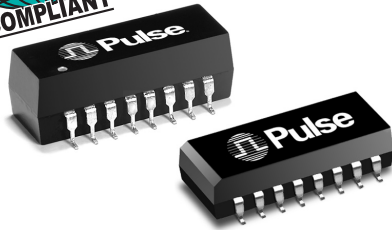


10/100 BASE-T SINGLE PORT TRANSFORMER MODULES

With 1:1 Transmit Turns Ratios



-  RoHS-5 peak reflow temperature rating: 235°C
-  RoHS-6 peak reflow temperature rating: 245°C
-  Compatible with Broadcom, Intel, Micrel, National Semiconductor, ICS, and TDK Transceivers
-  Meets IEEE 802.3 specification

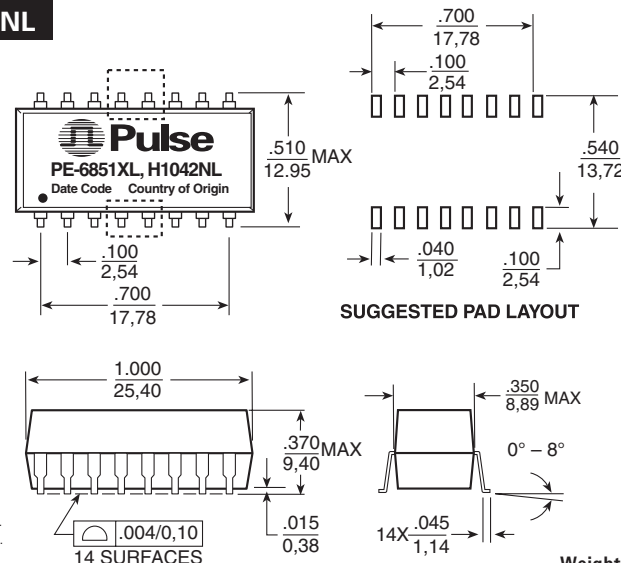
Electrical Specifications @ 25°C — Operating Temperature 0°C to 70°C

RoHS ⁶ Compliant Part Number	RoHS ⁵ Compliant 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	
H1012NL ^{4d}	H1012	-1.0		-20	-20	-18	-14	-42	-36	-33	-50	-40	-40	1500
H1019NL ^{4c}	H1019	-1.0		-20	-18	-18	-14	-45	-40	-35	-45	-40	-35	1500
H1042NL ^{4c}	—	-1.0		-16	-13.5	-11.5	-10	-45	-40	-35	-40	-38	-35	1500
H1086NL ^{4c}	H1086 ¹	-1.0		-22	-20	-18	-12	-45	-40	-35	-50	-40	-40	1500
H1089NL ^{4c}	H1089	-1.0		-22	-20	-18	-12	-42	-38	-32	-50	-40	-40	1500
H1117NL ^{4d}	H1117	-1.0		-22	-20	-18	-12	-45	-40	-35	-50	-40	-40	1500
H1138NL ^{4a}	H1138	-0.8		-18	-16	-14	-12	42	-37	-33	-50	-40	-40	1500
HX1148NL ^{2, 4d}	HX1148 ²	-1.5		-18	-13.5	-11.5	-10	-42	-37	-33	-50	-40	-40	1500
HX1178NL ^{2, 4d}	HX1178 ²	-1.5		-18	-13.5	-11.5	-10	-42	-37	-33	-50	-40	-40	1500
PE-68515LNL ^{4d}	PE-68515L	-1.0		-18	-18	-16	-12	-50	-45	-40	-55	-50	-50	1500
PE-68517LNL ^{4d}	PE-68517L	-1.0		-18	-16	-15	-12	-45	-40	-35	-50	-40	-40	1500
H1338NL ^{4a}	H1338	-1.1		-18	-16	-14	-12	-42	-37	-35	-40	-40	-35	1800

- Rise time optimized for National's DP83843.
- Operating temperature: -40°+ 85°C.
- When ordering Tape & Reel packaging, add a "T" suffix to the end of the part number, e.g. H1012T
- 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

PE-68515L, PE-68517L, H1042NL



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

Unless otherwise specified, all tolerances are $\pm \frac{.010}{.025}$

USA 858 674 8100 • Germany 49 7032 7806 0 • Singapore 65 6287 8998 • Shanghai 86 21 32181071 • China 86 755 33966678 • Taiwan 886 3 4643715

10/100 BASE-T SINGLE PORT TRANSFORMER MODULES

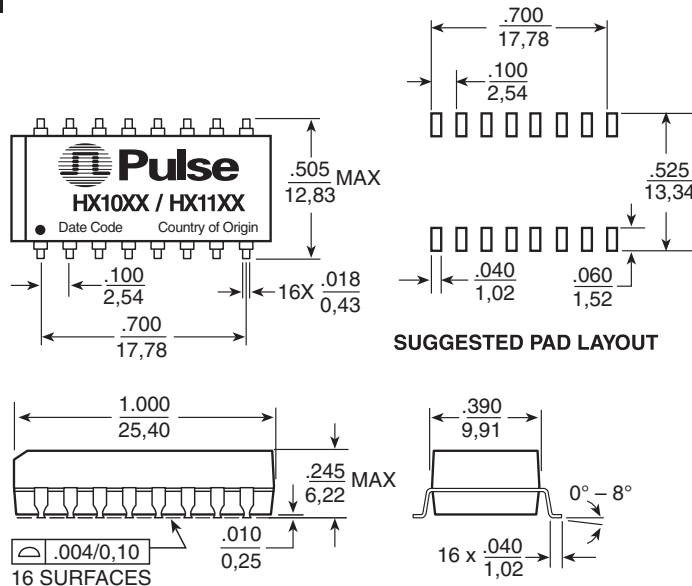
With 1:1 Transmit Turns Ratios



Mechanicals (*continued*)

H1012, H1019, H1086, H1089, H1117,

H1138, HX1148, HX1178

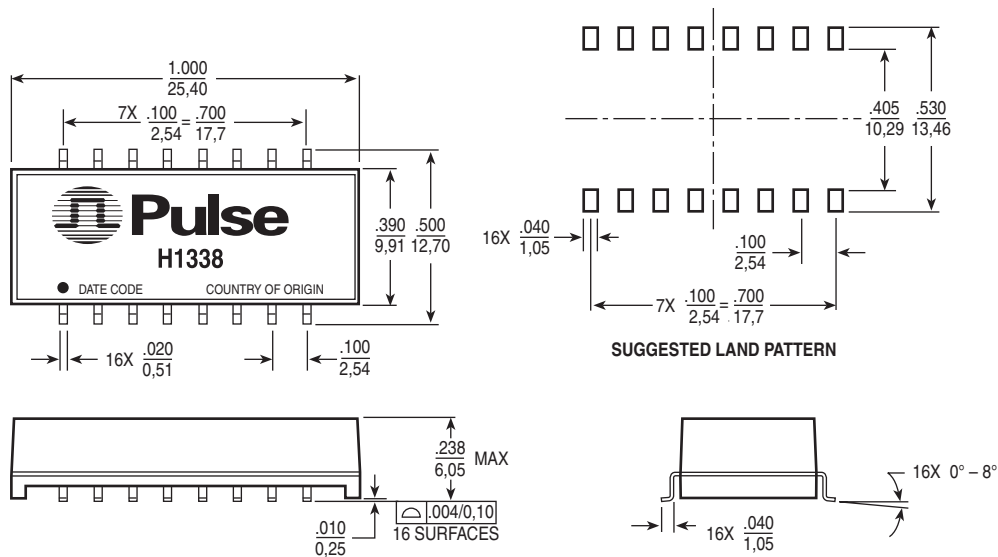


Dimensions: $\frac{\text{Inches}}{\text{mm}}$

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

Weight 3.0 grams
Tube 20/tube
Tape & Reel 300/reel

H1338



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

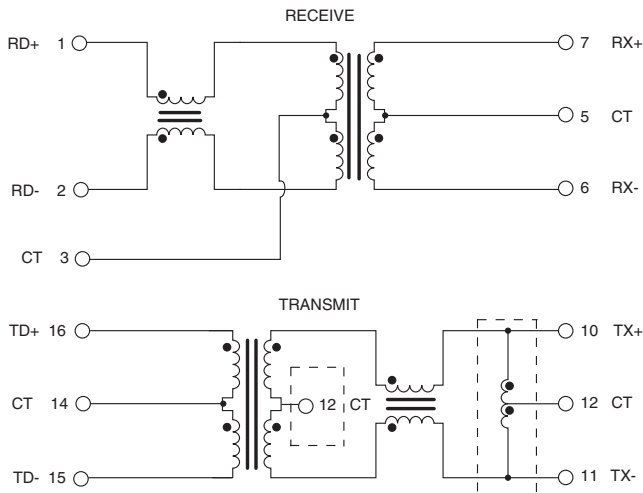
10/100 BASE-T SINGLE PORT TRANSFORMER MODULES

With 1:1 Transmit Turns Ratios



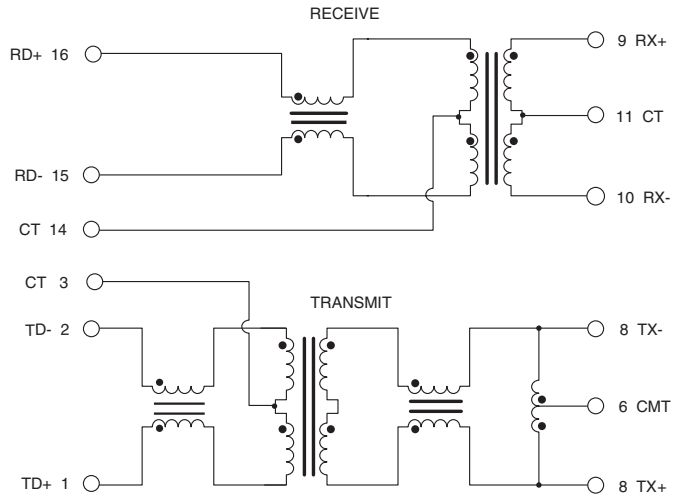
Schematics

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

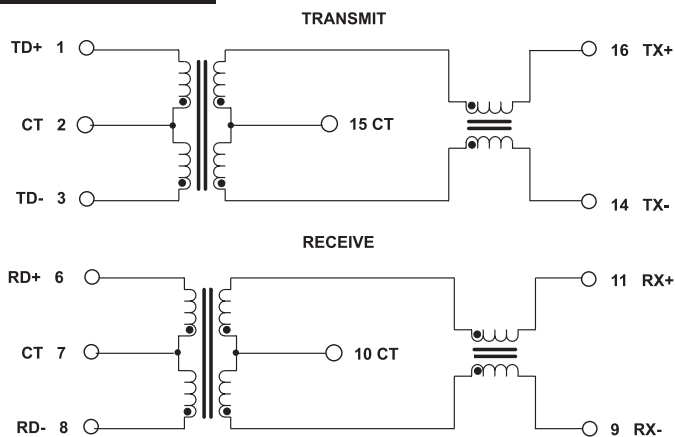


Center-tapped inductor not included in H1089. So, pin 12 connects to the transformer center tap.

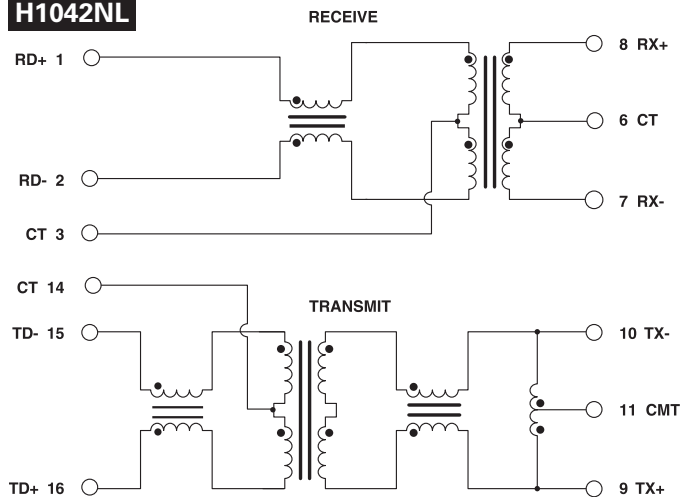
PE-68517L, H1019



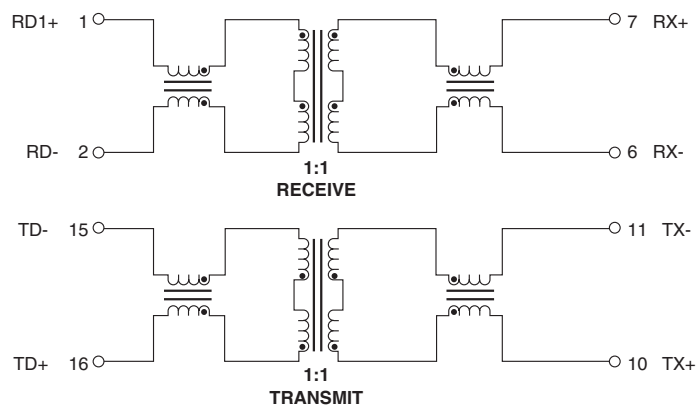
H1117, HX1178



H1042NL



H1338



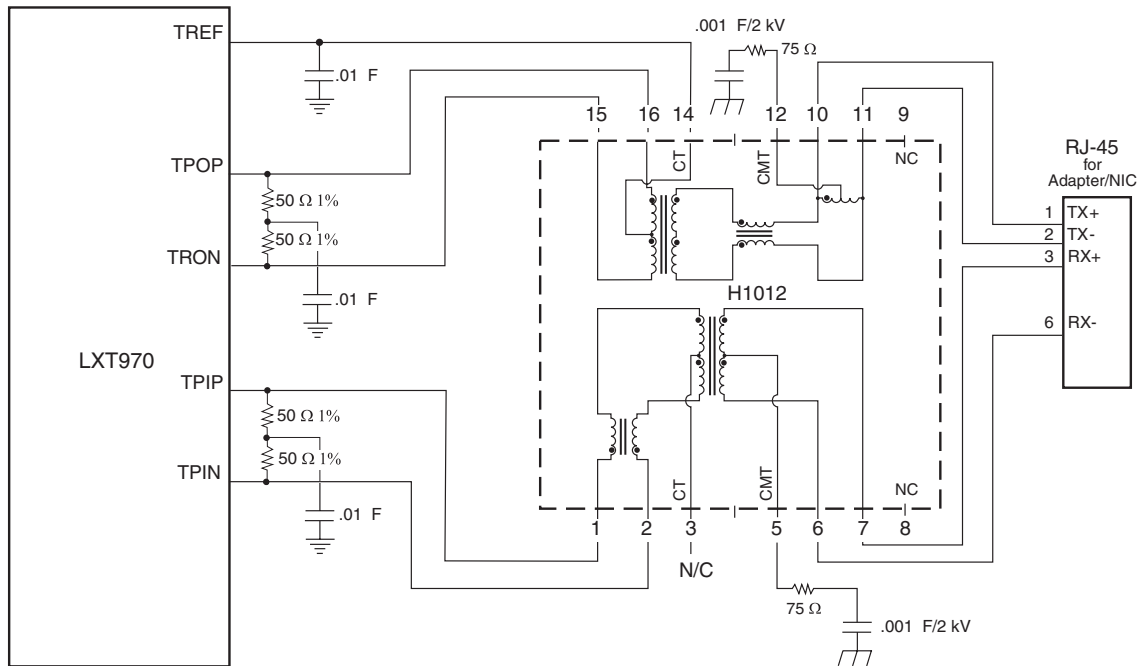
10/100 BASE-T SINGLE PORT TRANSFORMER MODULES

With 1:1 Transmit Turns Ratios

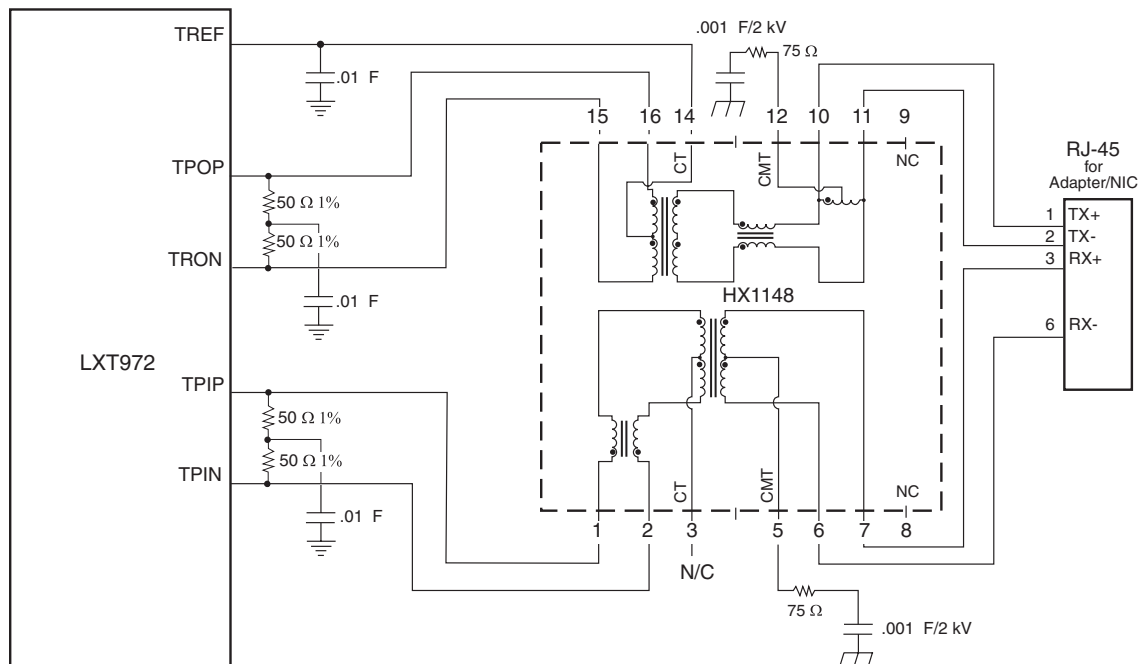


Typical Application Circuits

H1012, H1138



HX1148



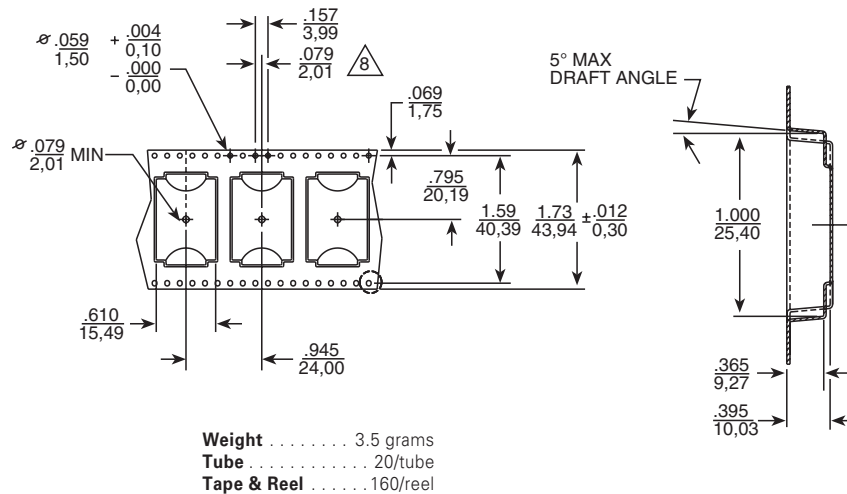
10/100 BASE-T SINGLE PORT TRANSFORMER MODULES

With 1:1 Transmit Turns Ratios



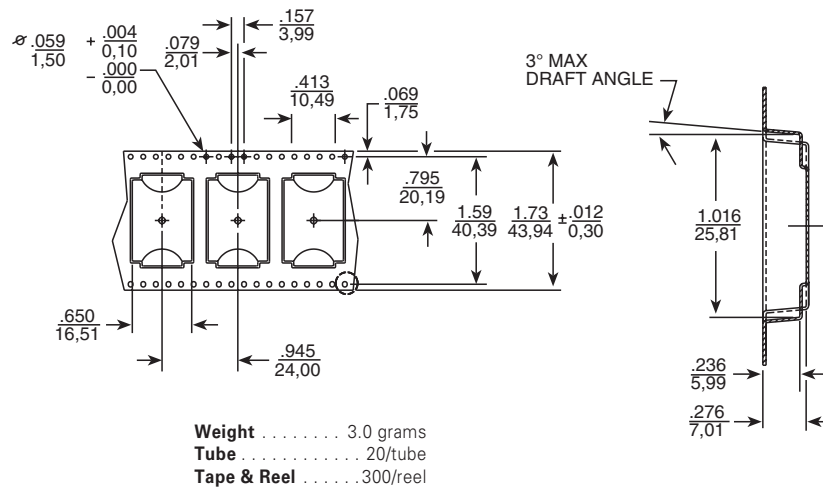
Tape & Reel Specifications

PE-68515L, PE-68517L, H1042NL



H1012, H1019, H1086, H1089, H1117,

H1138, H1338, HX1148, HX1178



For More Information:

Pulse Worldwide Headquarters

12220 World Trade Dr.
San Diego, CA 92128
U.S.A.

www.pulseeng.com

Tel: 858 674 8100
Fax: 858 674 8262

Pulse Europe

Einsteinstrasse 1
D-71083 Herrenberg
Germany

Tel: 49 7032 7806 0
Fax: 49 7032 7806 135

Pulse China Headquarters

B402, Shenzhen Academy of
Aerospace Technology Bldg.
10th Kejinan Rd.
High-Tech Zone
Nanshan District
Shenzhen, PR China 518057

TEL: 86 755 33966678
FAX: 86 755 33966700

Pulse North China

Room 1503
XinYin Building
No. 888 YiShan Rd.
Shanghai 200233
China

Tel: 86 21 54643211/2
Fax: 86 21 54643210

Pulse South Asia

135 Joo Seng Rd.
#03-02
PM Industrial Bldg.
Singapore 368363

TEL: 65 6287 8998
FAX: 65 6280 0080

Pulse North Asia

No. 26, Kao Ching Rd.
Yang Mei Chen
Taoyuan Hsien
Taiwan
R. O. C.

Tel: 886 3 4643715
Fax: 886 3 4641911

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, 2008. Pulse Engineering, Inc. All rights reserved.