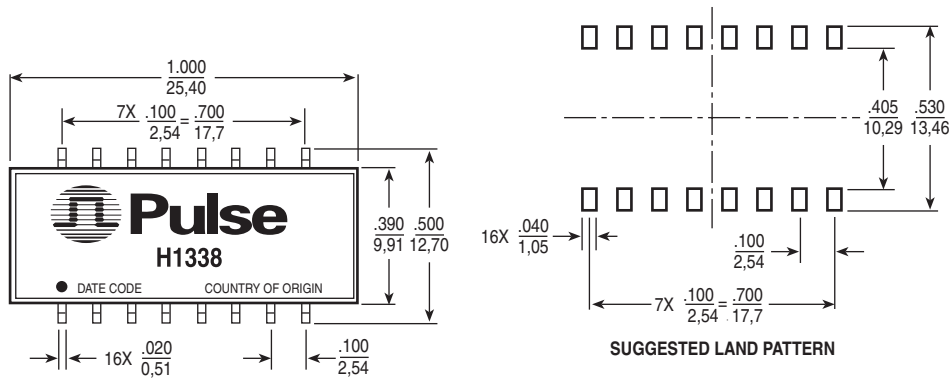
NOTE: The PE-68515L pins 4 and 13 are removed.
The PE-68517L pins 5 and 12 are removed.

Weight 3.5 grams
Tube20/tube
Tape & Reel160/reel

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

Weight 3.0 grams
Tube20/tube
Tape & Reel300/reel

H1338



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

Weight 3.0 grams
Tube20/tube
Tape & Reel300/reel

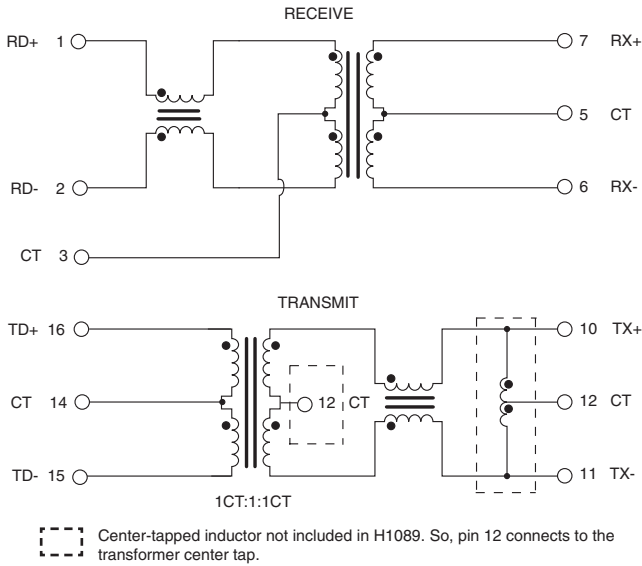
10/100 BASE-T SINGLE PORT TRANSFORMER MODULES

With 1:1 Transmit Turns Ratios

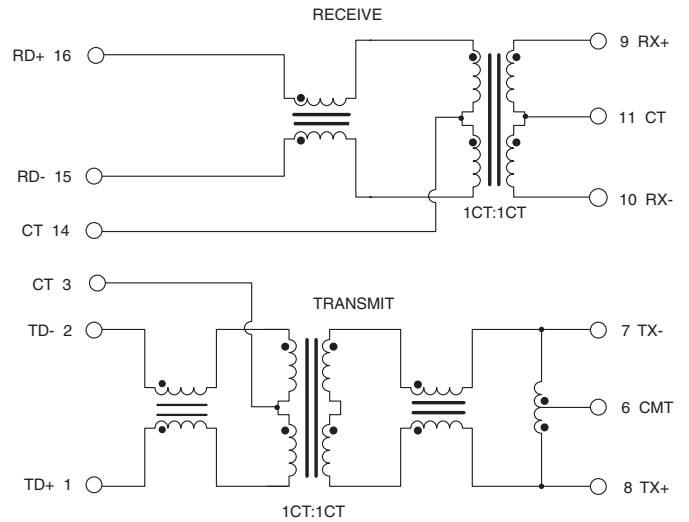


Schematics

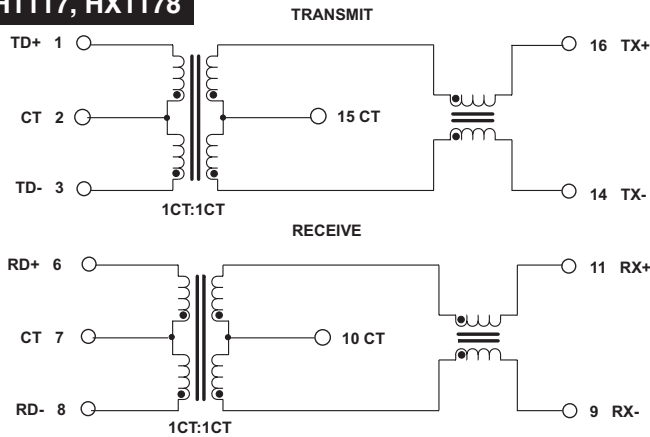
PE-68515L, H1012, H1086, H1089, HX1148, H1138



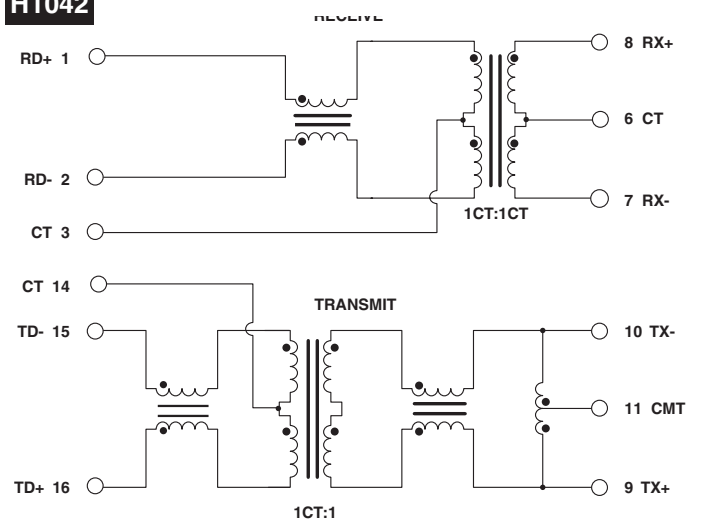
PE-68517L, H1019



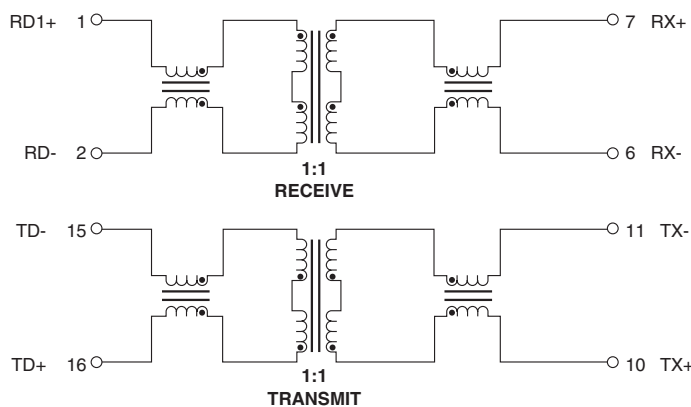
H1117, HX1178



H1042



H1338



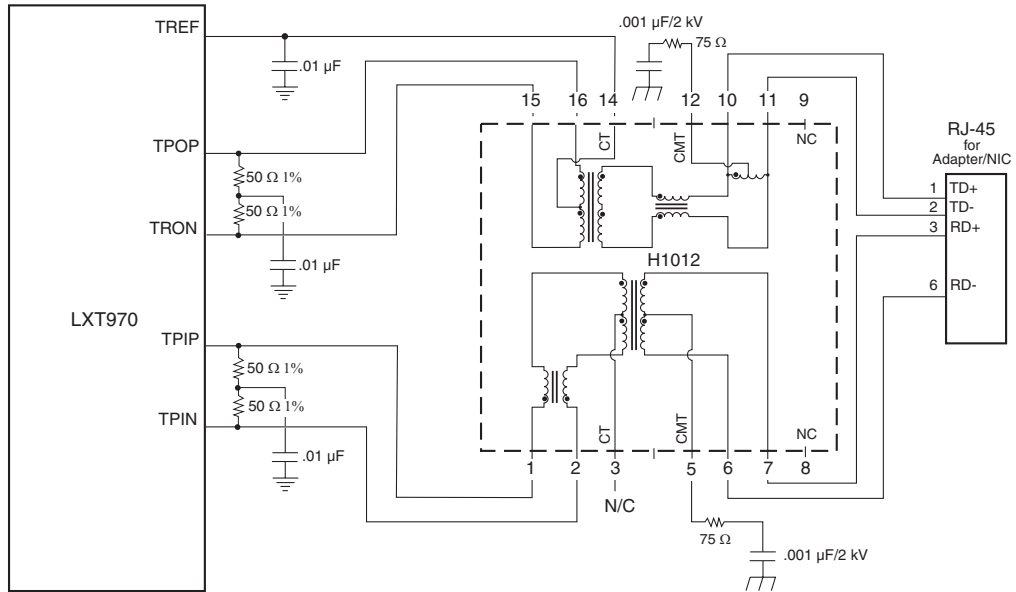
10/100 BASE-T SINGLE PORT TRANSFORMER MODULES

With 1:1 Transmit Turns Ratios

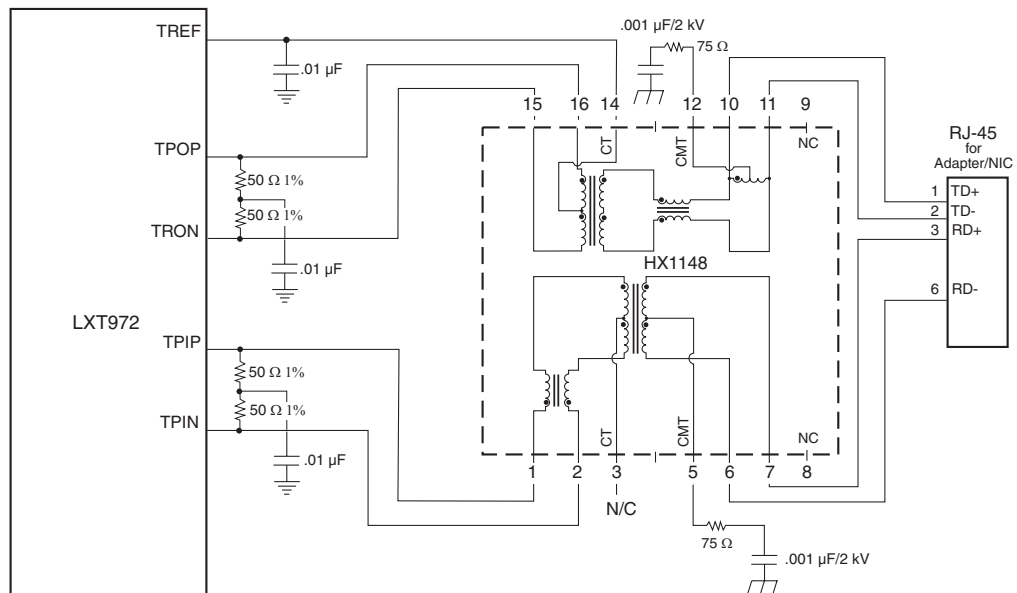


Typical Application Circuits

H1012, H1138



HX1148



10/100 BASE-T SINGLE PORT TRANSFORMER MODULES

With 1:1 Transmit Turns Ratios



Application Notes

This line of 10/100Base-TX magnetics modules has been specifically designed for the implementation of a 10Base-T and 100Base-TX transmission over data grade unshielded twisted pair cable (UTP-5). The modules provide excellent EMI filtering and are suitable for adapter card and multipoint applications.

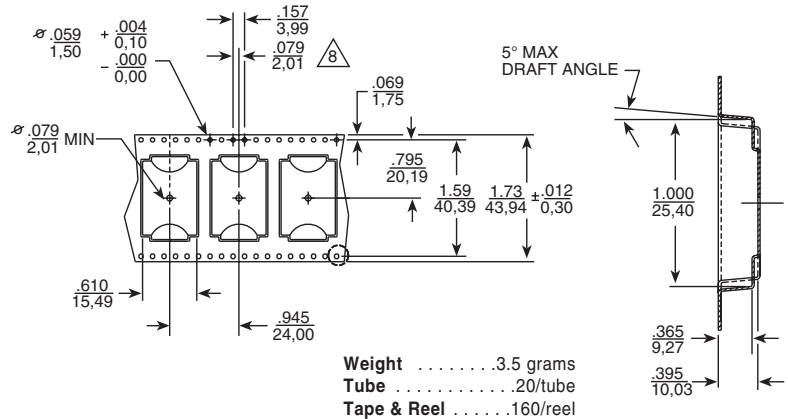
Pulse has worked closely with the leading IC manufacturers in providing these 10/100 solutions, thereby assuring compatibility with each transceiver. Additionally, each solution meets the stringent open circuit inductance requirements imposed by IEEE. When an 8 mA DC current is applied across the transformer windings, the transformer will provide at least 350 μ H. The transformers used in each module also provide 1500 Vrms minimum isolation, wide band width with minimal attenuation and fast rise times to minimize system level jitter. The H1086 provides a slower rise time for use with National's DP83843. The H1117 pin out is optimized for Kendin's KS8731 and KS8732. The HX1148 and HX1178 provide an extended temperature operating range (-40° to +85°C).

Surface mount devices manufactured by Pulse are designed to meet all published specifications after exposure to surface mount soldering temperatures. The SMT modules in this data sheet are transfer-molded in IC style packaging, making them robust enough to withstand convection and infrared reflow solder temperatures of up to 235°C. Additionally, compliant leads provide excellent solder-joint reliability with a coplanarity of ± 0.02 " (0,05 mm).

NOTE: Modules are packaged in tubes, unless Tape & Reel is specified. Please add the suffix "T" (such as H1012T) for Tape & Reel orders.

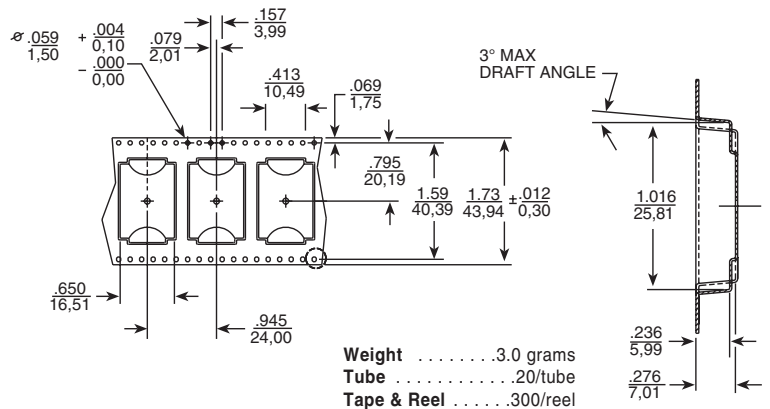
Tape & Reel Specifications

PE-68515L, PE-68517L, H1042



H1012, H1019, H1086, H1089, H1117,

H1138, H1338, HX1148, HX1178



For More Information :

UNITED STATES (Worldwide)	UNITED KINGDOM (Northern Europe)	FRANCE (Southern Europe)	SINGAPORE (Southern Asia)	TAIWAN, R.O.C. (Northern Asia)	HONG KONG (China/Hong Kong)	DISTRIBUTOR
12220 World Trade Drive San Diego, CA 92128 U.S.A. http://www.pulseeng.com TEL: 858 674 8100 FAX: 858 674 8262	3 Huxley Road Surrey Research Park Guildford, Surrey GU2 5RE United Kingdom TEL: 44 1483 401700 FAX: 44 1483 401701	Zone Industrielle F-39270 Orgelet France TEL: 33 3 84 35 04 04 FAX: 33 3 84 25 46 41	150 Kampong Ampat #07-01/02 KA Centre Singapore 368324 TEL: 65 6287 8998 FAX: 65 6280 0080	3F-4, No. 81, Sec. 1 HsinTai Wu Road Hsi-Chih, Taipei Hsien Taiwan, R.O.C. Tel: 886 2 2698 0228 FAX: 886 2 2698 0948	Unit 11, 11/F Wah Lai Industrial Centre 10-14 Kwei Tei Street, Fotan, Shatin, Hong Kong TEL: 852 2788 6588 FAX: 852 2776 1055	

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, 2005. Pulse Engineering, Inc. All rights reserved.