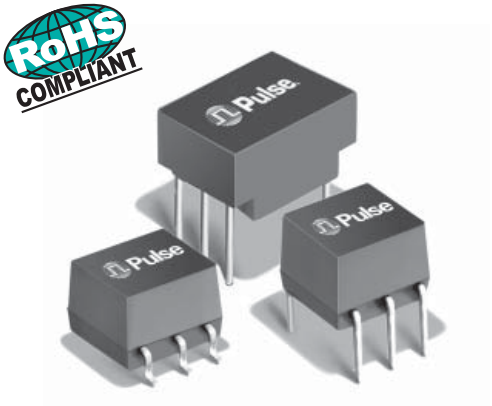
T3/DS3/E3/STS-1 TRANSFORMERS
Designed for T3, DS3, E3 and STS-1 Interfaces

Pulse
A TECHNITROL COMPANY



- RoHS peak reflow temperature rating: 245°C
- Return loss meets requirements of G.703
- Fast rise time compatible with standards
- Through hole and surface mount packages available
- UL recognized

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

RoHS Compliant Part Number	Turns Ratio (±2%)	OCL Primary (µH MIN)	OCL @ -40°C (µH MIN)	LL (µH MAX)	$C_{W/W}$ (pF MAX)	Bandwidth 75 Ω System (MHz TYP)	Isolation Voltage (Vrms MIN)	Package/ Schematic	Primary Pins
PE-65663NL	1:1	40	30	.12	13	–	1500	QC-1/A THT	2-6
PE-65664NL	1:2CT	35	20	.12	10	–	1500	QC-1/B THT	2-6
PE-65779NL	1:4CT	150	–	.30	15	–	1500	QC-1/B THT	2-6
PE-65856NL	1:1.73CT	50	–	.10	12	.060-300	1500	LC-1/C THT	4-6
PE-65966NL	1:1	40	–	.10	10	.200-340	1500	LC-1/E THT	4-6
PE-65967NL	1:1	40	–	.10	10	.200-340	1500	LS-1/E SMT	4-6
PE-65968NL	1:2CT	19	–	.06	10	.250-500	1500	LS-1/C SMT	4-6
PE-65969NL	1:2CT	19	–	.06	10	.250-500	1500	LC-1/C THT	4-6
PE-68629NL	1:1	40	–	.10	5	–	3000[4]	HC-1/A THT	1-5
PE-68630NL	1:2CT	19	–	.06	10	–	3000[4]	HC-1/D THT	1-5

Electrical Specifications @ 25°C

RoHS Compliant Part Number	Turns Ratio (Pri:Sec ±5%)	OCL@ 25°C (mHMIN)	$C_{W/W}$ (pF MAX)	L_L (µH MAX)	DCR Pri (Ω MAX)	DCR Sec (Ω MAX)	Isolation Voltage (Vrms MIN)	Package/ Schematic	Primary Pins
PE-64934NL	1:1	1.20	25	0.50	0.70	0.70	1500	HC-1/1S	1-2

Packaging Information

Package	Type	Part Weight	Parts/Tube	Parts/Reel	Reel Diameter	Tape Width	Pitch
LS-1	SMT	0.6 grams	70	600	13 inches	24mm	16mm
LC-1	THT	0.6 grams	65	—	—	—	—
HC-1	THT	1.2 grams	60	—	—	—	—
QC-1	THT	0.8 grams	60	—	—	—	—

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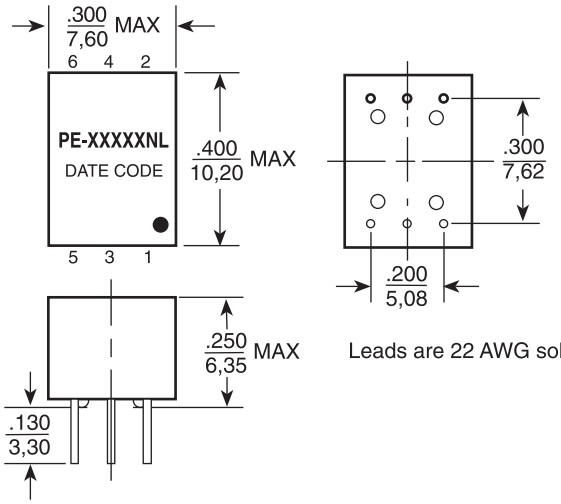
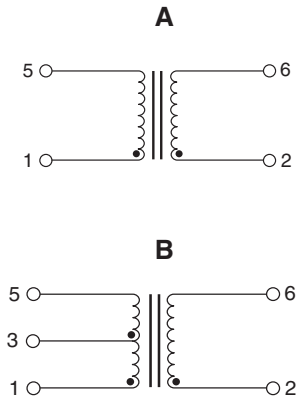
Mechanical

Schematic

QC-1



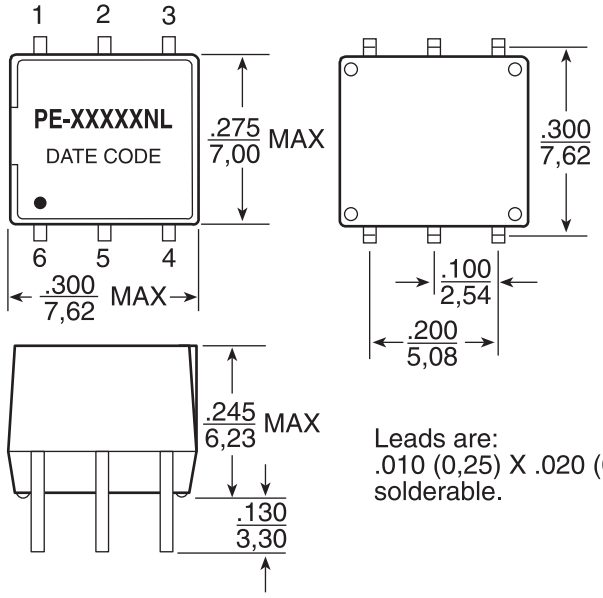
Leads are 22 AWG solderable.



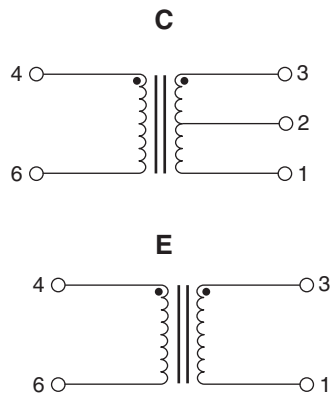
Dimensions: Inches / mm

Unless otherwise specified all tolerances are ±.010 / 0,25

LC-1



Leads are:
.010 (0,25) X .020 (0,51)
solderable.



Dimensions: Inches / mm

Unless otherwise specified all tolerances are ±.010 / 0,25

T3/DS3/E3/STS-1 TRANSFORMERS
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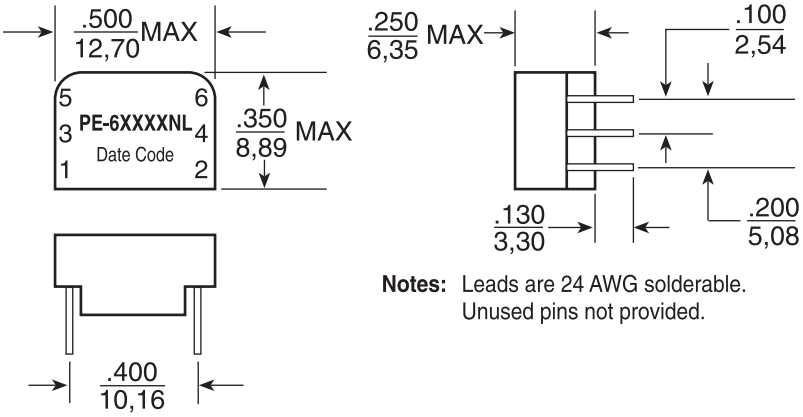
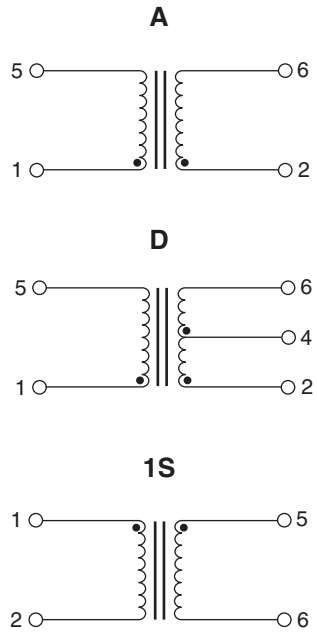
Mechanical

Schematic

HC-1



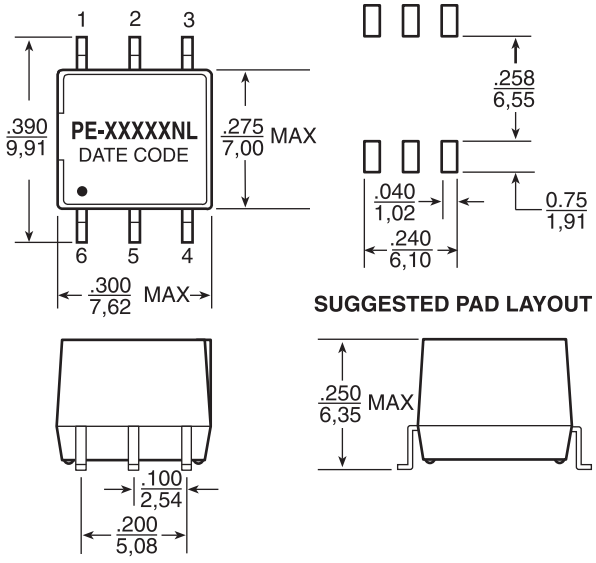
Notes: Leads are 24 AWG solderable.
Unused pins not provided.

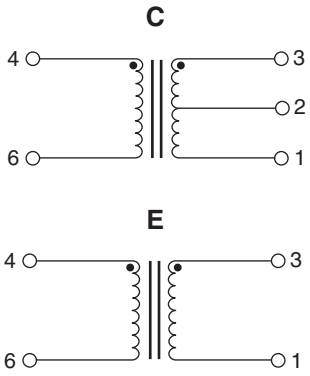


Dimensions: Inches / mm

Unless otherwise specified all tolerances are ±.010 / 0,25

LS-1





Dimensions: Inches / mm

Unless otherwise specified all tolerances are ±.010 / 0,25

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Transformer Selection Guide

Chip Manufacturer	IC	Surface Mount		Through Hole (1500 VRMS)		Through Hole (3000 VRMS)	
		Transmit	Receive	Transmit	Receive	Transmit	Receive
Lucent	T7296	PE-65967NL	—	PE-65966NL	—	PE-68629NL	—
Exar	XR-T7296	PE-65967NL	—	PE-65966NL	—	PE-68629NL	—
Silicon Systems	SSI 78P236, DS3	PE-65968NL	PE-65967NL	PE-65969NL	PE-65966NL	PE-68630NL	PE-68629NL
	SSI 78P7200, DS3	PE-65968NL	PE-65967NL	PE-65969NL	PE-65966NL	PE-68630NL	PE-68629NL
	SSI 78P7200, E3	PE-65968NL	PE-65968NL	PE-65969NL	PE-65969NL	PE-68630NL	PE-68630NL
	SSI 78P2361, STS-1	PE-65968NL	PE-65967NL	PE-65969NL	PE-65966NL	PE-68630NL	PE-68629NL
	SSI 78P2362, E3	PE-65968NL	PE-65967NL	PE-65969NL	PE-65966NL	PE-68630NL	PE-68629NL
Transwitch	MRT TXC-02050 [4] E3	PE-65968NL	PE-65967NL	PE-65969NL	PE-65966NL	PE-68630NL	PE-68629NL
	ART 02020 DS3, STS-1	PE-65967NL	PE-65967NL	PE-65966NL	PE-65966NL	PE-68629NL	PE-68629NL

Application Notes

1. The transformers have been developed for use as transmit and receive transformers in T3 or DS3 links, using bit rates of 44.736 Mbps and B3ZS coding on coaxial cable. The characteristics allow compliance with the pulse templates of CCITT G.703 as well as ATT T.A.34. The transformers are also suitable for the E3 interface at 34.368 Mbps with HDB3 coding or STS-1 applications, at 51.84 Mbps according to Bellcore TA-NWT-000253. The LC-1 and QC-1 packages are pin-compatible with T1-1 and T4-1 6-pin DIP packages.
2. Bandwidth specifications are typical in a 75 Ω system. Return loss meets the requirements of G.703. Materials used in the products are UL94-V0 recognized. Products meet the requirements of IEC 695-2-2 (Needle Flame Test).
3. The surface mount LS-1package is available with optional Tape & Reel packaging. To order, add a "T" suffix to the part number (e.g. PE-65967NLT).
4. The Transwitch MRT TXC-02050 chip is also designed to operate in 6.312 and 8.448 Mbps interfaces. A 1:1 transformer (PE-64934) is recommended.

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