T1/CEPT/ISDN-PRI TRANSFORMERS

Dual Surface Mount, 1500 Vrms, Extended & Standard Temperature Range





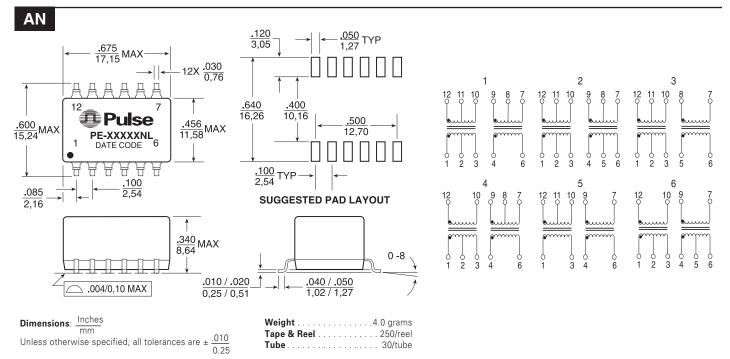
- 🖭 RoHS-6 peak reflow temperature rating: 245°C
- Dual SMT package contains transmit and receive transformers
- Models matched to leading transceiver ICs
- Isolation voltage: 1500 Vrms
- UL recognized

Electrical Specifications @ 25°C										
RoHS-6 Compliant Part Number	Turns Ratio ^B (Pri:Sec ± 2%)	OCL @ 25°C (mH MIN)	L L (µH MAX)	C _{W/W} (pF MAX)	DCR Pri (Ω MAX)	DCR Sec (Ω MAX)	Package/ Schematic	Primary Pins		
EXTENDED TEMPERATURE RANGE MODELS 1 - OPERATING TEMPERATURE -40°C TO +85°C										
PE-68841NL	1CT:2CT & 1CT:2CT	1.20 & 1.20	0.80 & 0.80	50 & 50	1.00 & 1.00	1.70 & 1.70	AN/2	12-10, 4-6		
PE-68822NL	1CT:2CT & 1:1.36CT	1.60 & 1.60	1.00 & 0.80	60 & 55	1.70 & 1.70	2.00 & 1.70	AN/1	12-10, 4-6		
PE-68826NL ^E	1:1/1.26 & 1:2CT	1.20 & 1.20	0.80 & 0.80	50 & 60	1.00 & 1.00	1.10 & 1.70	AN/4	12-10, 4-6		
PE-68827NL	1:1CT & 2:1	1.60 & 1.60	1.30 & 1.30	55 & 40	1.10 & 1.10	1.10 & 0.70	AN/5	1-3, 4-6		
PE-68828NL	1CT:1CT & 1CT:1CT	1.20 & 1.20	0.80 & 0.80	50 & 50	1.00 & 1.00	1.00 & 1.00	AN/2	1-3, 4-6		
PE-68874NL	1CT:1.15CT & 1CT:1.15CT	1.20 & 1.20	0.80 & 0.80	50 & 50	1.20 & 1.20	1.40 & 1.40	AN/2	1-3, 4-6		
PE-68877NL	1CT:1CT & 1CT:2CT	1.20 & 1.20	0.80 & 0.80	50 & 50	1.00 & 1.00	1.00 & 1.80	AN/2	1-3, 4-6		
PE-68884NL	1CT:1.36CT & 1CT:1.36CT	1.20 & 1.20	0.80 & 0.80	50 & 50	1.20 & 1.20	1.40 & 1.40	AN/2	1-3, 4-6		
STANDARD TEMPERATUR	STANDARD TEMPERATURE RANGE MODELS - OPERATING TEMPERATURE 0°C TO +70°C									
PE-68861NL	1CT:2CT & 1CT:2CT	1.20 & 1.20	0.60 & 0.60	35 & 35	0.70 & 0.70	1.20 & 1.20	AN/2	12-10, 4-6		
PE-68864NL ^A	1CT:2CT & 1:1	1.20 & 1.20	0.30-0.55 & 0.80	30 & 30	0.70 & 0.70	1.20 & 0.70	AN/3	1-3, 5-6		
PE-68866NL ^E	1:1/1.26 & 1:2CT	1.50 & 1.20	0.40 & 0.50	40 & 40	0.70 & 0.70	0.90 & 1.20	AN/4	12-10, 4-6		
PE-68836NL ^E	1:1/1.26 & 1:1/1.26	1.50 & 1.50	0.40 & 0 .40	45 & 45	0.80 & 0.80	1.00 & 1.00	AN/6	12-10, 9-7		

NOTE: To order Tape & Reel packaging add a "T" suffix to the part number (i.e. PE-68861NL becomes PE-68861NLT).

See Pages 6 and 7 for Table Notes.

Mechanical Schematics



T1/CEPT/ISDN-PRI TRANSFORMERS

Dual Surface Mount, 1500Vrms, Small Package



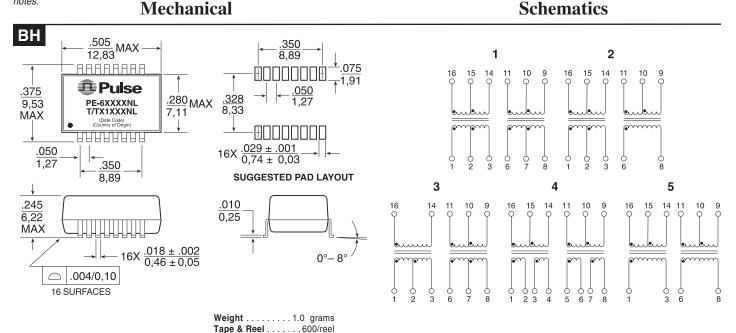




- RoHS-6 peak reflow temperature rating: 245°C
- Dual SMT package contains transmit and receive transformers
- Models matched to leading transceiver ICs
- UL recognized (some parts pending approval)

Electrical Specifications @ 25°C									
RoHS-6 Compliant Part Number		Turns Ratio B	OCL (mal I MIN)	C _{W/W}	L _L	DCR Pri	Package/ Schematic	Primary	
STD TEMP	EXT TEMP	(Pri:Sec ±5%)	(mH MIN)	(pF MAX)	(µH MAX)	(Ω MAX)	Schematic	Pins	
PE-65861NL	T1090NL	1CT:2CT & 1CT:2CT	1.20 & 1.20	30 & 30	.60 & .60	0.70 & 0.70	BH/1	16-14, 6-8	
_	T1091NL	1CT:2CT & 1:1.36CT	1.20 & 1.20	30 & 30	.60 & .60	0.70 & 0.70	BH/2	16-14, 6-8	
_	T1076NL	1:1.15CT & 1CT:2CT	1.20 & 1.20	30 & 30	.60 & .60	0.70 & 0.70	BH/3	16-14, 6-8	
PE-65870NL	_	1CT:1.15CT & 1CT:1.15CT	1.20 & 1.20	30 & 30	.60 & .60	0.70 & 0.70	BH/1	1-3, 6-8	
PE-68678NL	T1094NL	1CT:1CT & 1CT:2CT	1.20 & 1.20	30 & 30	.60 & .60	0.70 & 0.70	BH/1	16-14, 6-8	
PE-68786NL	_	1CT:1.41CT & 1CT:1.41CT	1.00 & 1.00	30 & 30	.60 & .60	0.70 & 0.70	BH/1	16-14, 11-9	
T1023NL	_	1CT:1.41CT & 1CT:1.41CT	1.00 & 1.00	30 & 30	.60 & .60	0.70 & 0.70	BH/1	1-3, 11-9	
T1021NL ¹	_	2CT:1/1.26 & 2CT:1/1.26	1.50 & 1.50	40 & 40	.50 & .50	0.70 & 0.70	BH/1	1-3, 11-9	
T1075NL ¹	_	2CS:1.57/2 & 2CS:1.57/2	1.50 & 1.50	40 & 40	.50 & .50	0.70 & 0.70	BH/4	1-2, 5-6	
T1137NL	TX1287NL	1CT:2.42CT & 1CT:2.42CT	1.20 & 1.20	25 & 25	.60 & .60	0.70 & 0.70	BH/1	1-3, 6-8	
_	T1146NL	1:2/2.4 & 1:0.79/1	1.00 & 1.00	35 & 35	1.00 & 1.00	0.80 & 0.80	BH/5	1-3, 6-8	
_	TX1188NL	1CT:2CT & 1CT:2CT	1.20 & 1.20	30 & 30	.60 & .60	0.70 & 0.70	BH/1	1-3, 6-8	
_	TX1089NL	1CT:1CT & 1CT:1CT	1.20 & 1.20	30 & 30	.80 & .80	0.70 & 0.70	BH/1	1-3, 6-8	
_	TX1467NL	1CT:1:1 & 1CT:1:1	1.20 & 1.20	30 & 30	.80 & .80	1.00 & 1.00	BH/4	16-14, 11-9	

NOTE: Standard (STD) operating temperature range is 0°C to 70°C. Extended (EXT) operating temperature range is -40°C to +85°C. See pages 6 and 7 for table notes.



Dimensions: Inches

Unless otherwise specified, all tolerances are $\pm \frac{.010}{0.25}$

Tube 40/tube

T1/CEPT/ISDN-PRI TRANSFORMERS Single Reinforced Insulation, 3 kVrms









- RoHS-6 peak reflow temperature rating: 245°C
- Certified for reinforced insulation per UL
- For T1/CEPT line interfaces
- Matched to leading transceiver ICs
- Designed to meet ITU-T G.703

Electrical Specifications @ 25°C — Operating Temperature 0°C to 70°C (Unless Otherwise Noted)									
RoHS-6 Compliant Part Number	Turns Ratio ^B (Pri:Sec ±5%)	OCL ^B (mH MIN)	C_{W/W} (pF MAX)	L L (µH MAX)	DCR Pri (Ω MAX)	DCR Sec (Ω MAX)	Safety Agency Recognition ¹⁰	Package/ Schematic	Primary Pins
PE-65830NL	1.27CS:1	.800	15	0.70	0.50	0.35	C,T,U,B	IS/3	1-5
PE-65831NL	1CS:1	.800	15	0.70	0.50	0.45	C,T,U,B	IS/3	1-5
PE-65832NL	1:1.36CT	1.20	35	0.60	0.70	0.90	C,T,U,B	IS/4	10-6
PE-65833NL ^A	1CT:2CT	1.20	20	0.30-0.55	0.50	0.90	C,T,U,B	IS/1	1-5
PE-65834NL	1:1	1.20	20	0.50	0.50	0.50	C,T,U,B	IS/2	1-5
PE-65835NL	1CT:2CT	1.20	15	0.80	0.70	1.10	C,T,U,B	IS/1	1-5
PE-65836NL	1CT:3CT:1	.600	30	0.80	0.70	1.70	C,T,U,B	IS/5	1-3
PE-65837NL ^E	1:1.08/1.36	1.50	20	0.60	0.70	0.90	C,T,U,B	IS/4	10-6
PE-65838NL	1:1.14CT	1.50	30	1.00	0.70	0.90	C,T,U,B	IS/4	10-6
PE-65839NL ^E	1:1/1.26	1.50	35	0.60	0.70	1.10	C,T,U,B	IS/4	10-6
PE-68646NL ^E	1:1.58/2	1.50	20	0.70	0.70	1.20	C,T,U,B	IS/4	10-6
PE-68788NL	1CT:1.41CT	1.20	20	0.80	0.60	0.80	T,U,B	IS/1	10-6

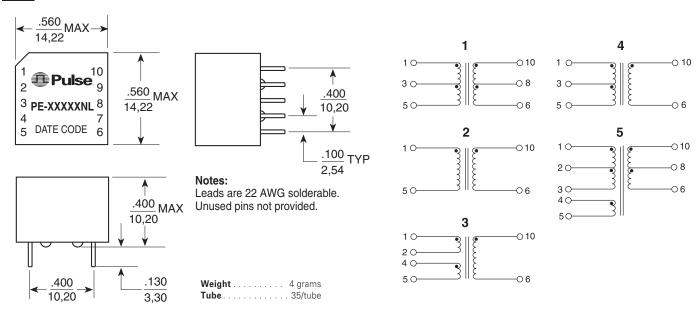
See pages 6 and 7 for table notes.

Mechanical

Schematics

IS

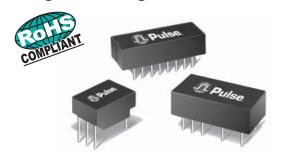
Dimensions: Inches



Unless otherwise specified, all tolerances are ±

T1/CEPT/ISDN-PRI TRANSFORMERS Single Through Hole, 1500Vrms





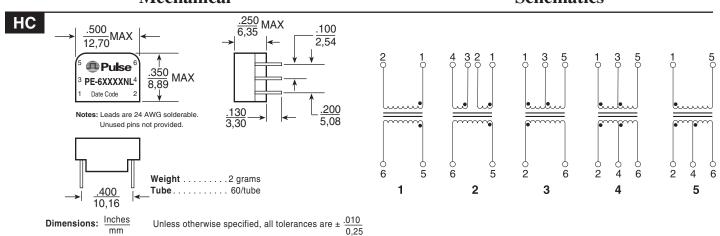
- RoHS-6 peak reflow temperature rating: 245°C
- Extended and standard temperature range
- Dual and single through hole models available
- Models matched to leading IC transceivers
- UL recognized
- Isolation Voltage: 1500 Vrms MIN

			Electrical Sp	ecifications @	25°C			
RoHS-6 Compliant Part Number	Turns Ratio ^B (Pri:Sec ±5%)	OCL @ 25°C (mH MIN)	Cw/w (pF MAX)	LL (µH MAX)	DCR Pri (Ω MAX)	DCR Sec (Ω MAX)	Package/ Schematic	Primary Pins
STANDARD TEMPERA	TURE RANGE SINGLE TRANS	SFORMERS - OPERATI	NG TEMPERATURE 0	°С то +70° С				
PE-64931NL	1:1:1 (1:2CS)	1.20	25	0.50	0.70	0.70 & 0.70	HC/2	1-2
PE-64933NL	1CT:3CT	1.20	30	0.50	0.70	1.60	HC/4	1-5
PE-64934NL	1:1w	1.20	25	0.50	0.70	0.70	HC/1	1-2
PE-64936NL	1CT:1	1.20	25	0.80	0.70	0.70	HC/3	1-5
PE-64937NL	1:1.36	1.20	35	0.80	0.70	0.80	HC/1	5-6
PE-64940NL	1.26CS:1 (1:1:1.58)	0.30	30	0.60	0.80	0.60	HC/2	1-4
PE-64941NL ^D	1CS:1	0.80	30	0.60	0.80	0.60	HC/2	1-4
PE-64942NL	1CS:1.31	0.80	30	0.40	0.80	0.60	HC/2	1-4
PE-64943NL ^A	1CT:2CT	1.20	30	0.30-0.55	0.70	1.20	HC/4	1-5
PE-65351NL	1:2CT	1.20		0.50	0.70	1.30	HC/3	2-6
PE-65363NL	1:4CT	0.50	40	1.00	0.50	1.50	HC/5	1-5
PE-65379NL	1:1.14CT	1.20	35	0.80	0.70	0.80	HC/5	1-5
PE-65388NL	1:1.15CT	1.50	35	0.60	0.70	0.90	HC/3	2-6
PE-65389NL ^E	1:1/1.26	1.50	40	0.40	0.70	0.90	HC/3	2-6
PE-65415NL	1CT:2CT	1.20	30	0.50	0.70	1.20	HC/4	1-5
PE-65558NL	1:2.3CT	1.20	35	0.80	0.70	1.40	HC/5	1-5
PE-65586NL	1:1.36CT	1.20	35	0.80	0.70	0.90	HC/5	1-5
PE-65755NL	1CT:1CT	1.20	25	0.80	0.80	0.80	HC/4	1-5
PE-68644NL	1CT:1	0.70	20	0.70	0.20	0.80	HC/3	1-5
PE-68645NL	1:1.36CT	0.70	20	0.70	0.50	0.40	HC/5	1-5
T1054NL	1:1.5CT	1.20	30	0.60	0.70	1.00	HC/3	2-6
EXTENDED TEMPE	rature Range Single	TRANSFORMERS 1 -	- Operating Temi	PERATURE -40°C T	o +85°C			
PE-65340NL	1:1.36	1.20	35	0.80	0.90	1.20	HC/1	5-6
PE-65770NL	1:1.15CT	1.50	40	0.80	0.90	1.00	HC/3	2-6
PE-65771NL	1CT:2CT	1.20	50	0.60	1.00	2.00	HC/4	2-6
PE-65778NL	1CT:1CT	1.20	40	1.00	1.00	1.00	HC/4	1-5
PE-68600NL	1CT:3CT	1.20	60	0.80	0.90	2.70	HC/4	1-5
PE-68664NL ^E	1:1/1.26	1.50	50	0.80	0.90	1.10	HC/3	2-6
TX1252NL	1CT:1	1.20	40	1.00	1.00	1.00	HC/3	1-5

See pages 6 and 7 for table notes.

Mechanical

Schematics



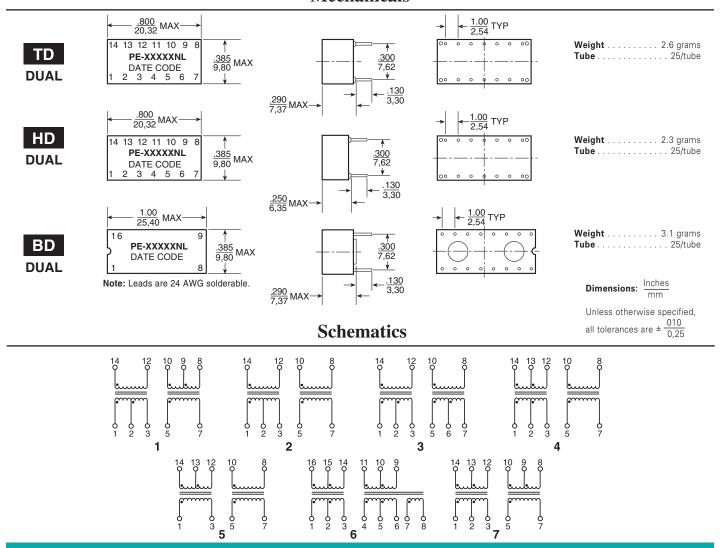
T1/CEPT/ISDN-PRI TRANSFORMERS Dual Through Hole, 1500 Vrms



Electrical Specifications @ 25°C									
RoHS-6 Compliant Part Number	Turns Ratio ^B (Pri:Sec ±5%)	OCL @ 25°C (mH MIN)	C_{W/W} (pF MAX)	Lլ (µH MAX)	DCR Pri (Ω MAX)	$\begin{array}{c} \textbf{DCR Sec} \\ (\Omega \; \text{MAX}) \end{array}$	Package/ Schematic	Primary Pins	
STANDARD TEMPERATUR	E RANGE DUAL TRANSFORME	rs – Operating T	EMPERATURE	0°С то +70°С					
PE-64951NL	1:2CT & 1:2CT	1.20 & 1.20	35 & 35	0.50 & 0.50	0.70 & 0.70	1.20 & 1.20	HD/1	14-12, 5-7	
PE-64921NL	1:2CT & 1:1.36	1.20 & 1.20	35 & 35	0.50 & 0.80	0.80 & 0.80	1.20 & 1.00	HD/2	14-12, 5-7	
PE-64953NL	1:2CT & 1:2CT	2.00 & 2.00	50 & 50	0.60 & 0.60	1.00 & 1.00	2.00 & 2.00	HD/3	14-12, 10-8	
PE-64954NL ^A	1CT:2CT & 1:1	1.20 & 1.20	30 & 30	0.30-0.55 & 0.50	0.70 & 0.70	1.20 & 0.70	HD/4	1-3, 5-7	
PE-64955NL	1:1.26CT & 1.58:1	0.80 & 0.80	30 & 30	0.50 & 0.50	0.60 & 0.60	0.70 & 0.30	HD/5	1-3, 5-7	
PE-64956NL	1:1CT & 2:1	0.80 & 0.80	30 & 30	0.60 & 0.60	0.50 & 0.50	0.50 & 0.20	HD/5	1-3, 5-7	
PE-64957NL	1CT:1.31 & 2.62:1	1.20 & 1.20	30 & 30	0.80 & 0.80	0.60 & 0.60	0.50 & 0.30	HD/5	1-3, 5-7	
PE-65565NL	1:1.15CT & 1:2CT	1.50 & 1.20	35 & 40	0.60 & 0.50	0.70 & 0.70	1.10 & 1.30	TD/1	14-12, 5-7	
PE-65566NL ^E	1:1/1.26 & 1:2CT	1.50 & 1.20	40 & 40	0.50 & 0.40	0.70 & 0.70	0.90 & 1.30	TD/1	14-12, 5-7	
EXTENDED TEMPERATURE RANGEDUAL TRANSFORMERS 1 - OPERATING TEMPERATURE -40°C TO +85°C									
PE-65567NL	1:1.15CT & 1:2CT	1.50 & 1.20	40 & 60	0.80 & 0.80	0.90 & 0.90	1.00 & 1.70	TD/1	14-12, 5-7	
PE-65568NL ^E	1:1/1.26 & 1:2CT	1.50 & 1.20	50 & 60	0.80 & 0.80	0.90 & 0.90	1.00 & 1.70	TD/1	14-12, 5-7	
PE-65774NL	1CT:2CT & 1:1.36CT	1.20 & 1.20	50 & 50	0.96 & 0.80	1.00 & 1.00	1.70 & 1.20	TD/7	14-12, 5-7	
PE-68618NL ^G	1CT:1CT & 3CT:1CT:.25	1.20 & 32.0	40 & 65	0.80 & 0.80	1.00 & 3.00	1.00 & 1.20	BD/6	1-3, 11-9	
PE-64950NL ^G	1CT:1CT & 1CT:3CT:1	1.20 & 0.60	50 & 50	0.80 & 0.80	1.00 & 0.80	1.00 & 2.00	BD/6	1-3, 4-6	

(See Pages 6 and 7 for Table Notes)

Mechanicals





			Dual SMT	(DU Dka \	Dual SMT	C (AN Dka)		Cinalo Thu	ough Holo		DuolThre	wah Hala	Cinalo The	ough Holo
IC	Manufacturer/	Com_		Ext Temp		(AN Pkg.)	Ctondo	Single Thr	 	d Tomp	i	ough Hole	Single Thr	<u> </u>
IC	C Part Number	ments	Std Temp	TX & RX	Std Temp	Ext Temp	TX	rd Temp RX	TX	ed Temp RX	Std Temp	Ext Temp	Reinforced TX	RX
MINDSPEED	BT8510	T1/E1	TA & NA	TA & NA	PE-68868NL			PE-65351NL					PE-65839NL	PE-65835NL
(CONEXANT)	BT8510	T1/E1	T1021NL	_	T1021NL							PE-65568NL		PE-65835NL
	BT8370/5/6	BETTER RL	_	T1091NL	_	PE-68822NL						PE-65774NL	PE-65832NL	PE-65834NL
CIRRUS LOGIC	BT8370/5/6 61318	Low Power 120 E1	— PE-68678NL	T1076NL T1094NL	— PE-68877NL	— PE-69977NII		PE-64936NL PE-64936NL					PE-65838NL PE-65835NL	PE-65834NL PE-65835NL
(CRYSTAL)	61318	75 E1	—	— —	— —	— —	T1229NL	PE-64936NL	T1229NL	PE-65778NL	— —	— —	PE-68646NL	PE-65835NL
	61577	T1 & E1	PE-65861NL	T1090NL	PE-68861NL	PE-68841NL						_	PE-65835NL	PE-65835NL
	61304A/5A/535A/574A,/75 61304A/5A/535A/574A,/75	T1 75 E1	_	T1076NL	_	— PF-68826NI		PE-65351NL PE-65351NL				PE-65567NL PE-65568NL	PE-65838NL PE-65839NL	PE-65835NL PE-65835NL
	61304A/5A/535A/574A,/75	120 E1	_	_	_			PE-65351NL					PE-65839NL	PE-65835NL
	61582, 61583		PE-65870NL	— T4004NII		PE-68874NL					— DE 04054111		PE-65838NL	PE-65838NL
	61310, 61581 61310, 61581	Host	PE-68678NL —	T1094NL —	PE-688//NL	PE-688//NL		PE-64936NL PE-65351NL				PE-65568NL —	PE-65835NL PE-65835NL	PE-65835NL PE-65835NL
	61881		_	T1076NL	_	_	PE-65388NL	PE-65351NL	PE-65770NL	PE-65771NL	PE-65565NL	PE-65567NL	PE-65838NL	PE-65835NL
	61584/84A	103	PE-65861NL	T1090NL		PE-68841NL					PE-64951NL	_	PE-65835NL	PE-65835NL
Махим	61584/82/83/A DS2196	IQ5	PE-65870NL PE-68678NL	T1094NL	PE-68874NL PE-68877NL			PE-65388NL PE-64936NL			— PE-64951NL	PE-65568NL	PE-65838NL PE-65838NL	PE-65838NL PE-65838NL
(Dallas)	DS2151/2152/2153/2154		—	T1076NL	—	—		PE-64936NL					PE-65838NL	PE-65834NL
	DS2151/2152/2153/2154	01/	— —	T1091NL	— DE 00077NII			PE-64936NL					PE-65832NL	PE-65834NL
	DS2148/Q48 DS2148/Q48	3V 5V	PE-68678NL —	T1094NL T1091NL	PE-68877NL			PE-64936NL PF-64936NI				PE-65568NL PE-65774NL	PE-65838NL PF-65832NI	PE-65838NL PE-65834NL
	DS21352/Q352,DS21354/	•	PE-68678NL	T1094NL	PF-68877NI							PE-65568NL	PE-65838NL	PE-65838NL
	Q354 DS21552/Q552,DS21554/		1 E 0007014E		1 L 000//14L	1 L 000//11/L								
	Q554 DS21552/Qww52,DS21554/		_	T1076NL	_	_						PE-65567NL		PE-65834NL
Evan	Q554		— — DE 05001NII	T1091NL	— DE 00001NII							PE-65774NL	PE-65832NL	PE-65834NL
Exar	T5683A, 59L91 T5894,T5897,T5997		PE-65861NL PE-65861NL	T1090NL T1090NL	PE-68861NL PE-65861NL			PE-65415NL PE-65415NL				_	PE-65835NL PE-65835NL	PE-65835NL PE-65835NL
	T5791/93/94/95		PE-65 866NL	-								PE-65568NL	PE-65839NL	PE-65834NL
	T5894,T5897,T5997		— —	T1091NL	— DE 05004NII			PE-65415NL				PE-65774NL	PE-65832NL	PE-65835NL
	83L30/34/38 82L34/38		PE-65861NL —	T1090NL	PE-05861NL	PE-68841NL —	PE-65415NL	PE-05415NL	PE-65//INL	PE-65//INL	PE-64951NL —	_	PE-65835NL —	PE-65835NL —
	T5684,T7288,82D20		_	T1091NL	_	PE-68822NL	PE-64937NL	PE-65351NL	PE-65340NL	PE-65771NL	PE-64921NL	PE-65774NL	PE-65837NL	PE-65835NL
INFINEON	PEB 2254/55 PEB 2254/55	E1/T1 & J1 E1/T1 & J1	PE-68786NL T1023NL	_	_	_	_	_	_	_	_	_	PE-68788NL	PE-68788NL
TECHNOLOGIES	LXT 300/301	EI/II Q JI	PE-65861NL	T1090NL	PE-68861NL	PF-68841NI		PE-65351NL	PF-65771NI		— PE-64951NL		PE-65835NL	PE-65835NL
(LEVEL ONE)	LXT 304/305/307	T1,E1	PE-65861NL	T1090NL		PE-68841NL							PE-65835NL	PE-65835NL
	LXT 304/305/307	T1	_	T1076NL	— DE 00000NII	— DE 00000NII		PE-65351NL					PE-65838NL	PE-65835NL
	LXT 304/305/307 LX T 304/305/307	75E1,120E1 DSX-1, D4	_		PE-08800INL	PE-68826NL —		PE-65351NL PE-65351NL	PE-08004INL	PE-05//INL	PE-00000INL	PE-65568NL —	PE-65839NL —	PE-65835NL —
	LXT 310/317/318		PE-68678NL	T1094NL	_	_	PE-65351NL	PE-64936NL			PE-64954NL	_	PE-65835NL	PE-65834NL
	LXT 312/ 313/ 315	T1 E1	DE COCTONII	— T1094NL	— DE 60077NII	— PE-68877NL		PE-64936NL			DE GAOEANII	PE-64950NL	PE-65836NL PE-65835NL	PE-65834NL PE-65834NL
	LXT 331 LXT 331, LXT 332	T1,E1	PE-68678NL PE-65861NL			PE-68841NL							PE-65835NL	PE-65835NL
	LXT 331, LXT 332		_		_	_	PE-65558NL	PE-65351NL				_	_	_
	LXT 331, LXT 332 LXT 334, LXT 335	T1/E1	— PE-65861NL	T1076NL T1090NL	— DE 60061NII	— PE-68841NL		PE-65351NL				PE-65567NL	PE-65838NL PE-65835NL	PE-65835NL PE-65835NL
	LXT 334, LXT 335	120/75 E1	—	T1090NL	— —							PE-65771NL		PE-65835NL
	LXT 334, LXT 335	75 E1	_	_	PE-68866NL	PE-68826NL		PE-65351NL	PE-68664NL	PE-65771NL	PE-65566NL	PE-65568NL	PE-65839NL	PE-65835NL
	LXT 334, LXT 335 LXT 336		— PE-65861NL	T1090NL	— PF-68828NI	— PE-68828NL	T1054NL —	PE-64936NL PE-65351NL	_	— PF-65778NI	— PE-64951NL	_	_	— PE-65835NL
	LXT 350, LXT 351, LXT 359	T1,E1	PE-68678NL	T1094NL		PE-68877NL	PE-65351NL		PE-65771NL			_	PE-65835NL	PE-65834NL
	LXT 350, LXT 351	100 F1	_	T1076NL	_	_		PE-65351NL	PE-65770NL	PE-65771NL	PE-65565NL	PE-65567NL	PE-65838NL	PE-65835NL
	LXT 350, LXT 351 LXT 360/361/362/363	120 E1 T1,E1	— PE-68678NL	T1094NL	PE-68877NL	— PE-68877NL		PE-65351NL PE-64936NL	— PE-65771NL	PE-65778NL	PE-64954NL	_	PE-65835NL	— PE-65834NL
	LXT 360/361/362/363	,	_	T1076NL	_	_	PE-65388NL	PE-65351NL				PE-65567NL	PE-65838NL	PE-65835NL
	LXT 360, LXT361 LXT 380/381/384/386/388	120 E1 T1/E1	— PE-68678NL	T109/NJ	— PF-68877NII	— PE-68877NL		PE-65351NL PF-64936NI	— PF-65771NII	— PF-65779NII	— PE-64954	_	— PE-65835NL	— PE-65834NL
	LXT 380/381/384/386/388	T1/E1	PE-65861NL	T1094NL		PE-68841NL						_	PE-65835NL	PE-65835NL
	LXT 3104, LXT 3108			T1090NL	PE-68861NL	PE-68841NL	PE-64936NL	PE-64936NL	PE-65778NL	PE-65778NL	PE-64951NL	_	PE-65835NL	PE-65835NL
LUCENT	LXT 3104, LXT 3108 T7288, T290A	CEPT	TX1099NL —	TX1099NL T1091NL		PE-68822NI	PE-65586NI	— PE-65415NL	— PE-65340NI	PE-65771NI	PE-64921NI		— PE-65832NL	— PE-65835NL
TECHNOLOGIES	T7289A	DS1	_	T1076NL	_	_	PE-65379NL	PE-65351NL	PE-65770NL	PE-65771NL			PE-65838NL	PE-65835NL
	T7688, T7690, T7698 T7689, T7690, T7698	CEPT	DE GEOZONII	_		PE-68884NL					_	_	PE-65832NL	PE-65832NL
	T7693,T7697	DS1 CEPT	PE-65870NL T1137NL	— TX1287NL	7E-088/4NL —	PE-68874NL —	— -003/9NL	— — — — — — — — — — — — — — — — — — —	- LE-00//UNL	- LE-00//UNL	_	_	PE-65838NL —	PE-65838NL —
	TLIU04C1	DS1	PE-65870NL	_		PE-68874NL					_	_	PE-65838NL	PE-65838NL
7.00.000	TLIU04C1	CEPT	— T1127NII	TV1207NI	PE-68884NL	PE-68884NL	PE-65586NL	PE-65586NL	PE-65340NL	PE-65340NL	_		PE-65832NL	PE-65832NL
ZARLINK	MT9071, MT9076 MT9074, MT9075		T1137NL PE-68678NL	TX1287NL T1094NL	PE-68877NI	— PE-68877NL	PE-65351NL	— PE-64934NL	— PE-65771NL	— PE-65778NI	— PE-64954NL	— PE-65568NL	— PE-65835NL	— PE-65834NL
PMC-SIERRA	PM4318		_	T1091NL	_							PE-65774NL	PE-65832NL	PE-65835NL
	PM4351/4354	001:			PE-68861NL	PE-68841NL	PE-65351NL	PE-65351NL	PE-65771NL	PE-65771NL	PE-64951NL	_		PE-65835NL
		COMET	T1137NL	TX1287NL	_	_								

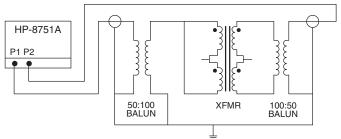
NOTE: For Quad Port Transceiver products, refer to data sheet T620. For Reinforced Insulation Models, refer to data sheet T617. For Octal SMT packages, refer to data sheet T622.

T1/CEPT/ISDN-PRI TRANSFORMERS

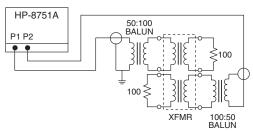


Application Notes

- 1. Extended Temperature Range Models For extended temperature range transformers (-40°C to +85°C operating temperature range), OCL (Open Circuit Inductance for the primary winding) is specified at both -40°C and +25°C. At -40°C, OCL is 600 μH minimum for all low temperature models with the exception of PE-68827NL which is 800 μH minimum and PE-65836NL which is 300 μH minimum. All other parameters are specified at +25°C only. Standard temperature range is 0°C to +70°C.
- 2. ET Product All coils have an ET product of 10 V-µsec minimum.
- Flammability Materials used in the products are recognized as UL94-VO approved. Products meet the requirements of IEC 695-2-2 (Needle Flame Test).
- Balance Characteristics The transformers meet the requirements for longitudinal balance of FCC part 68.
- Common Mode Rejection Ratio The CMRR for all transformers is better than 50 dB at 1 MHz. A typical test circuit is shown below.



6. Crosstalk Attenuation — In the dual packages, which contain transmit and receive transformers side by side, sufficient crosstalk attenuation is achieved by the inherent characteristics of the toroid cores as well as by their proper positioning. The crosstalk attenuation is typically 50 dB or better from 100 kHz to 10 MHz. This result was established with the test circuit shown below.



 Return Loss — ITU-T G.703 and European national regulatory documents specify minimum return loss levels. The transformers will allow these limits to be complied within the situations where they are applicable.

Frequency	50-100 kHz	100 kHz-2 MHz	2-3 MHz
Return Loss			
TX	9 dB	15 dB	11 dB
RX	12 dB	18 dB	14 dB

8. Surge Voltage Capability – All transformers and chokes meet surge voltage tests according to the most stringent regulatory documents when system designs include the proper voltage and current suppression devices:

Metallic Voltage: 800 V peak, 10/560 µsec Longitudinal Voltage: 2,400 V peak, 10/700 µsec

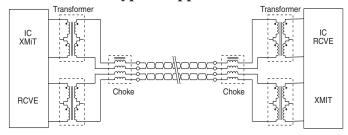
- Isolation Voltage 100% of transformers are tested during production to the specified isolation voltage level.
- Safety Agency Recognition Parts listed as "Recognized" or "Certified" meet Underwriter Laboratories, UL 1459 and UL 1950 per file E133523 (S).

Transformers with Reinforced Insulation according to IEC950 series PE-68630NL—PE-68788NL (pg. 3) are certified by the following organizations:

Code Certificate Information

- TÜV, EN 60 950/EN 41003, Cert. R9371358, reinforced insulation.
- U UL 1459/UL1950, File E133523 (S), reinforced insulation.
- 11. General Information The transformers are specifically designed for use in 1.544 Mbps (T1), 2.048 Mbps (CEPT) and ISDN Primary rate (PRI) interface applications. They are matched to the majority of the line interface transceiver ICs currently available. Use of the proper transformer allows the interface circuit to comply with ITU-T G.703 and other standards regarding pulse waveform, return loss, and balance.
- 12. Common Mode Chokes The "high-frequency" 4-lines common mode chokes shown in this data sheet provide an effective means of compliance with national and international regulations on EMI. They are designed to be used in conjunction with Pulse's T1/CEPT transformers as shown in the typical application below. Crosstalk is typically -70 dB at 1 MHz and -55 dB at 10 MHz.

Typical Application



NOTES FROM TABLES (pages 1 - 6):

- **A.** Toleranced leakage inductance: .30 μH min to .55 μH MAX.
- B. OCL (primary inductance) and LL (leakage inductance) are measured at the primary winding. Turns ratio is specified primary: secondary. (CT = Center Tap; CS = Split Center Tap).
- C. To make a 1CT:1 ratio from a 1CT:2CT ratio, use only one half of the secondary (2CT) winding.
- D. For Reinforced 3 kVrms Dual SMT Transformers, refer to data sheet T617. For Quad SMT Transformers, refer to data sheet T615. For Octal SMT Transformers, refer to data sheet T622.
- E. Dual Ratio Transformers: These transformers have tapped secondary windings to provide two turns ratios (T/R). Use the entire primary winding and connect the secondary pins listed below to obtain the desired turns ratio:

Part Number	Turns Ratio 1	Secondary Pins	Turns Ratio 2	Secondary Pins
PE-65837NL	1:1.08	3-5	1:1.36	1 - 5
PE-65839NL	1:1	3-5	1:1.26	1 - 5
PE-68646NL	1:1.58	3-5	1:2	1 - 5
PE-65389NL	1:1	3-5	1:1.26	1 - 5
PE-65566NL	1:1	2-3	1:1.26	1 - 3
PE-65568NL	1:1	2-3	1:1.26	1 - 3
PE-68866NL	1:1	2-3	1:1.26	1 - 3
PE-68826NL	1:1	2-3	1:1.26	1 - 3
PE-68664NL	1:1	3-5	1:1.26	1 - 5
PE-68836NL	1:1	2-3/5-6	1:1.26	1¾ - 6

- F. Standard packaging for surface mount "AN" and "LA" packages is anti-static tubes. Optional Tape & Reel packaging can be ordered by adding "T" suffix to the part number, (i.e. PE-65866NLT).
- **G.** PE-68618NL and PE-64950NL: The fault locate winding is (7-8).
- H. Safety Agency approvals pending.
- **I.** The turns ratio of these devices have been designed, in conjunction with semiconductor vendor recommendations, to allow connections to various terminations (e.g. 75 Ω or 120 Ω with the same transformer). For example T1075NL can be used with the Siemens PEB 2235 to achieve connection to the 75 Ω or 120 Ω cable. For 75 Ω termination, the PEB 2235 requires the following turns ratio: 1:1.57 (TX) and 1:1.26 (RX) which can be achieved using pins (1-2):(15-16) for TX and (10-11):(5-8) for RX. For 120 Ω , the following turns ratio are required: 1:2 (TX) and 1:1 (RX), which are pins (1-2):(16-14) for TX and (9-11):(5-8) for RX on the T1075NL.

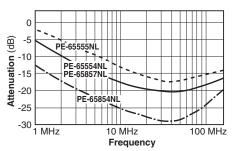
COMMON MODE CHOKES FOR TELECOM APPLICATIONS

For EMI Reduction

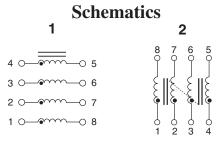


Electrical Specifications @ 25°C — Operating Temperature 0°C to 70°C											
Pulse Part Number	Turns Ratio (±5%)	OCL (µH MIN)	Package/Schematic								
HIGH FREQUENCY COMMON I	HIGH FREQUENCY COMMON MODE CHOKES, 4-LINES										
PE-65554NL	1:1:1:1	24.0	IN/1 (Through Hole)								
PE-65555NL	1:1:1:1	8.0	IN/1 (Through Hole)								
PE-65854NL	1:1:1:1	47.0	SH/1 (Surface Mount)								
PE-65857NL	1:1:1:1	24.0	LA/2 (Surface Mount)								

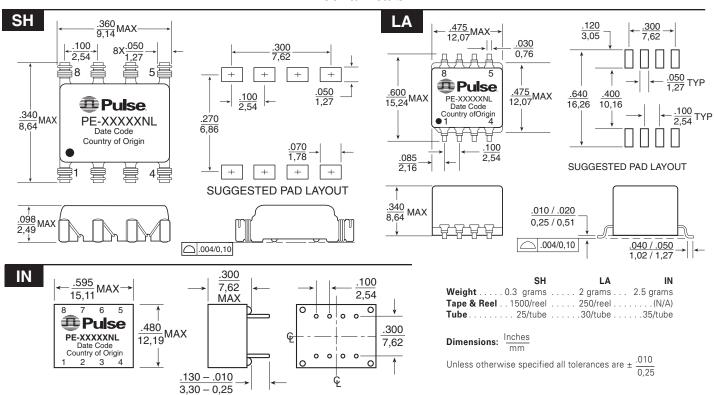
NOTE: For additional Common Mode Chokes, refer to data sheet G002.



Typical common mode attenuation for high-frequency common mode chokes based on a 100 Ω system.



Mechanicals



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