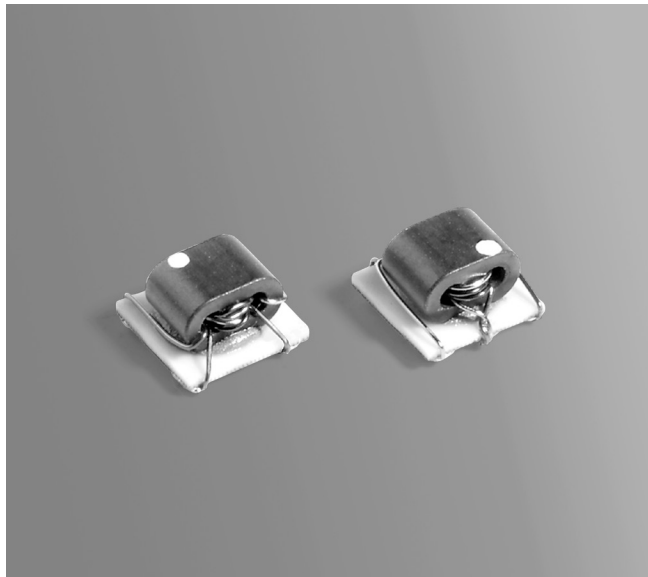




# Mini Wideband Transformers – WBC



- Smallest wideband transformer: 4 mm square 3 mm high
- 300 Vrms interwinding isolation, 1/4 Watt RF input power
- 250 mA max current rating.

**Designer's Kit C393** contains three of each part

**Core material** Ferrite

**Terminations** RoHS compliant tin-silver-copper over silver-platinum-glass frit. Other terminations available at additional cost.

**Weight** 68.0 – 88.8 mg

**Ambient temperature** –40°C to +85°C

**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)**

60 per billion hours / 16,666,667 hours, calculated per Telcordia SR-332

**Packaging** 750/7" reel; 2500/13" reel Plastic tape: 12 mm wide, 0.3 mm thick, 8 mm pocket spacing, 2.9 mm pocket depth

**PCB washing** Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787\\_PCBt\\_Washing.pdf](#).

| Part number <sup>1</sup> | Schematic | Impedance ratio <sup>2</sup><br>pri:sec | Bandwidth (MHz) | Insertion loss max (dB) | Pins 4-6 (primary)         |                                | Pins 1-3 (secondary)       |                                | DC imbalance <sup>5</sup><br>max (mA) | Color dot |
|--------------------------|-----------|-----------------------------------------|-----------------|-------------------------|----------------------------|--------------------------------|----------------------------|--------------------------------|---------------------------------------|-----------|
|                          |           |                                         |                 |                         | L min <sup>3</sup><br>(μH) | DCR max <sup>4</sup><br>(mOhm) | L min <sup>3</sup><br>(μH) | DCR max <sup>4</sup><br>(mOhm) |                                       |           |
| WBC1-1L_                 | A         | 1:1                                     | 0.400–600       | 0.40                    | 10                         | 120                            | 10                         | 120                            | —                                     | Brown     |
| WBC1-1TL_                | B         | 1:1                                     | 0.250–750       | 0.58                    | 9.5                        | 75                             | 9.5                        | 75                             | 36                                    | Brown     |
| WBC2-1TL_                | B         | 1:2                                     | 0.200–500       | 0.50                    | 10                         | 120                            | 20                         | 150                            | 8.5                                   | Red       |
| WBC3-1TL_                | B         | 1:3                                     | 0.300–900       | 0.60                    | 9                          | 100                            | 27                         | 150                            | 8.5                                   | Orange    |
| WBC4-1TL_                | B         | 1:4                                     | 0.250–750       | 1.0                     | 9                          | 55                             | 36                         | 120                            | 30                                    | Yellow    |
| WBC4-14L_                | B         | 1:4                                     | 1.500–1200      | 2.0                     | 2                          | 50                             | 8                          | 100                            | 15                                    | Green     |
| WBC4-1WL_                | B         | 1:4                                     | 0.500–1000      | 0.90                    | 5                          | 80                             | 20                         | 120                            | 10                                    | White     |
| WBC4-6TL_                | B         | 1:4                                     | 0.300–700       | 0.65                    | 9                          | 80                             | 36                         | 200                            | 7.5                                   | Blue      |
| WBC8-1L_                 | D         | 1:8                                     | 0.150–600       | 0.60                    | 22                         | 120                            | 176                        | 310                            | 17                                    | Gray      |
| WBC9-1L_                 | B         | 1:9                                     | 0.300–500       | 0.54                    | 9                          | 80                             | 81                         | 230                            | 5                                     | White     |
| WBC16-1TL_               | B         | 1:16                                    | 0.600–300       | 0.80                    | 5                          | 80                             | 80                         | 230                            | 5                                     | Violet    |
| WBC4-4L_                 | C         | 1:4                                     | 0.250–800       | 1.0                     | 9                          | 60                             | 36                         | 120                            | 30                                    | Yellow    |

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

## WBC4-4LC

**Termination:** L = RoHS compliant tin-silver-copper (95.5/4/0.5) over silver-platinum-glass frit.

Special order: S = non-RoHS tin-lead (63/37).

**Packaging:** C = 7" machine-ready reel. EIA-481 embossed plastic tape (750 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 (2500 parts per full reel).

2. Impedance ratio is for the full primary winding to the full secondary winding.

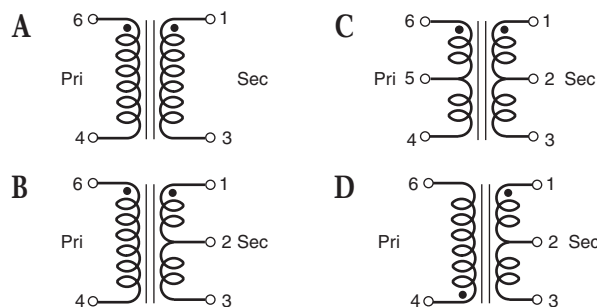
3. Inductance measured at 100 kHz, 0.1 V, 0 Adc on an Agilent/HP 4192 or equivalent.

4. DCR measured on a micro-ohmmeter.

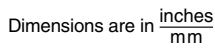
5. DC imbalance is the maximum difference in current measured at pins 1 and 3 with the source at pin 2. Inductance drop is 15% at maximum imbalance.

6. Electrical specifications at 25°C. Measurements are referenced to 50 Ohms. Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

## Schematics

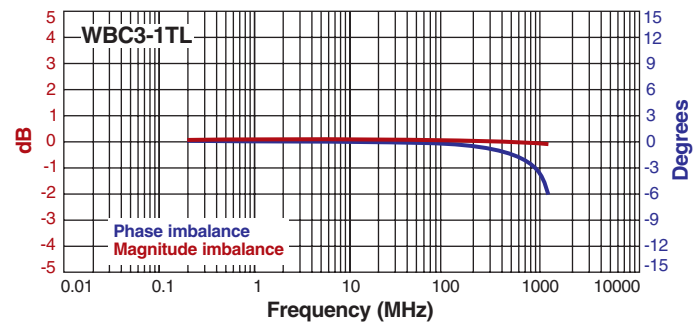
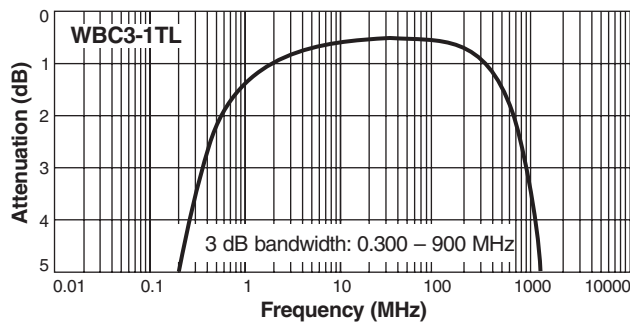
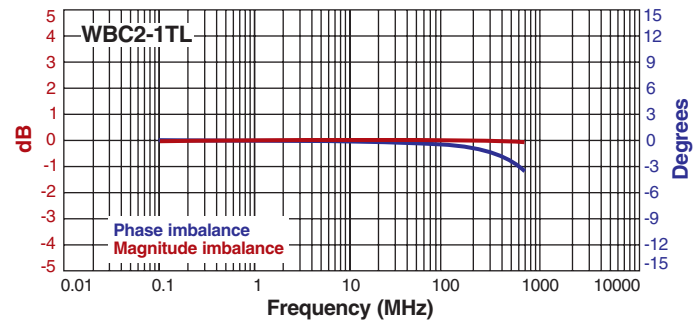
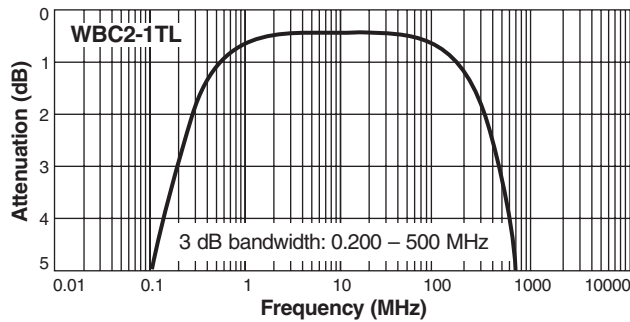
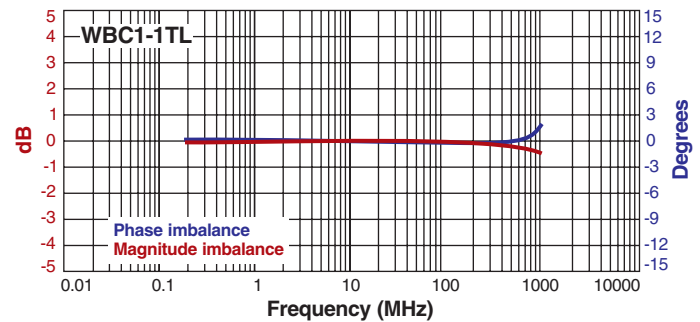
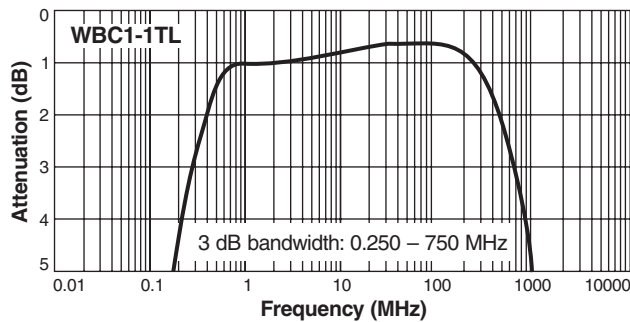
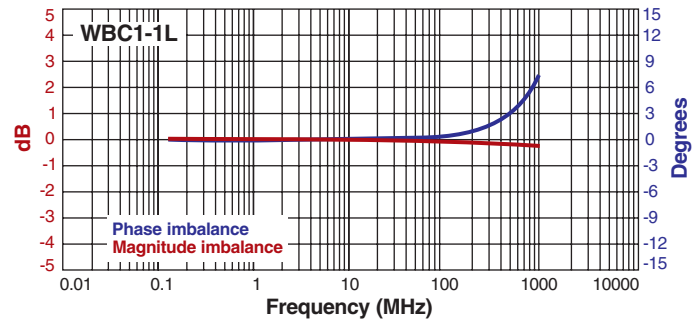
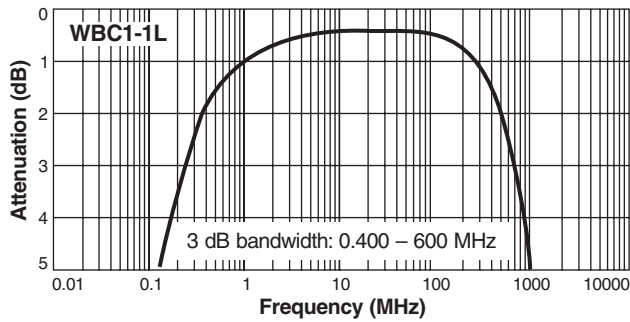


## Dimensions





# WBC Series SMT Mini Wideband Transformers



Attenuation measured on a network analyzer (re: 50 Ohms)



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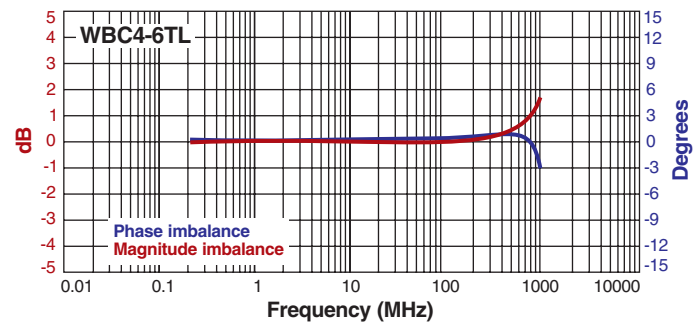
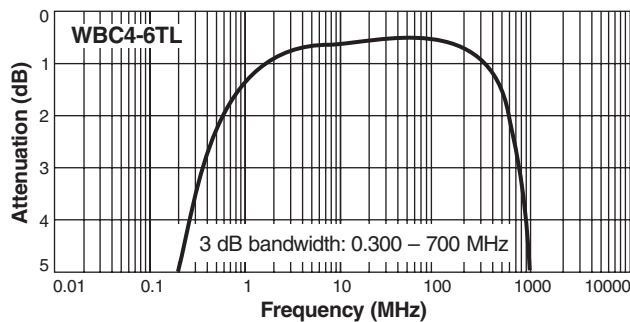
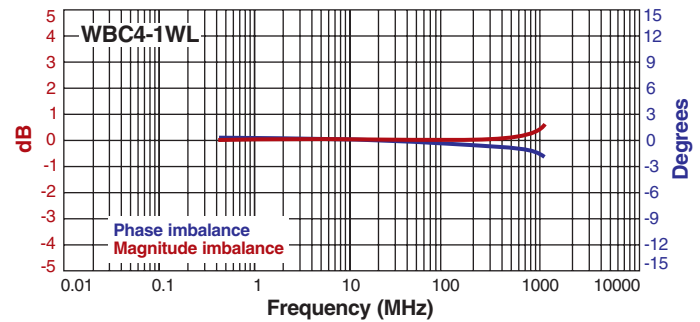
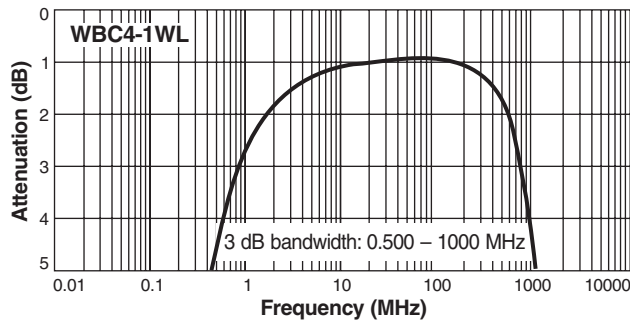
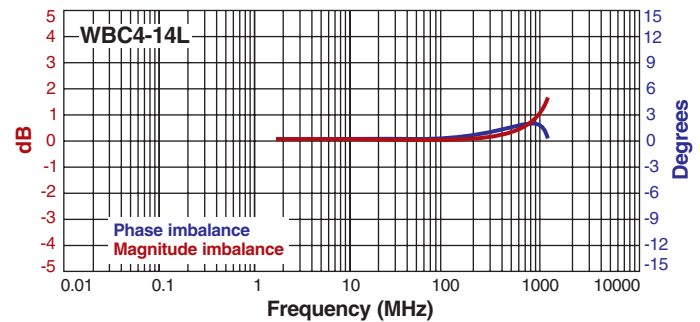
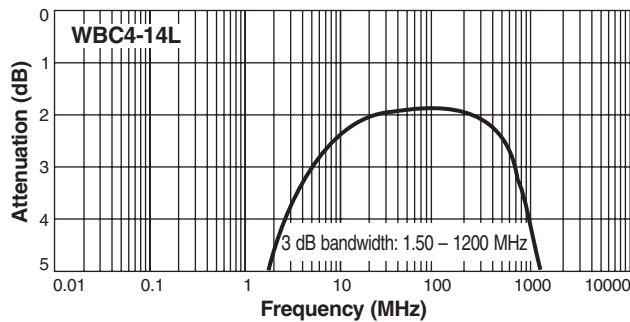
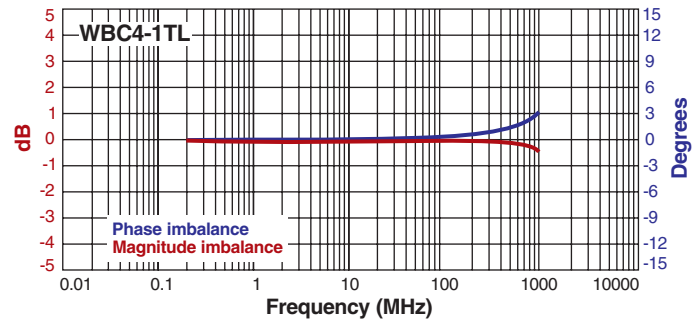
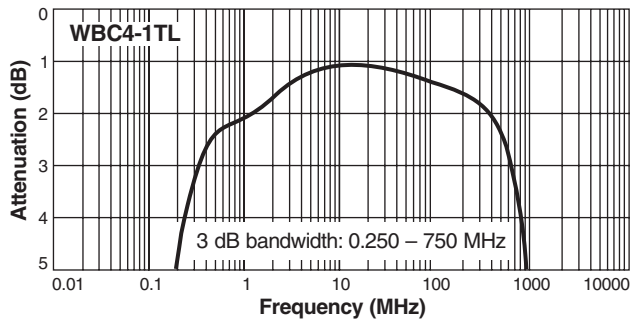
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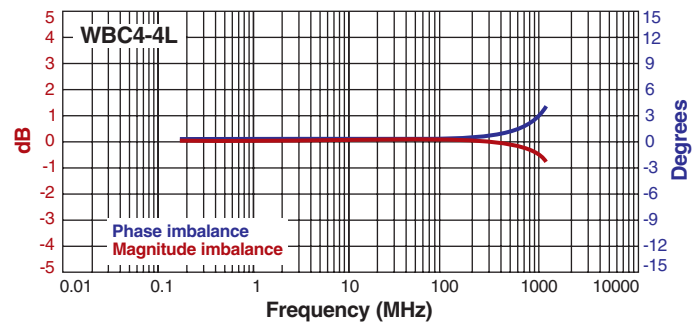
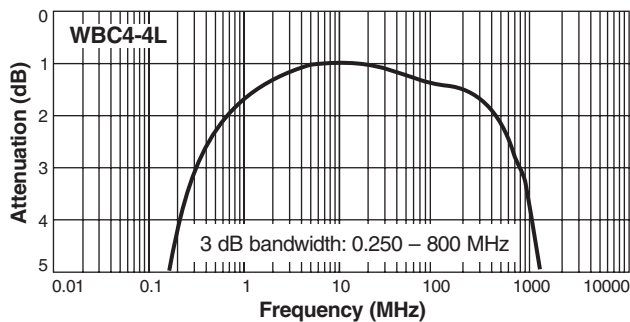
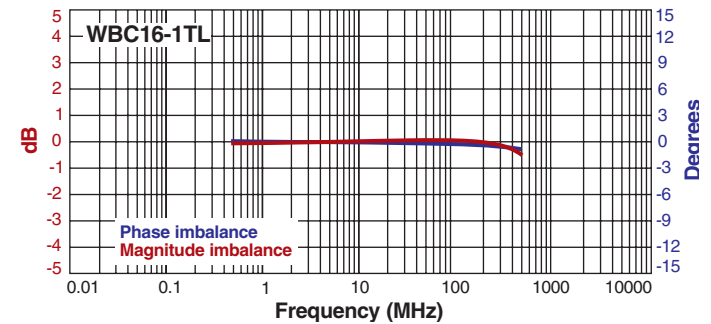
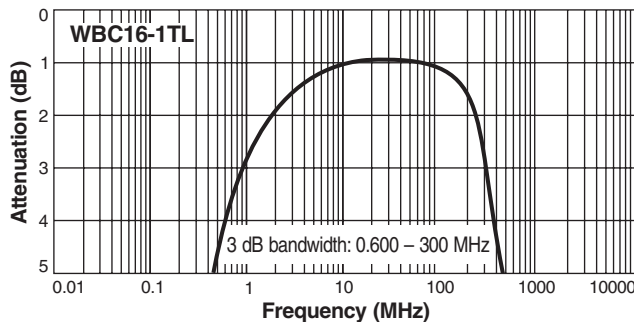
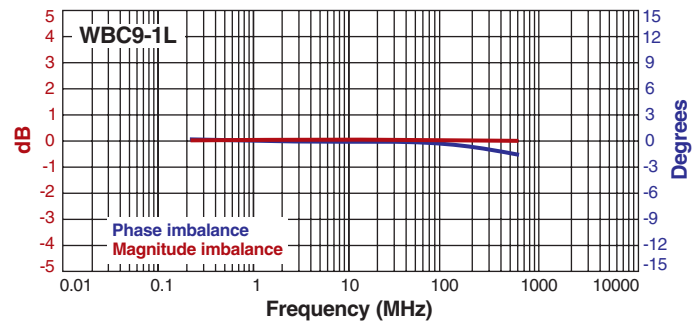
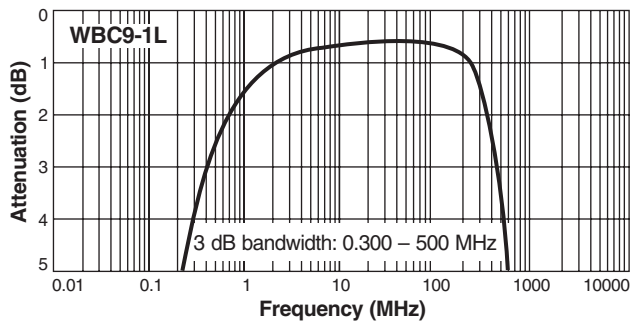
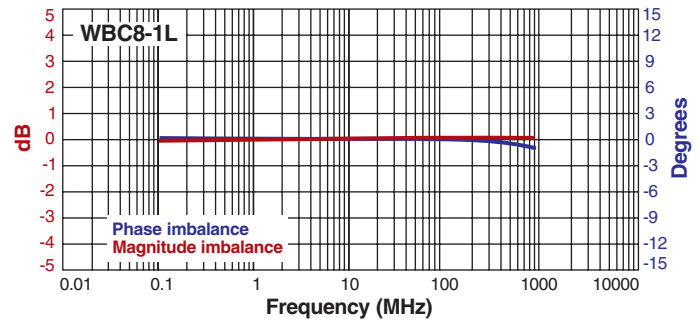
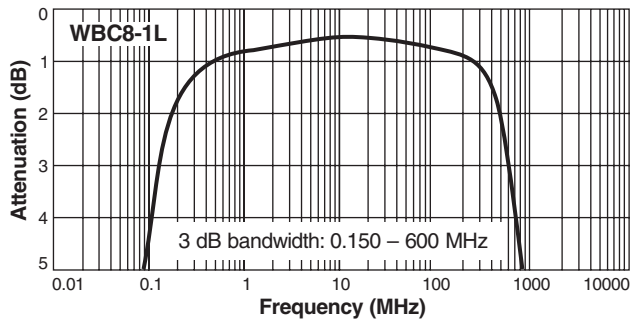
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