







# RF TRANSFORMERS

## Transformers for Wideband RF Applications



-  RoHS peak reflow temperature rating: 245°C
-  Miniature surface mount package
-  Various impedance ratios available
-  Excellent insertion loss
-  Ideal for Balanced-to-Unbalanced applications
-  Products from 0.05 to 1900 MHz bandwidth

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

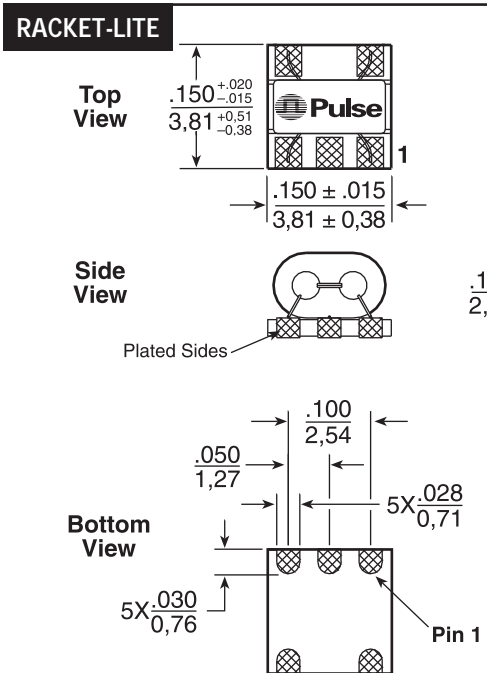
| RoHS Compliant Part Number | Impedance Ratio <sup>1</sup> Pri:Sec | Turns Ratio Pri:Sec (±2%) | Bandwidth <sup>2,3</sup> (MHz TYP) |          |          | Insertion Loss @ Midband (dB TYP) | Schematic | Primary Pins |
|----------------------------|--------------------------------------|---------------------------|------------------------------------|----------|----------|-----------------------------------|-----------|--------------|
|                            |                                      |                           | 3 dB                               | 2 dB     | 1 dB     |                                   |           |              |
| CX2041NL                   | 1:1CT                                | 1:1CT                     | 0.05-450                           | 0.75-300 | 0.10-200 | 0.60                              | B         | 4-6          |
| CX2040LNL                  | 1:1                                  | 1:1                       | 1.5-500                            | 2.5-400  | 5-350    | 0.90                              | A         | 4-6          |
| CX2043LNL                  | 1.5:1                                | $\sqrt{1.5}:1$            | —                                  | —        | 1-1000   | 0.20                              | D         | 3-6          |
| CX2044LNL                  | 1.5:1                                | $\sqrt{1.5}:1$            | —                                  | 1.0-500  | 5-100    | 0.20                              | A         | 1-3          |
| CX2045LNL                  | 1:2CT                                | 1:1.414CT                 | —                                  | —        | 3-300    | 0.80                              | B         | 4-6          |
| CX2047LNL                  | 1:4CT                                | 1:2CT                     | —                                  | 0.5-300  | 1.5-100  | 0.24                              | B         | 4-6          |
| CX2049LNL                  | 1:8CT                                | 1:2.83CT                  | .25-500                            | 0.3-400  | 0.5-200  | 1.16                              | B         | 4-6          |
| CX2029LNL                  | 36:1CT                               | 6:1CT                     | 0.05-21                            | —        | —        | 0.40                              | B         | 4-6          |
| CX2163LNL                  | 1:1                                  | 1:1                       | 800-1900                           | —        | 900-1400 | 1.50                              | E         | 1-3          |

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

| RoHS Compliant Part Number | Impedance Ratio <sup>1</sup> Pri:Sec | Bandwidth <sup>2,3</sup> (MHz TYP) |          | Schematic | Primary Pins |
|----------------------------|--------------------------------------|------------------------------------|----------|-----------|--------------|
|                            |                                      | 2 dB                               | 1 dB     |           |              |
| CX2038LNL                  | 75 Ω:75 Ω                            | Up to 1500                         | 4.5-1000 | C         | 4-6          |
| CX2039LNL                  | 50 Ω:50 Ω                            | Up to 1500                         | 4.5-1000 | C         | 4-6          |

NOTE: Optional Tape & Reel packaging can be ordered by adding a "T" suffix to the part number, e.g. CX2041NLT, CX2163NLT.

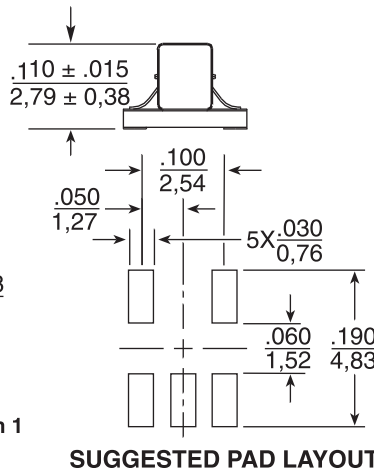
## Mechanical



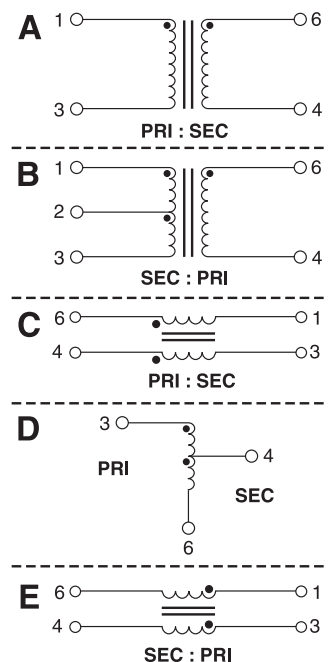
Tape & Reel . . . . . 2000 /reel  
 Tray . . . . . 100 /tray  
 Power Rating . . . 30 mA MAX; 0.25 W MAX

Dimensions: Inches  
 mm

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



## Schematic



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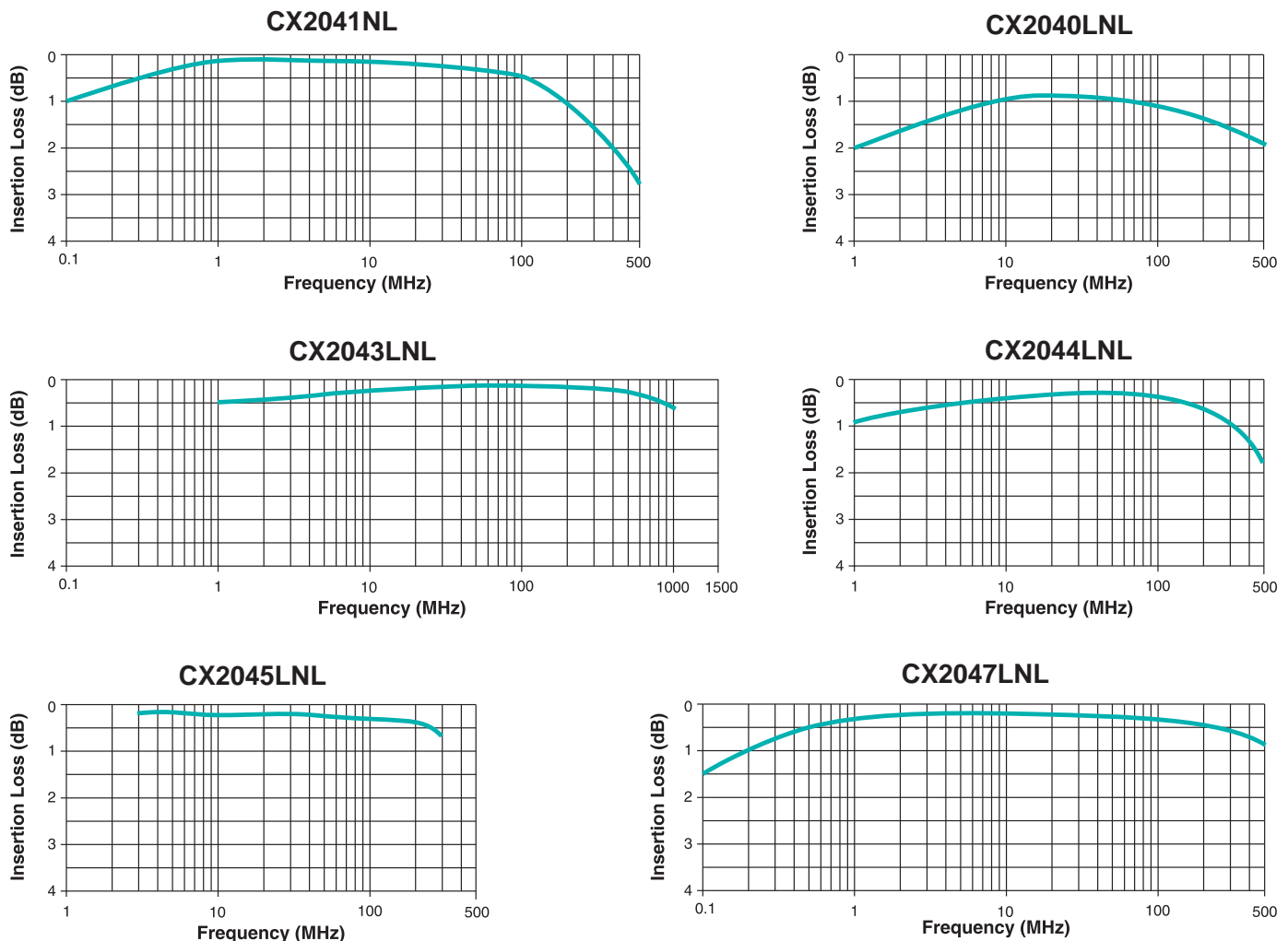
### Notes from Tables

1. Impedance and turns ratios are specified primary:secondary. (CT=Center Tap).
2. Bandwidth is referenced to midband loss.
3. These transformers are verified to operate from -40°C to +85°C. Contact Pulse Applications Engineering for performance data.

### Application Notes

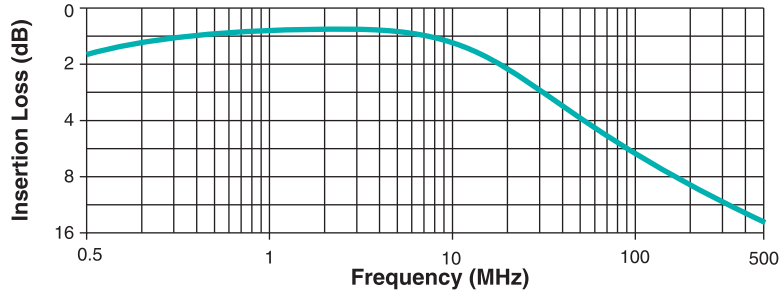
- A. Bandwidth specifications for **CX2040LNL** and **CX2047LNL** are for a 50 Ω system.
- B. Materials used in the products are UL94-V0 recognized. Products meet requirements of IEC 695-2-2 (Needle Flame Test).
- C. **CX2038LNL**, **CX2039LNL**, and **CX2043LNL** transformer configurations do not provide DC isolation between primary and secondary windings.
- D. For additional impedance ratios and frequency ranges, please contact Pulse Applications Engineering.
- E. Pick and place operation: smooth upper surface of device allows automatic pick and place.
- F. For availability of lead-free version of this product, please contact Pulse.

### Typical Insertion Loss @ 25°C

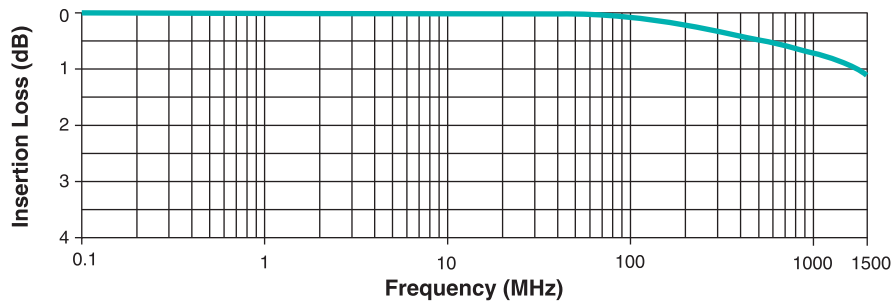


## Typical Insertion Loss @ 25°C

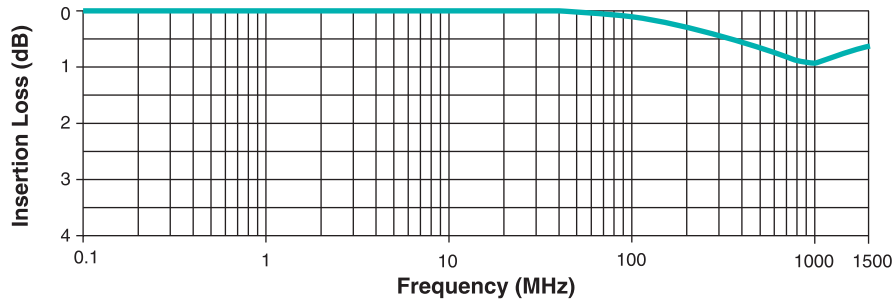
**CX2029NL**



**CX2038LNL**



**CX2039LNL**



### For More Information:

**Pulse Worldwide Headquarters**

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

[www.pulseeng.com](http://www.pulseeng.com)

Tel: 858 674 8100  
Fax: 858 674 8262

**Pulse Europe**

Zeppelinstrasse 15  
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 2704/2705  
Super Ocean Finance Ctr.  
2067 Yan An Rd. West  
Shanghai 200336  
China

Tel: 86 21 62787060  
Fax: 86 2162786973

**Pulse South Asia**

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

Tel: 65 6287 8998  
Fax: 65 6287 8998

**Pulse North Asia**

3F, No. 198  
Zhongyuan Rd.  
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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