

# T3/DS3/E3/STS-1 TRANSFORMERS

## Extended Temperature Range



- Operating temperature of -40°C to +85°C
- Models matched to leading transceiver ICs
- Return loss meets requirements of G.703
- UL recognized (some parts pending)

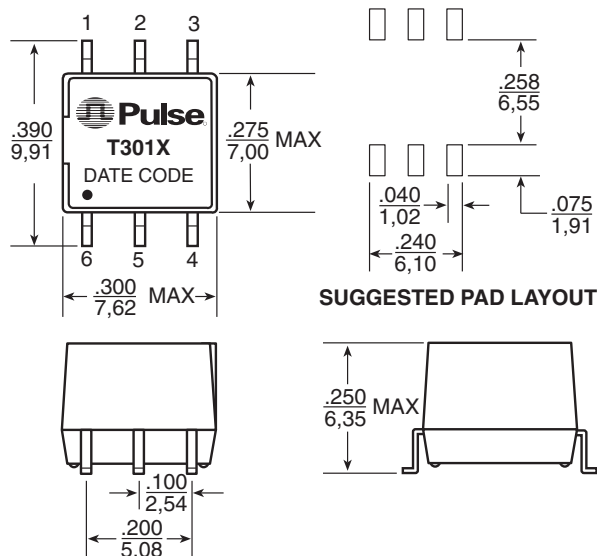
### Electrical Specifications @ 25°C — Operating Temperature -40°C to +85°C

| RoHS-5 Part No. | RoHS-6 Part No. | Turns Ratio Pri:Sec (±2%) | OCL Primary @ 25°C (μH MIN) | OCL Primary @ -40°C (μH MIN) | L <sub>L</sub> @ 100kHz 0.2Vrms (μH TYP) | C <sub>w/w</sub> (pF MAX) | Bandwidth 75Ω System (MHz TYP) | Isolation Voltage (Vrms MIN) | Package/ Schematic | Primary Pins |
|-----------------|-----------------|---------------------------|-----------------------------|------------------------------|------------------------------------------|---------------------------|--------------------------------|------------------------------|--------------------|--------------|
| T3001           | T3001NL         | 1:1                       | 100                         | 40                           | .110                                     | 10                        | .200 - 340                     | 1500                         | LS-2/E             | 1-3          |
| T3002           | T3002NL         | 1:2CT                     | 40                          | 19                           | .110                                     | 12                        | .250 - 500                     | 1500                         | LS-2/C             | 4-6          |
| T3011*          | T3011NL*        | 1:1                       | 100                         | 40                           | .110                                     | 10                        | .200 - 340                     | 1500                         | LS-1/E             | 4-6          |
| T3012*          | T3012NL*        | 1:2CT                     | 40                          | 19                           | .110                                     | 12                        | .250 - 500                     | 1500                         | LS-1/C             | 4-6          |
| T3027           | T3027NL         | 1CT:1CT                   | 40                          | 19                           | .10                                      | 10                        | .200 - 340                     | 1500                         | LS-2/F             | 1-3          |
| T3029           | T3029NL         | 1:1.155CT                 | 40                          | 20                           | .150                                     | 12                        | .200 - 340                     | 1500                         | LS-2/C             | 4-6          |

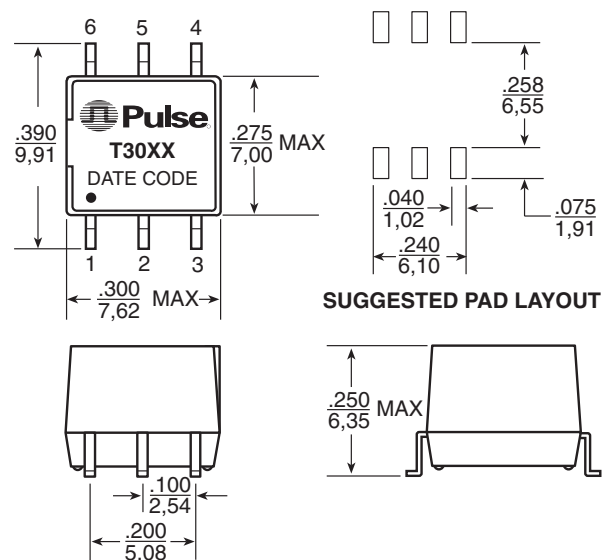
\*Models with alternate pinout configurations.

## Mechanicals

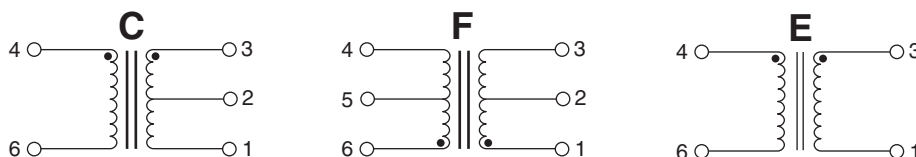
### LS-1



### LS-2



## Schematics



Weight ..... 0.6 grams  
Tape & Reel ..... .600/reel  
Tube ..... .70/tube

Dimensions: Inches  
mm

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

# T3/DS3/E3/STS-1 TRANSFORMERS

## Extended Temperature Range



### Transformer Selection Guide

| IC Manufacturer/<br>IC Part Number                                                                                                                              | Single SMT                                                                       |                                                                                  |                                                             |                                                             | Single THT                                                                       |                                                                                  | Single THT (3 kVrms)                                                             |                                                                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
|                                                                                                                                                                 | Standard Temperature                                                             |                                                                                  | Extended Temperature                                        |                                                             | Transmit                                                                         | Receive                                                                          | Transmit                                                                         | Receive                                                                          |
|                                                                                                                                                                 | Transmit                                                                         | Receive                                                                          | Transmit                                                    | Receive                                                     |                                                                                  |                                                                                  |                                                                                  |                                                                                  |
| <b>Conexant (Rockwell)</b><br>CN8331, CN8332, CN8333                                                                                                            | PE-65967                                                                         | PE-65967                                                                         | T3001                                                       | T3001                                                       | PE-65966                                                                         | PE-65966                                                                         | PE-68629                                                                         | PE-68629                                                                         |
| <b>Infineon Technologies</b><br>PEB3452                                                                                                                         | –                                                                                | –                                                                                | T3027                                                       | T3011/T3001                                                 | –                                                                                | –                                                                                | –                                                                                | –                                                                                |
| <b>Lucent Technologies</b><br>T7296                                                                                                                             | PE-65967                                                                         | –                                                                                | T3001                                                       | –                                                           | PE-65966                                                                         | –                                                                                | PE-68629                                                                         | –                                                                                |
| <b>Exar</b><br>XRT7295, XRT7295E<br>XRT7296, XRT7298<br>XRT73L00/L03/L04<br>XRT7300, XRT7302                                                                    | –<br>PE-65967<br>PE-65967<br>PE-65967                                            | PE-65967<br>–<br>PE-65967<br>PE-65967                                            | –<br>T3001<br>T3001<br>T3001                                | T3001<br>–<br>T3001<br>T3001                                | –<br>PE-65966<br>PE-65966<br>PE-65966                                            | PE-65966<br>–<br>PE-65966<br>PE-65966                                            | –<br>PE-68629<br>PE-68629<br>PE-68629                                            | PE-68629<br>–<br>PE-68629<br>PE-68629                                            |
| <b>TDK Semiconductor</b><br>78P2241<br>78P2244/43/42<br>78P7200L<br>78P7200<br>78P2361, 78P2362                                                                 | PE-65968<br>PE-65968<br>PE-65968<br>PE-65968<br>PE-65968                         | PE-65967<br>PE-65967<br>PE-65967<br>PE-65967<br>PE-65967                         | T3002<br>T3002<br>T3002<br>T3002<br>T3002                   | T3001<br>T3001<br>T3001<br>T3002<br>T3001                   | PE-65969<br>PE-65969<br>PE-65969<br>PE-65969<br>PE-65969                         | PE-65966<br>PE-65966<br>PE-65966<br>PE-65969<br>PE-65966                         | PE-68630<br>PE-68630<br>PE-68630<br>PE-68630<br>PE-68630                         | PE-68629<br>PE-68629<br>PE-68629<br>PE-68630<br>PE-68629                         |
| <b>Transwitch</b><br>MRT TXC-02050, E3<br>ART TXC-02020<br>ARTE TXC-02021<br>DART TXC-2030, DS3<br>DART TXC-2030, E3<br>DS3LIM-SN TXC-20153G<br>E3LIM TXC-20163 | PE-65968<br>PE-65967<br>PE-65967<br>PE-65967<br>PE-65968<br>PE-65967<br>PE-65968 | PE-65967<br>PE-65967<br>PE-65967<br>PE-65967<br>PE-65967<br>PE-65967<br>PE-65967 | T3002<br>T3001<br>T3001<br>T3001<br>T3002<br>T3001<br>T3002 | T3001<br>T3001<br>T3001<br>T3001<br>T3001<br>T3001<br>T3001 | PE-65969<br>PE-65966<br>PE-65966<br>PE-65966<br>PE-65969<br>PE-65966<br>PE-65966 | PE-65966<br>PE-65966<br>PE-65966<br>PE-65966<br>PE-65966<br>PE-65966<br>PE-65966 | PE-68630<br>PE-68629<br>PE-68629<br>PE-68629<br>PE-68630<br>PE-68629<br>PE-68629 | PE-68629<br>PE-68629<br>PE-68629<br>PE-68629<br>PE-68629<br>PE-68629<br>PE-68629 |

NOTE: For Standard temperature products, please see data sheet **T606**.

## Application Notes

1. The transformers have been developed for use as transmit and receive transformers in T3 or DS3 links, using bit rates of 44.736Mbps 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 34.368Mbps with HDB3 coding or STS-1 applications, at 51.84Mbps according to Bellcore TA-NWT-000253.
2. Bandwidth specifications are typical in a 75Ω 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 package is available with optional tape and reel packaging. To order, add a "T" suffix to the part number (i.e.: T3001NLT).

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