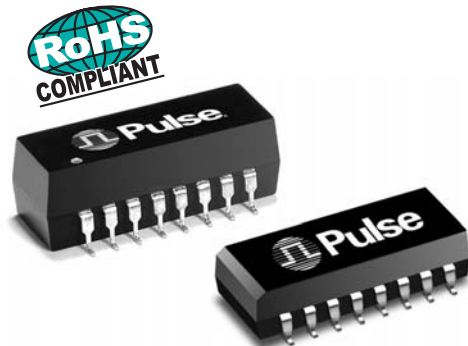


10/100 BASE-T SINGLE PORT TRANSFORMER MODULES

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 ⁴ 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, 6c}	-1.0	-16	-13.5	-11.5	-10	-45	-40	-35	-40	-38	-35	1500
H1086 ¹	^{5, 6c}	-1.0	-22	-20	-18	-12	-45	-40	-35	-50	-40	-40	1500
H1089	^{5, 6c}	-1.0	-22	-20	-18	-12	-42	-38	-32	-50	-40	-40	1500
H1117	^{5, 6c}	-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, 6c}	-1.5	-18	-13.5	-11.5	-10	-42	-37	-33	-50	-40	-40	1500
PE-68515L	^{5, 6c}	-1.0	-18	-18	-16	-12	-50	-45	-40	-55	-50	-50	1500
PE-68517L	^{5, 6c}	-1.0	-18	-16	-15	-12	-45	-40	-35	-50	-40	-40	1500
H1338	^{5, 6a}	-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

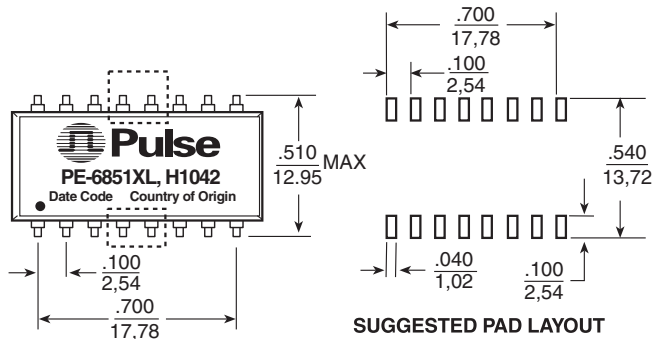
10/100 BASE-T SINGLE PORT TRANSFORMER MODULES

With 1:1 Transmit Turns Ratios



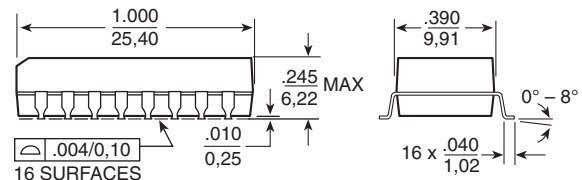
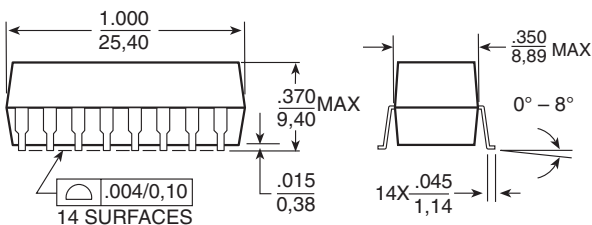
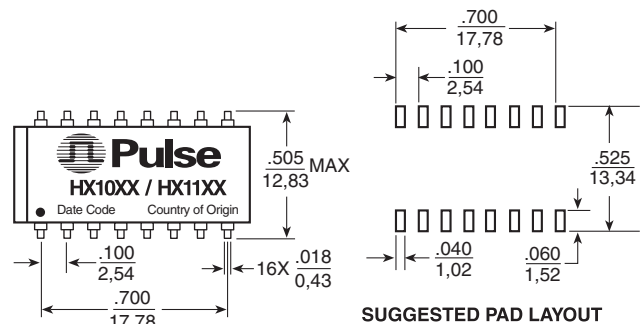
Mechanicals

PE-68515L, PE-68517L, H1042



H1012, H1019, H1086, H1089, H1117,

H1138, HX1148, HX1178

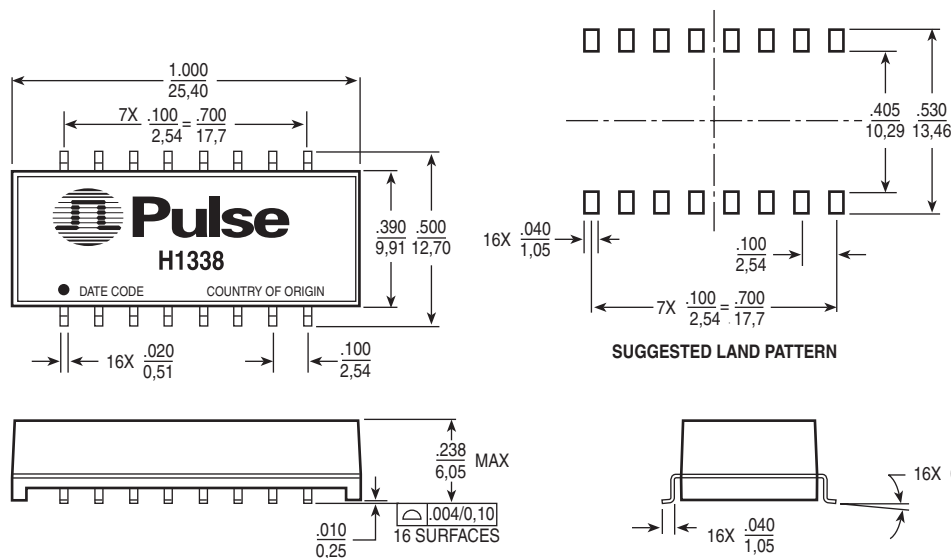


Weight 3.5 grams
Tube20/tube
Tape & Reel 160/reel

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

Weight 3.0 grams
Tube20/tube
Tape & Reel 300/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 & Reel 300/reel

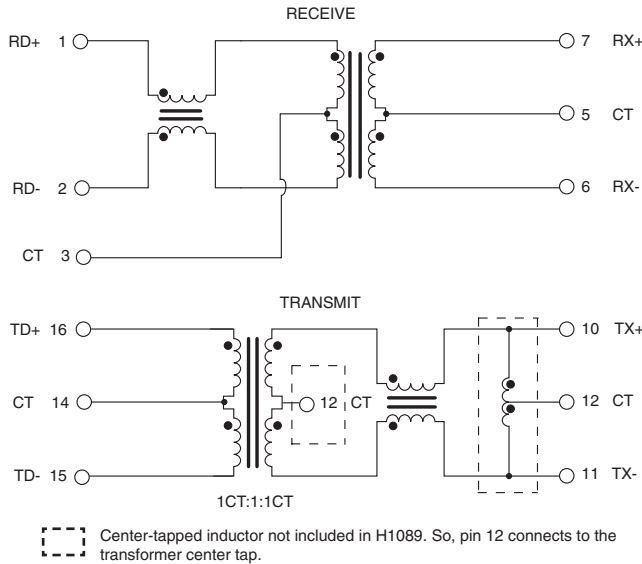
10/100 BASE-T SINGLE PORT TRANSFORMER MODULES

With 1:1 Transmit Turns Ratios

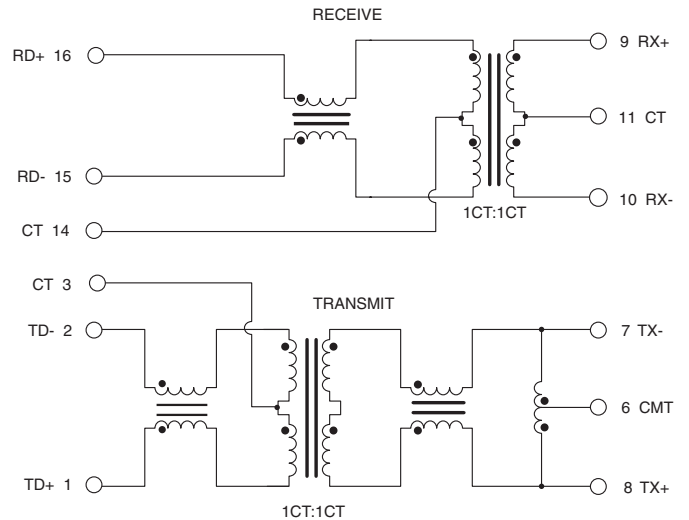


Schematics

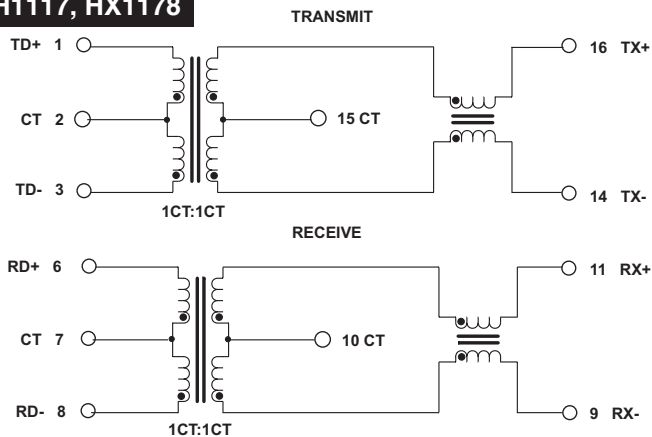
PE-68515L, H1012, H1086, H1089, HX1148, H1138



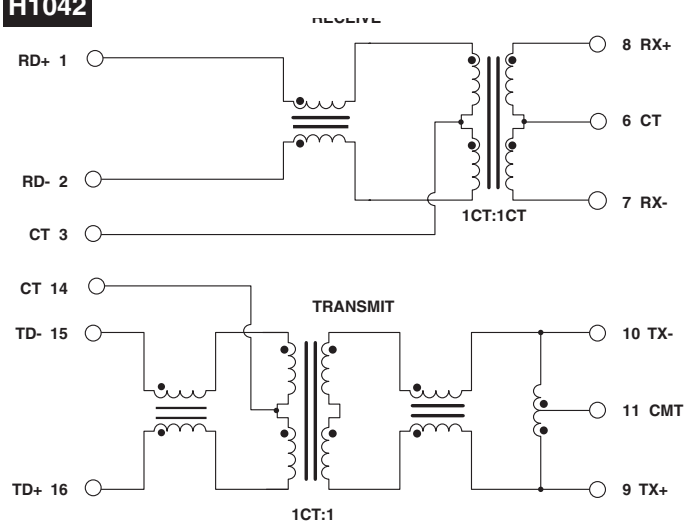
PE-68517L, H1019



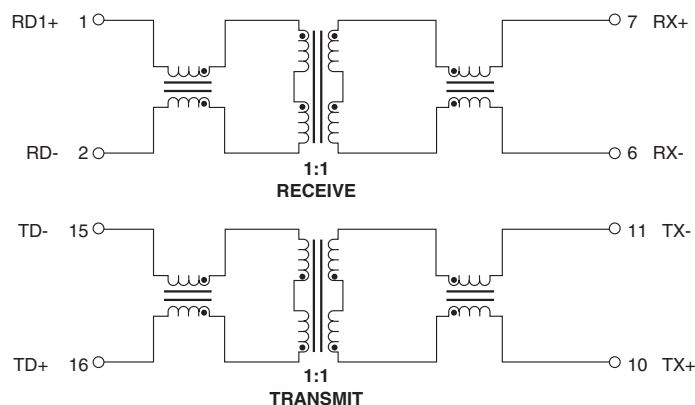
H1117, HX1178



H1042



H1338



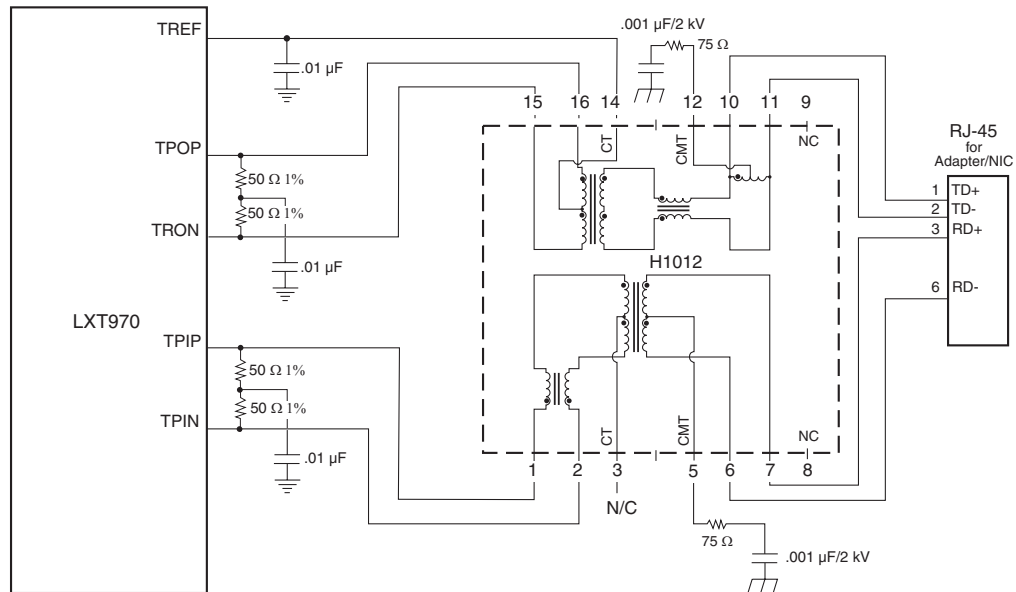
10/100 BASE-T SINGLE PORT TRANSFORMER MODULES

With 1:1 Transmit Turns Ratios

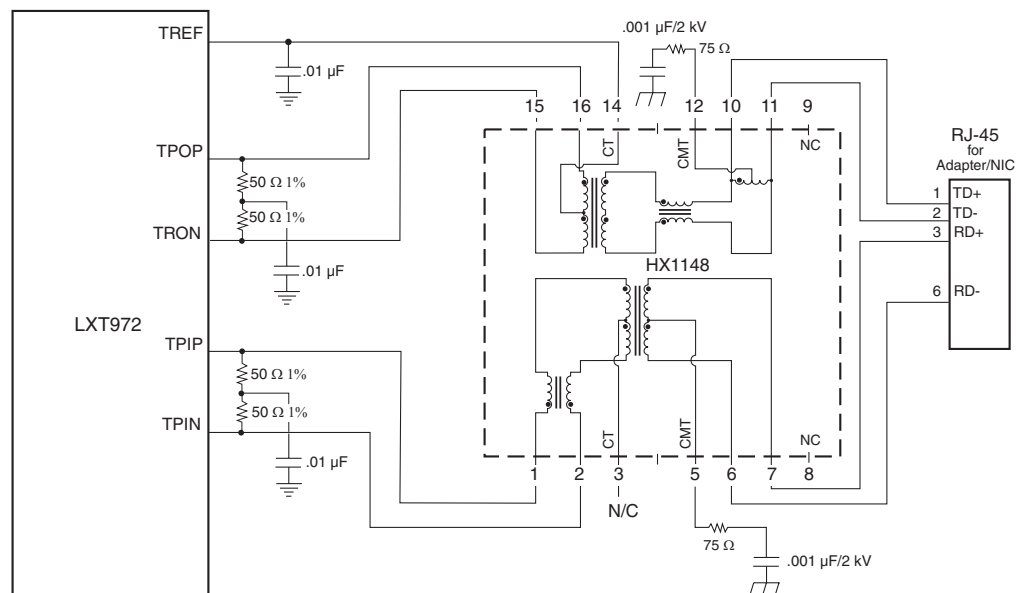


Typical Application Circuits

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 multiport applications.

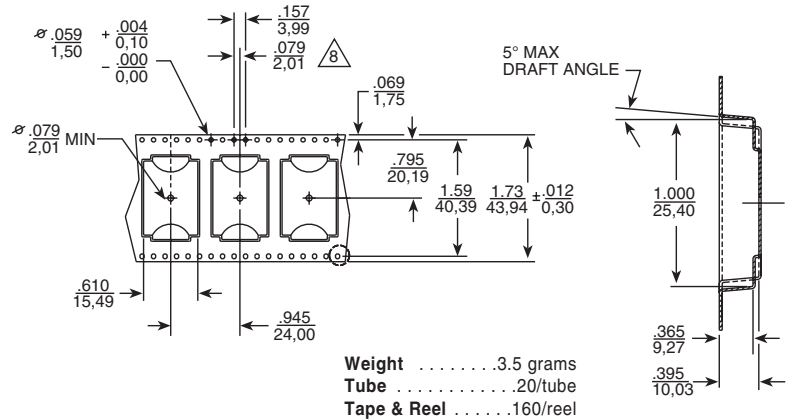
Pulse has worked closely with the leading IC manufacturers in providing these 10/100 solutions, thereby assuring compatibility with each transceiver. Additionally, each solution meets the stringent open circuit inductance requirements imposed by IEEE. When an 8 mA DC current is applied across the transformer 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 ± 0.002 " (0,05 mm).

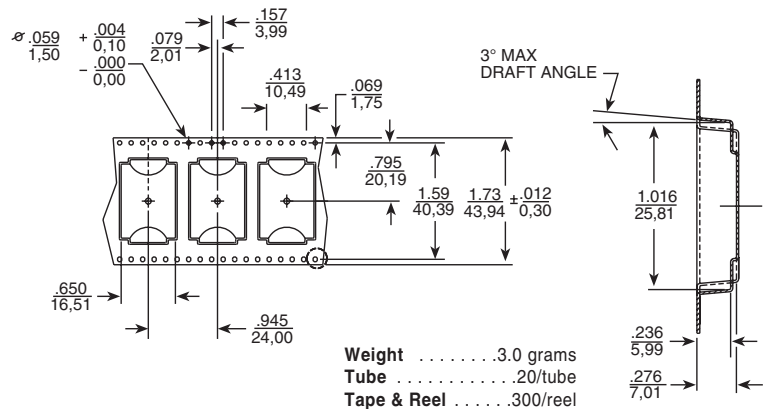
NOTE: Modules are packaged in tubes, unless Tape & Reel is specified. Please add the suffix "T" (such as H1012T) for Tape & Reel orders.

Tape & Reel Specifications

PE-68515L, PE-68517L, H1042



H1012, H1019, H1086, H1089, H1117, H1138, H1338, HX1148, HX1178



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