



# Surface Mount Wideband RF Transformers



- Provides wide band pass performance in a small SMT package.
- 1812 size ferrite body with a ceramic base.
- 50 V isolation, 1/4 Watt RF input power

**Core material** Ferrite

**Terminations** RoHS compliant gold over nickel over moly-manganese. Other terminations available at additional cost.

**Weight** 131 – 152 mg

**Ambient temperature** –40°C to +85°C with Irms current

**Storage temperature** Component: –40°C to +85°C.  
Tape and reel packaging: –40°C to +80°C

**Resistance to soldering heat** Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

**Moisture Sensitivity Level (MSL)** 1 (unlimited floor life at <30°C / 85% relative humidity)

**Failures in Time (FIT) / Mean Time Between Failures (MTBF)**

One per billion hours / one billion hours, calculated per Telcordia SR-332

**Packaging** 600/7" reel; 2200/13" reel Plastic tape: 12 mm wide, 0.3 mm thick, 8 mm pocket spacing, 3.7 mm pocket depth

**PCB washing** Tested with pure water or alcohol only. For other solvents, see Doc787\_PCB\_Washing.pdf.

## 1:1 Transformers

| Part number <sup>1</sup> | Inductance <sup>2</sup> (μH) | Test frequency (MHz) | Imp. ratio pri : sec | DCR max (Ohms) | I <sub>DC</sub> (mA) | Isolation (Vrms) | Insertion loss (dB) | Bandwidth (MHz) | Color dot |
|--------------------------|------------------------------|----------------------|----------------------|----------------|----------------------|------------------|---------------------|-----------------|-----------|
| 1812WBT-1L_              | 14                           | 10                   | 1:1                  | 4.8            | 200                  | 50               | <1                  | 0.340–22        | Yellow    |
| 1812WBT-2L_              | 5.3                          | 10                   | 1:1                  | 1.8            | 400                  | 50               | <1                  | 0.800–60        | Green     |
| 1812WBT-3L_              | 1.25                         | 50                   | 1:1                  | 0.7            | 500                  | 50               | <1                  | 4–200           | White     |
| 1812WBT-4L_              | 0.220                        | 50                   | 1:1                  | 0.3            | 700                  | 50               | <1                  | 11–480          | Orange    |
| 1812WBT-5L_              | 0.090                        | 50                   | 1:1                  | 0.15           | 700                  | 50               | <1.5                | 48–645          | Red       |

## 1.5:1 Transformers

| Part number <sup>1</sup> | Inductance (μH) <sup>2</sup> |       | Test freq. (MHz) | Imp. ratio pri : sec | DCR max (Ω) |      | I <sub>DC</sub> (mA) | Isolation (Vrms) | Insertion loss (dB) | Bandwidth (MHz) | Color dot |
|--------------------------|------------------------------|-------|------------------|----------------------|-------------|------|----------------------|------------------|---------------------|-----------------|-----------|
|                          | pri                          | sec   |                  |                      | pri         | sec  |                      |                  |                     |                 |           |
| 1812WBT1.5-1L_           | 5.0                          | 3.3   | 10               | 1.5:1                | 1.05        | 0.87 | 400                  | 50               | <0.5                | 1.3–100         | Red       |
| 1812WBT1.5-2L_           | 2.5                          | 1.6   | 10               | 1.5:1                | 0.74        | 0.58 | 500                  | 50               | <0.5                | 2.75–135        | Orange    |
| 1812WBT1.5-3L_           | 1.0                          | 0.60  | 10               | 1.5:1                | 0.43        | 0.34 | 500                  | 50               | <0.75               | 7.2–200         | Yellow    |
| 1812WBT1.5-4L_           | 0.144                        | 0.090 | 10               | 1.5:1                | 0.18        | 0.14 | 700                  | 50               | <2.25               | 38–535          | Green     |

## 2:1 Transformers

| Part number <sup>1</sup> | Inductance (μH) <sup>2</sup> |       | Test freq. (MHz) | Imp. ratio pri : sec | DCR max (Ω) |      | I <sub>DC</sub> (mA) | Isolation (Vrms) | Insertion loss (dB) | Bandwidth (MHz) | Color dot |
|--------------------------|------------------------------|-------|------------------|----------------------|-------------|------|----------------------|------------------|---------------------|-----------------|-----------|
|                          | pri                          | sec   |                  |                      | pri         | sec  |                      |                  |                     |                 |           |
| 1812WBT2-1L_             | 13.80                        | 6.90  | 10               | 2:1                  | 4.6         | 3.2  | 200                  | 50               | <1.5                | 0.800–23        | Brown     |
| 1812WBT2-2L_             | 5.850                        | 2.925 | 10               | 2:1                  | 1.25        | 0.95 | 400                  | 50               | <1.5                | 2.2–65          | Red       |
| 1812WBT2-3L_             | 2.60                         | 1.30  | 10               | 2:1                  | 0.52        | 0.42 | 600                  | 50               | <1.5                | 4–105           | Orange    |
| 1812WBT2-4L_             | 0.910                        | 0.455 | 50               | 2:1                  | 0.27        | 0.23 | 700                  | 50               | <1.5                | 11–200          | Yellow    |

1. When ordering, please specify **termination** and **packaging** codes:

**1812WBT1.5-4LC**

**Termination:** E = RoHS compliant gold over nickel over moly-manganese  
Special order: T = RoHS tin-silver-copper (95.5/4/0.5) or S = non-RoHS tin-lead (63/37).

**Packaging:** C = 7" machine-ready reel. EIA-481 embossed plastic tape (600 parts per full reel).  
B = Less than full reel. In tape, but not machine ready. To have a leader and trailer added (\$25 charge), use code letter C instead.  
D = 13" machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked (2200 parts per full reel).

2. Inductance is per winding

3. Electrical specifications at 25°C. Measurements are referenced to 50 Ohms.

Refer to Doc 362 "Soldering Surface Mount Components" before soldering.



www.coilcraft.com

**US** +1-847-639-6400 sales@coilcraft.com  
**UK** +44-1236-730595 sales@coilcraft-europe.com  
**Taiwan** +886-2-2264 3646 sales@coilcraft.com.tw  
**China** +86-21-6218 8074 sales@coilcraft.com.cn  
**Singapore** +65-6484 8412 sales@coilcraft.com.sg

Document 117E-1 Revised 03/23/06

© Coilcraft Inc. 2013

This product may not be used in medical or high risk applications without prior Coilcraft approval. Specification subject to change without notice. Please check web site for latest information.



### Typical Frequency Attenuation 1:1 Transformers



### Typical Frequency Attenuation 1.5:1 Transformers



### Typical Frequency Attenuation 2:1 Transformers



Measured on a network analyzer (re: 50 Ohms)



**US** +1-847-639-6400 sales@coilcraft.com  
**UK** +44-1236-730595 sales@coilcraft-europe.com  
**Taiwan** +886-2-2264 3646 sales@coilcraft.com.tw  
**China** +86-21-6218 8074 sales@coilcraft.com.cn  
**Singapore** + 65-6484 8412 sales@coilcraft.com.sg

Document 117-2 Revised 03/23/06  
 © Coilcraft Inc. 2013  
 This product may not be used in medical or high risk applications without prior Coilcraft approval. Specification subject to change without notice. Please check web site for latest information.