



# RFID Transponder Coils – 5315TC



The 5315TC is Coilcraft's most rugged and lowest cost antenna coil designed for RFID applications at 125 kHz. The wrap-around terminals have large mounting surfaces to ensure excellent board adhesion. The coil is wound on a plastic base, providing great durability and allowing this part to withstand harsh mechanical shock.

Their robust construction and 125°C rating make these parts suitable for use in the most severe environments. They were developed for automotive applications, including tire pressure monitoring systems.

In addition to the standard models shown, Coilcraft can design transponder coils to operate at other frequencies.

Coilcraft **Designer's Kit C369** contains four samples each of the standard parts shown. To order, contact Coilcraft or visit <http://order.coilcraft.com>.

| Part number <sup>1</sup> | Inductance <sup>2</sup><br>at 125 kHz<br>±2% (mH) | Q min <sup>2</sup> | Read<br>distance <sup>3</sup><br>(inches/cm) | Sensitivity <sup>4</sup><br>(mV/μT) | Matching<br>capacitor <sup>5</sup><br>(pF) | DCR max <sup>6</sup><br>(Ohms) | SRF typ <sup>7</sup><br>(kHz) |
|--------------------------|---------------------------------------------------|--------------------|----------------------------------------------|-------------------------------------|--------------------------------------------|--------------------------------|-------------------------------|
| 5315TC-374XGL_           | 0.37                                              | 8                  | 16 / 40.6                                    | 8.32                                | 4380                                       | 24                             | 7100                          |
| 5315TC-404XGL_           | 0.40                                              | 8                  | 17 / 43.2                                    | 8.67                                | 4050                                       | 25                             | 7300                          |
| 5315TC-704XGL_           | 0.70                                              | 12                 | 21 / 53.3                                    | 11.43                               | 2320                                       | 33                             | 4500                          |
| 5315TC-904XGL_           | 0.90                                              | 12                 | 21 / 53.3                                    | 13.35                               | 1800                                       | 38                             | 3800                          |
| 5315TC-105XGL_           | 1.00                                              | 12                 | 23 / 58.4                                    | 14.07                               | 1600                                       | 40                             | 2500                          |
| 5315TC-115XGL_           | 1.08                                              | 13                 | 23 / 58.4                                    | 14.65                               | 1500                                       | 40                             | 2300                          |
| 5315TC-205XGL_           | 1.97                                              | 14                 | 25 / 63.5                                    | 21.28                               | 820                                        | 70                             | 2300                          |
| 5315TC-245XGL_           | 2.38                                              | 12                 | 26 / 66.0                                    | 23.97                               | 680                                        | 80                             | 2400                          |
| 5315TC-335XGL_           | 3.30                                              | 14                 | 27 / 68.6                                    | 29.70                               | 490                                        | 95                             | 1800                          |
| 5315TC-415XGL_           | 4.15                                              | 15                 | 29 / 73.7                                    | 34.95                               | 390                                        | 103                            | 1260                          |
| 5315TC-495XGL_           | 4.90                                              | 15                 | 28 / 71.1                                    | 40.00                               | 330                                        | 150                            | 1550                          |
| 5315TC-685XGL_           | 6.80                                              | 13                 | 30 / 76.2                                    | 53.87                               | 240                                        | 180                            | 1350                          |
| 5315TC-715XGL_           | 7.10                                              | 14                 | 30 / 76.2                                    | 55.41                               | 220                                        | 176                            | 890                           |
| 5315TC-725XGL_           | 7.20                                              | 17                 | 30 / 76.2                                    | 56.74                               | 220                                        | 165                            | 880                           |

1. When ordering, please specify **packaging** code:

**5315TC-715XGLD**

**Packaging:** **D** = 13" machine-ready reel. EIA-481 embossed plastic tape (3000 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 D instead.

2. Inductance and Q measured using Agilent/HP 4192A impedance analyzer at 125 kHz. For recommended test procedures, contact Coilcraft.

3. Read distance measured using the KEELOQ® Transponder Evaluation Kit part number DM303005 from Microchip. Distance was recorded as the voltage across the resonant circuit dropped below 10 mV.

4. Sensitivity measured in accordance with Coilcraft application note "Measuring Sensitivity of Transponder Coils."

5. Matching capacitor value required for parallel resonant circuit operating at 125 kHz.

6. DCR measured on micro-ohmmeter.

7. SRF measured using Agilent/HP 8753D network analyzer.

8. **Ambient temperature range:** -40°C to +125°C

9. **Storage temperature range:** Component: -40°C to +125°C  
Packaging: -40°C to +80°C

10. **Resistance to soldering heat:** Three reflows at >217°C for 90 seconds (+260°C ±5°C for 20 – 40 seconds), allowing parts to cool to room temperature between.

11. Electrical specifications at 25°C.

12. Temperature coefficient of inductance: +300 to +1100 ppm/°C.

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

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Specifications subject to change without notice.  
Please check our website for latest information.

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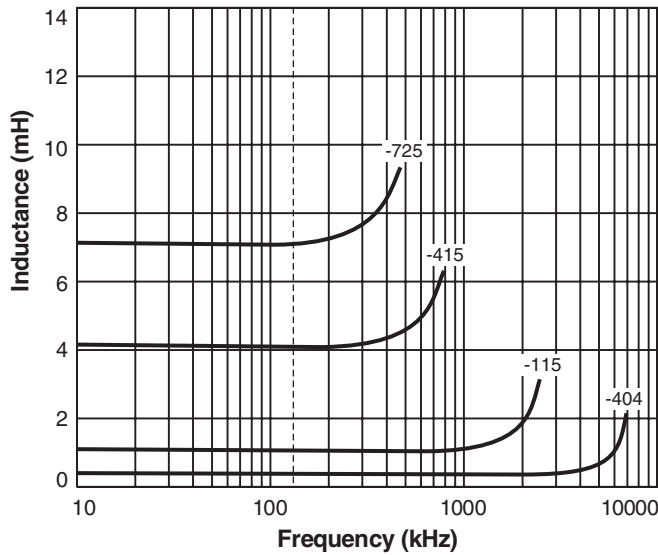
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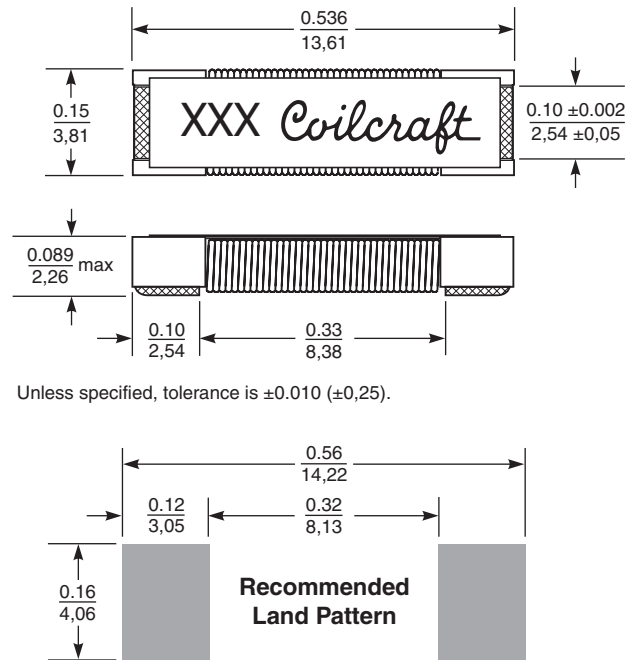


# RFID Transponder Coils – 5315TC

## Typical L vs Frequency



## Dimensions



**Terminations** Gold over nickel over phos bronze

**Weight** 260 – 300 mg

**Packaging** 3000/13" reel; Plastic tape: 24 mm wide, 0.3 mm thick, 8 mm pocket spacing, 2.74 mm pocket depth

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