

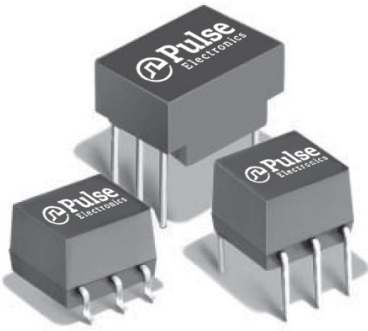


**THE DATASHEET OF  
PE-65967NL**



# T3/DS3/E3/STS-1 TRANSFORMERS

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



- 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) | L <sub>L</sub> (μH MAX) | C <sub>w/w</sub> (pF MAX) | Bandwidth 75 System (MHzTYP) | Isolation Voltage (Vrms MIN) | Package/Schematic | Primary Pins |
|----------------------------|-------------------|----------------------|----------------------|-------------------------|---------------------------|------------------------------|------------------------------|-------------------|--------------|
| 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                        | .60-300                      | 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                         | HC-1/A THT        | 1-5          |

## Electrical Specifications @ 25°C

| RoHS Compliant Part Number | Turns Ratio (Pri:Sec ±5%) | OCL @ 25°C (mH MIN) | C <sub>w/w</sub> (mH MIN) | L <sub>L</sub> (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/IS           | 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         | -          | -             | -          | -     |

USA 858 674 8100

Germany 49 7032 7806 0

Singapore 65 6287 8998

Shanghai 86 21 62787060

China 86 755 33966678

Taiwan 886 3 4356768

# T3/DS3/E3/STS-1 TRANSFORMERS

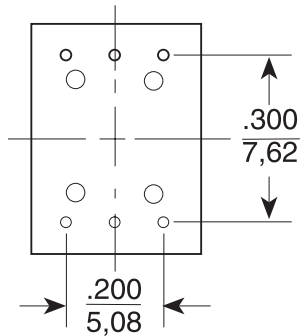
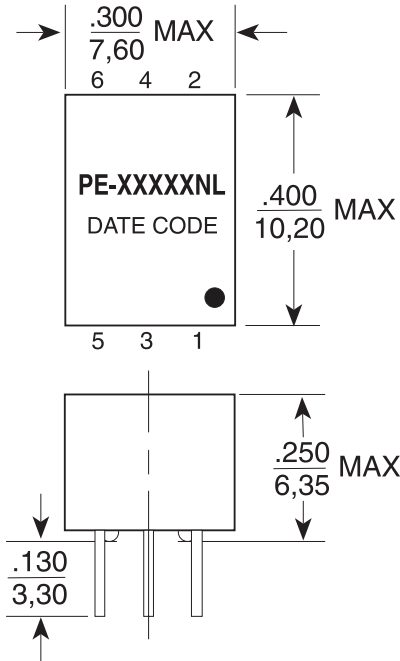
Designed for T3, DS3, E3 and STS-1 Interfaces



## Mechanicals

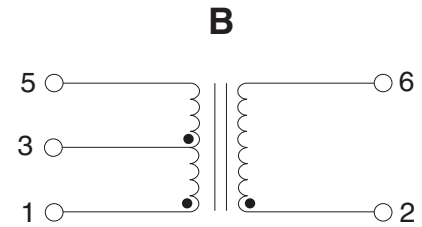
## Schematics

QC-1

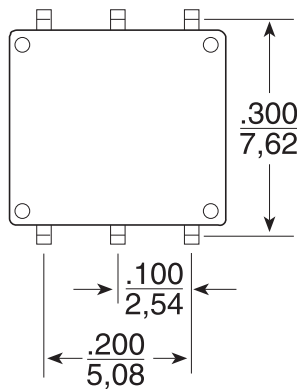
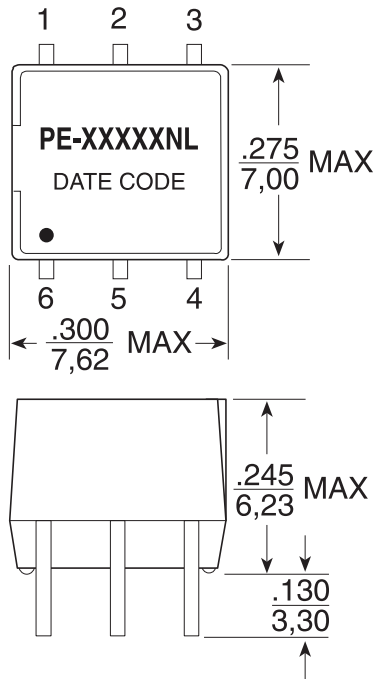


Leads are 22 AWG solderable.

Dimensions:  $\frac{\text{Inches}}{\text{mm}}$  Unless otherwise specified, all tolerances are  $\pm \frac{.010}{0,25}$

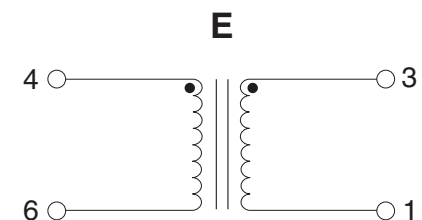
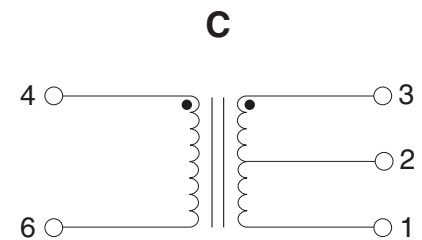


LC-1



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

Dimensions:  $\frac{\text{Inches}}{\text{mm}}$  Unless otherwise specified, all tolerances are  $\pm \frac{.010}{0,25}$



# T3/DS3/E3/STS-1 TRANSFORMERS

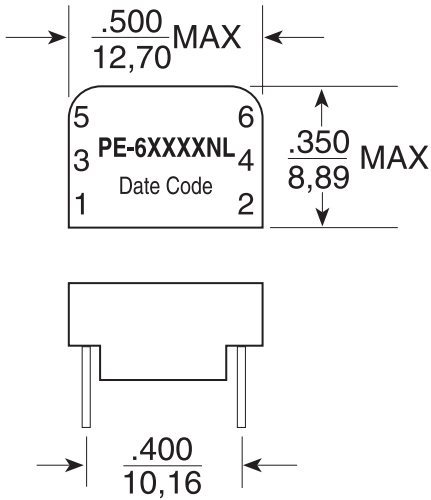
Designed for T3, DS3, E3 and STS-1 Interfaces



## Mechanicals

## Schematics

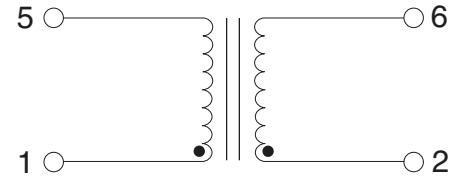
### HC-1



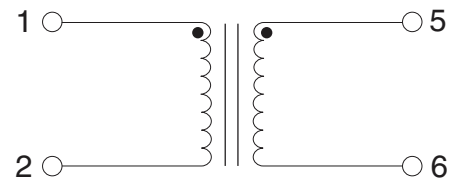
**Notes:** Leads are 24 AWG solderable.  
 Unused pins not provided.

**Dimensions:**  $\frac{\text{Inches}}{\text{mm}}$  Unless otherwise specified, all tolerances are  $\pm \frac{.010}{0,25}$

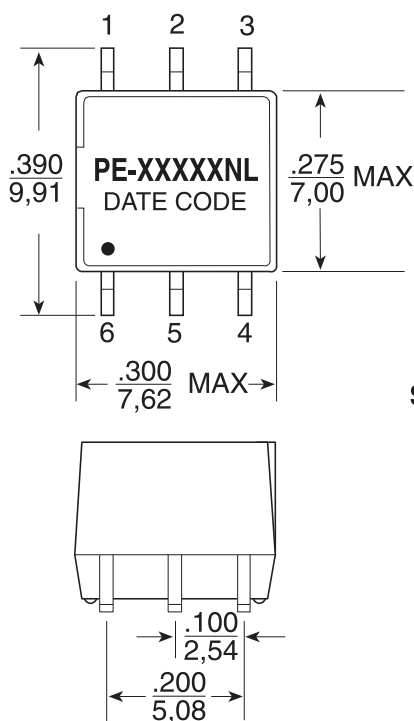
### A



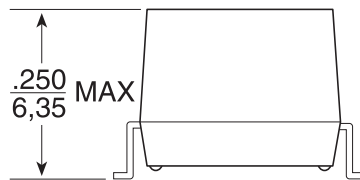
### 1S



### LS-1

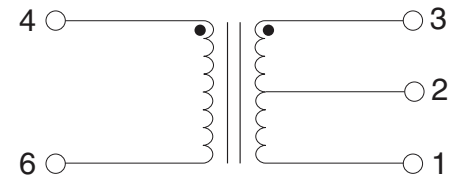


### SUGGESTED PAD LAYOUT

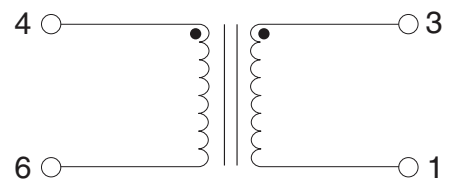


**Dimensions:**  $\frac{\text{Inches}}{\text{mm}}$  Unless otherwise specified, all tolerances are  $\pm \frac{.010}{0,25}$

### C



### E



# T3/DS3/E3/STS-1 TRANSFORMERS

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

| 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-68629NL |
|                             | SSI 78P7200, DS3     | PE-65968NL    | PE-65967NL | PE-65969NL               | PE-65966NL | -                        | PE-68629NL |
|                             | SSI 78P7200, E3      | PE-65968NL    | PE-65968NL | PE-65969NL               | PE-65966NL | -                        | -          |
|                             | SSI 78P2361, STS-1   | PE-65968NL    | PE-65967NL | PE-65969NL               | PE-65966NL | -                        | PE-68629NL |
|                             | SSI 78P2362, E3      | PE-65968NL    | PE-65967NL | PE-65969NL               | PE-65966NL | -                        | PE-68629NL |
| Transwitch                  | MRT TXC-02050 E3     | PE-65968NL    | PE-65967NL | PE-65969NL               | PE-65966NL | -                        | PE-68629NL |
|                             | ART 02020 DS3, STS-1 | PE-65967NL    | PE-65967NL | PE-65966NL               | PE-65966NL | PE-68629NL               | PE-68629NL |

## Application Notes

- 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 E3 interfacing 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.
- 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).
- The surface mount LS-1 package is available with optional Tape & Reel packaging. To order, add a "T" suffix to the part number (e.g. PE-65967NL<sup>T</sup>).
- 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.

## For More Information

**Pulse Worldwide Headquarters**  
12220 World Trade Drive  
San Diego, CA  
92128  
U.S.A.

Tel: 858 674 8100  
Fax: 858 674 8262

**Pulse Europe**  
Einsteinstrasse 1  
D-71083 Herrenberg  
Germany

Tel: 49 7032 78060  
Fax: 49 7032 7806 135

**Pulse China Headquarters**  
B402, Shenzhen Academy of  
Aerospace Technology Bldg.  
10th Kejinan Road  
High-Tech Zone  
Nanshan District  
Shenzhen, PR China  
518057  
Tel: 86 755 33966678  
Fax: 86 755 33966700

**Pulse North China**  
Room 2704/2705  
Super Ocean Finance  
Ctr.  
2067 Yan An Road  
West  
Shanghai 200336  
China  
Tel: 86 21 62787060  
Fax: 86 2162786973

**Pulse South Asia**  
135 Joo Seng Road  
#03-02  
PM Industrial Bldg.  
Singapore 368363  
Tel: 65 6287 8998  
Fax: 65 6287 8998

**Pulse North Asia**  
3F, No. 198  
Zhongyuan Road  
Zhongli City  
Taoyuan County 320  
Taiwan R. O. C.  
Tel: 886 3 4356768  
Fax: 886 3 4356823 (Pulse)  
Fax: 886 3 4356820 (FRE)

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