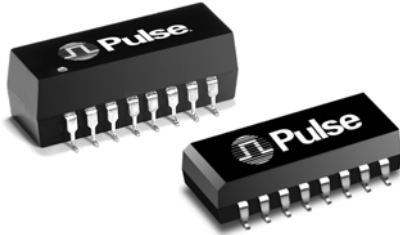


10/100 BASE-T SINGLE PORT TRANSFORMER MODULES



Pulse
A TECHNITROL COMPANY

1:1 Transmit Turns Ratios Compatible with
Broadcom, ICS, Intel, Kendin, Level One, Lucent,
National Semiconductor, SEEQ and TDK Transceivers



- Meets all IEEE 802.3 and ANSI X3.263 standards including 350 μ H OCL with 8 mA bias
- IC grade transfer-molded package withstands 235°C IR reflow
- Patented Interlock Base construction for high reliability

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

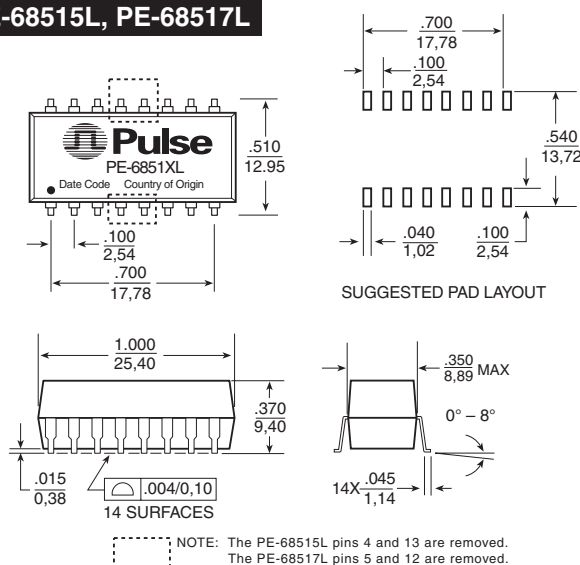
Part Number	Insertion Loss (dB MAX)	Return Loss (dB MIN @ 100 Ω)					Differential to Common Mode Rejection (dB MIN)			Crosstalk (dB TYP)			Hipot (Vrms MIN)
		0.1-100 MHz	1-30 MHz	40 MHz	50 MHz	60-80 MHz	30 MHz	60 MHz	100 MHz	30 MHz	60 MHz	100 MHz	
H1012 ³	-1.0		-20	-20	-18	-14	-42	-36	-33	-50	-40	-40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

- Rise time optimized for National's DP83843.
- Operating temperature: -40°+ 85°C.
- Meets UL 1950 and UL 1459 3rd edition requirements.

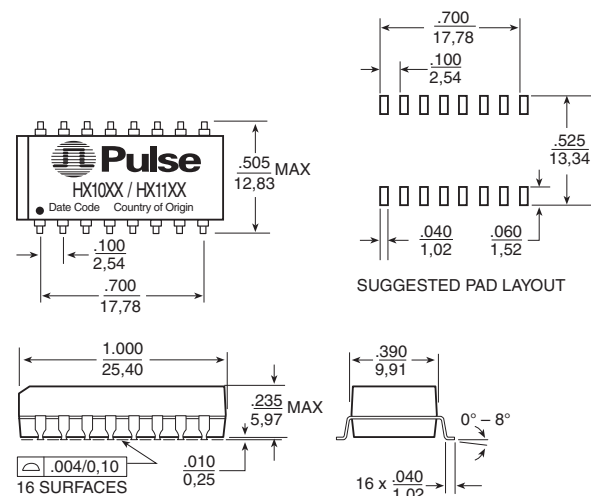
U.S. Patent No. 5,015,981

Mechanicals

PE-68515L, PE-68517L



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



Weight 3.5 grams
Tube 20/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
Tube 20/tube
Tape & Reel 300/reel

10/100 BASE-T SINGLE PORT TRANSFORMER MODULES

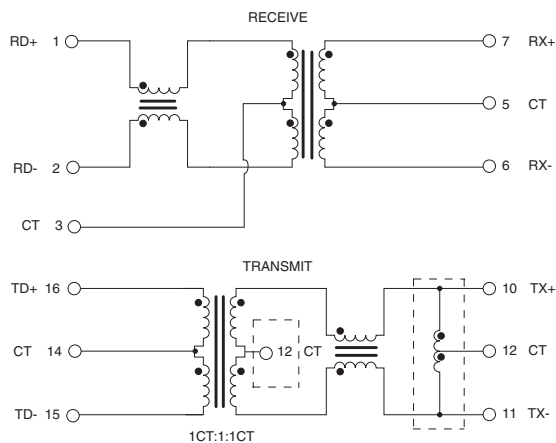


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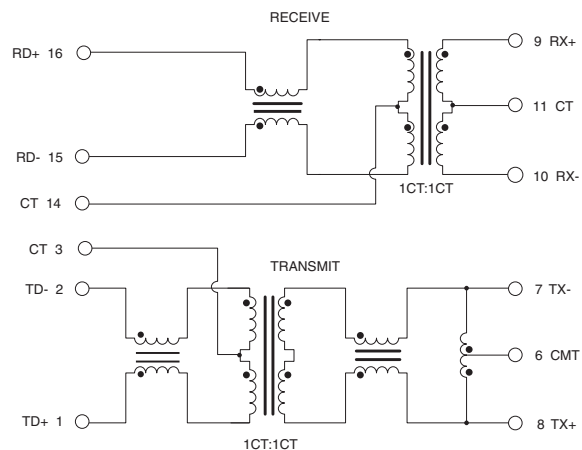
Schematics

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

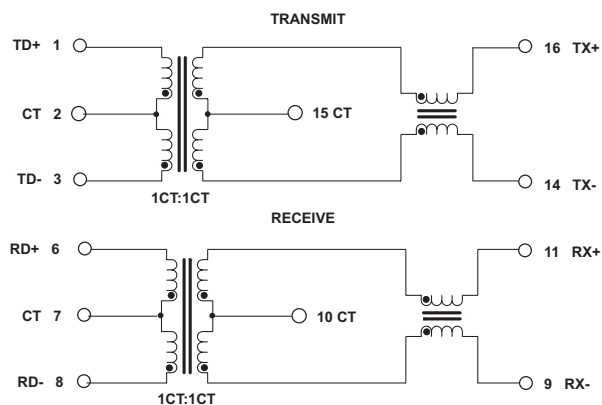
PE-68517L, H1019



 Center-tapped inductor not included in H1089, so pin 12 connects to the transformer center tap.



H1117, HX1178



10/100 BASE-T SINGLE PORT TRANSFORMER MODULES

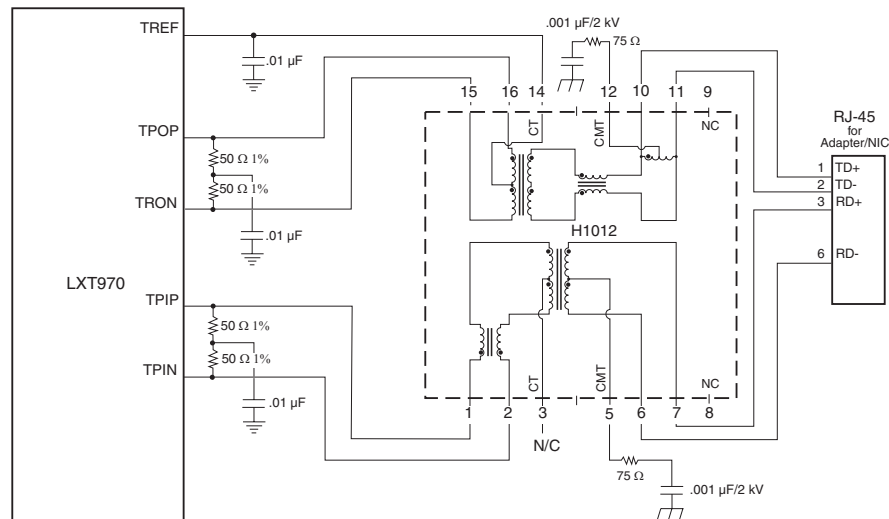


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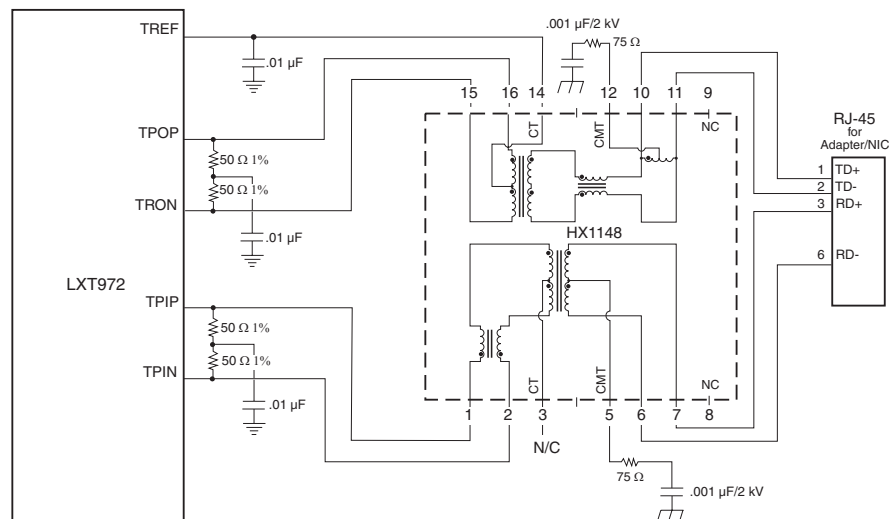
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Typical Application Circuits

H1012



HX1148



10/100 BASE-T SINGLE PORT TRANSFORMER MODULES



**1:1 Transmit Turns Ratios Compatible with
Broadcom, ICS, Intel, Kendin, Level One, Lucent,
National Semiconductor, SEEQ and TDK Transceivers**

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

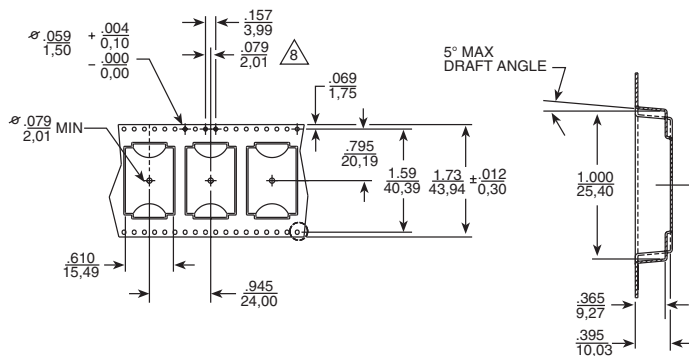
attenuation and fast rise times to minimize system level jitter. The H1086 provides a slower rise time for use with National's DP83843. The H1117 pin out is optimized for Kendin's KS8731 and KS8732. The HX1148 and HX1178 provide an extended temperature operating range (-40° to +85°C).

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 $\pm .002"$ (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.

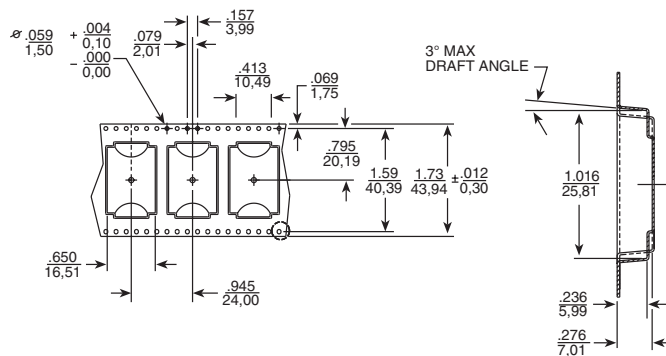
Tape & Reel Specifications

PE-68515L, PE-68517L



Weight3.5 grams
Tube20/tube
Tape & Reel160/reel

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



Weight3.0 grams
Tube20/tube
Tape & Reel300/reel

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