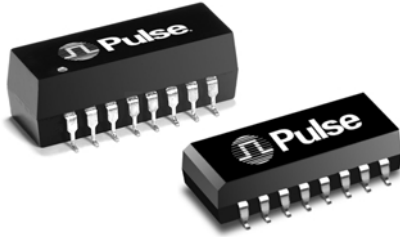


10/100 BASE-T SINGLE PORT TRANSFORMER MODULES



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

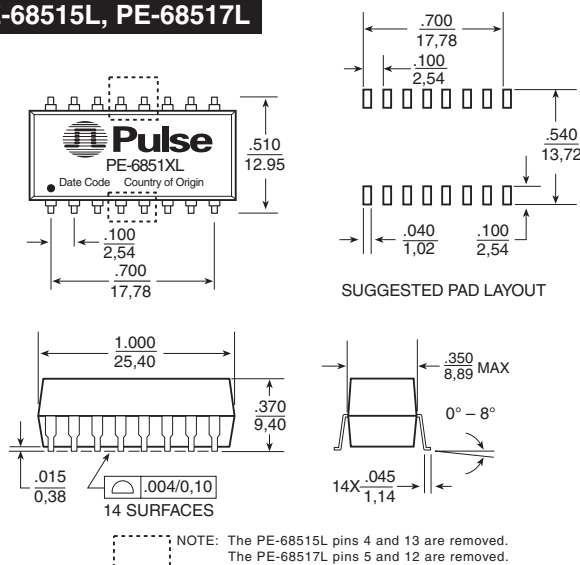
Part Number	Insertion Loss (dB MAX)	Return Loss (dB MIN @ 100 Ω)					Differential to Common Mode Rejection (dB MIN)			Crosstalk (dB TYP)			Hipot (Vrms MIN)
		0.1-100 MHz	1-30 MHz	40 MHz	50 MHz	60-80 MHz	30 MHz	60 MHz	100 MHz	30 MHz	60 MHz	100 MHz	
H1012 ³	-1.0		-20	-20	-18	-14	-42	-36	-33	-50	-40	-40	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.

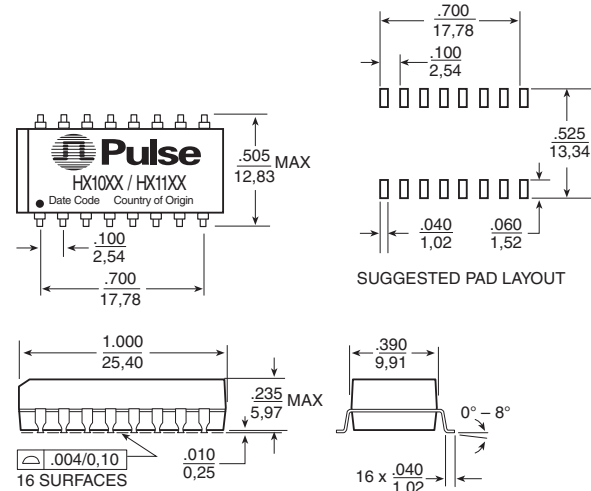
U.S. Patent No. 5,015,981

Mechanicals

PE-68515L, PE-68517L



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



Weight 3.5 grams
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

10/100 BASE-T SINGLE PORT TRANSFORMER MODULES

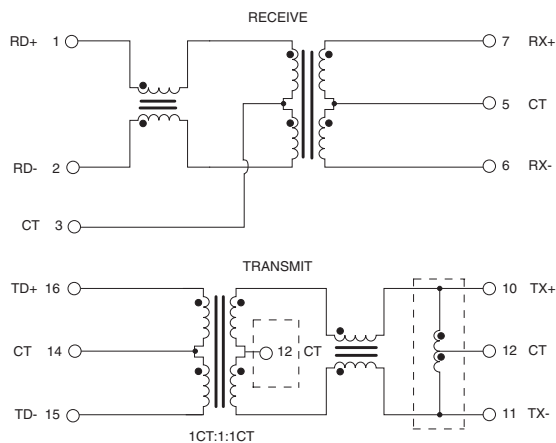


1:1 Transmit Turns Ratios Compatible with
Broadcom, ICS, Intel, Kendin, Level One, Lucent,
National Semiconductor, SEEQ and TDK Transceivers

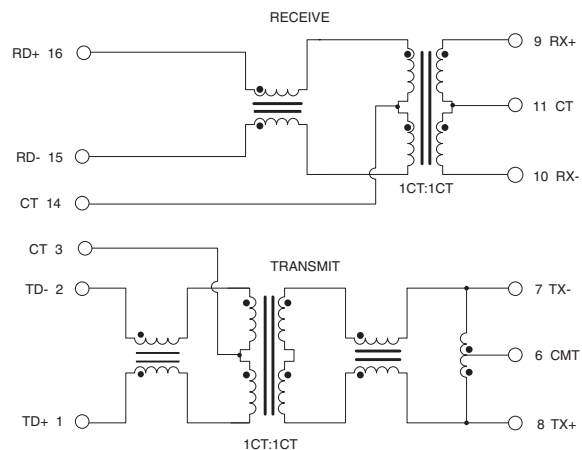
Schematics

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

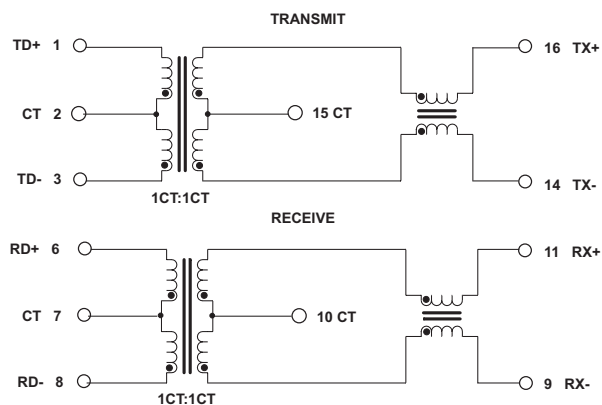
PE-68517L, H1019



 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

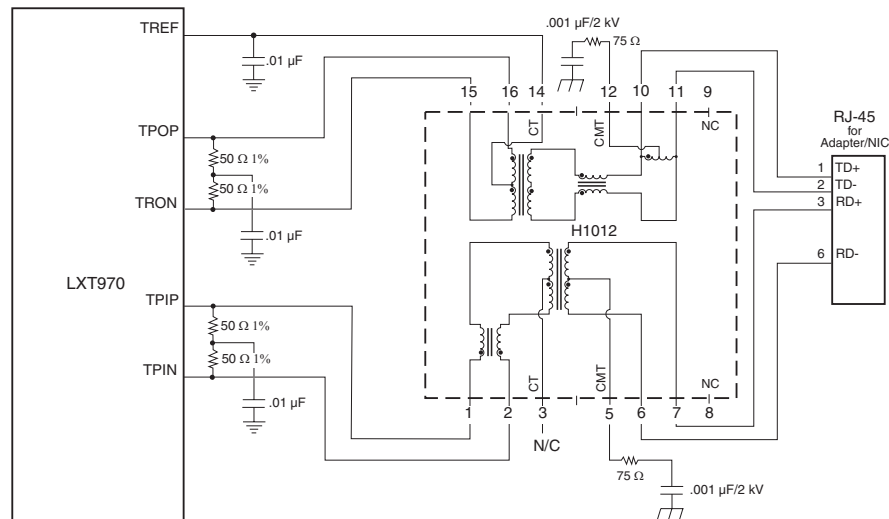


Pulse
A TECHNITROL COMPANY

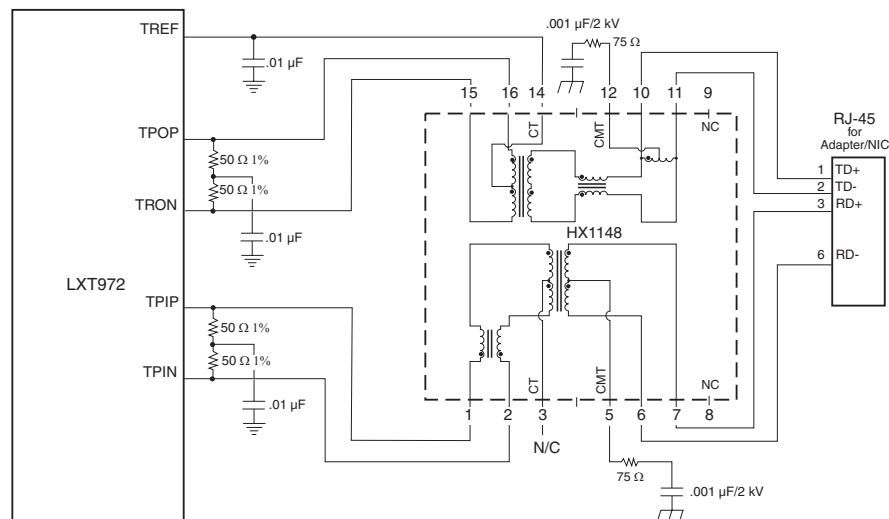
1:1 Transmit Turns Ratios Compatible with
Broadcom, ICS, Intel, Kendin, Level One, Lucent,
National Semiconductor, SEEQ and TDK Transceivers

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

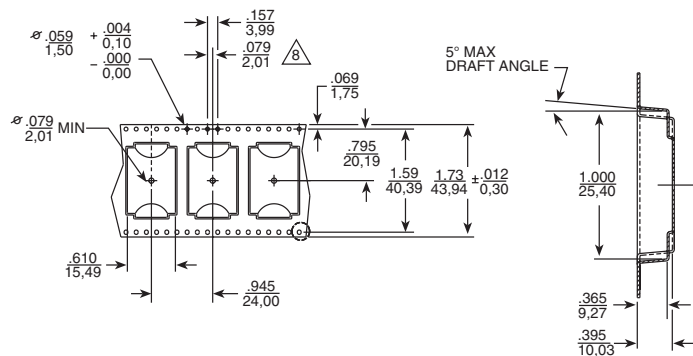
attenuation and fast rise times to minimize system level jitter. The H1086 provides a slower rise time for use with National's DP83843. The H1117 pin out is optimized for Kendin's KS8731 and KS8732. The HX1148 and HX1178 provide an extended temperature operating range (-40° to +85°C).

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 ± 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.

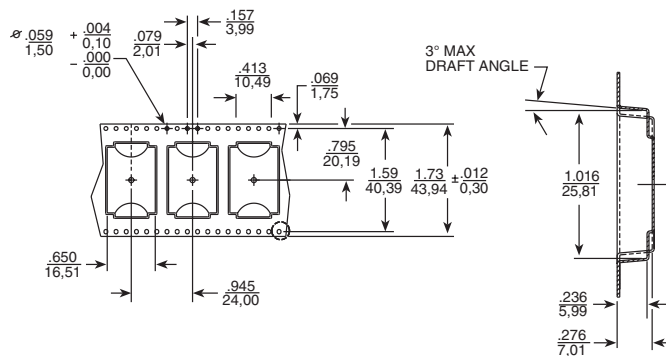
Tape & Reel Specifications

PE-68515L, PE-68517L



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

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



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

For More Information :

UNITED STATES (Worldwide)

12220 World Trade Drive
San Diego, CA 92128
U.S.A.
<http://www.pulseeng.com>
TEL: 858 674 8100
FAX: 858 674 8262

UNITED KINGDOM (Northern Europe)

1 & 2 Huxley Road
The Surrey Research Park
Guildford, Surrey GU2 5RE
United Kingdom
TEL: 44 1483 401700
FAX: 44 1483 401701

FRANCE (Southern Europe)

Zone Industrielle
F-39270
Orgelet
France
TEL: 33 3 84 35 04 04
FAX: 33 3 84 25 46 41

SINGAPORE (Southern Asia)

150 Kampong Ampat
#07-01/02
KA Centre
Singapore 368324
TEL: 65 287 8998
FAX: 65 280 0080

TAIWAN, R.O.C. (Northern Asia)

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

DISTRIBUTOR

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.