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.
- AEC-Q200 Grade 3 qualified (−40°C to +85°C ambient)

Designers’ 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

### Impedance Insertion

- Pins 4-6 (primary)
  - L min: (µH) DCR max: (mOhm)
  - WBC4-4L: 1 0.250 – 800 1.0 9 60 36 120 30 Yellow
- Pins 1-3 (secondary)
  - L min: (µH) DCR max: (mOhm)
  - WBC4-4L: 4 0.250 – 800 1.0 9 60 36 120 30 Yellow

### Schematics

- Schematic A: Pri:Sec (MHz) (dB) (µH) (mOhm) (µH) (mOhm) max (mA) dot

### Electrical Specifications

- DC imbalance max (mA) Color
d- 1. When ordering, please specify termination and packaging codes:
- 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.
WBC Series SMT Mini Wideband Transformers

Dimensions

Dot indicates pin 1

Dimensions are in inches or mm.

Recommended Land Pattern

*Nominal dimensions of the substrate.
WBC Series SMT Mini Wideband Transformers

Attenuation measured on a network analyzer (re: 50 Ohms)
WBC Series SMT Mini Wideband Transformers

- **WBC4-1TL**: 3 dB bandwidth: 0.250 – 750 MHz
- **WBC4-14L**: 3 dB bandwidth: 1.50 – 1200 MHz
- **WBC4-1WL**: 3 dB bandwidth: 0.500 – 1000 MHz
- **WBC4-6TL**: 3 dB bandwidth: 0.300 – 700 MHz

Attenuation measured on a network analyzer (re: 50 Ohms)
WBC Series SMT Mini Wideband Transformers

WBC8-1L
3 dB bandwidth: 0.150 – 600 MHz

WBC9-1L
3 dB bandwidth: 0.300 – 500 MHz

WBC16-1TL
3 dB bandwidth: 0.600 – 300 MHz

WBC4-4L
3 dB bandwidth: 0.250 – 800 MHz

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