

# 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> at 125 kHz ±2% (mH)	Q min <sup>2</sup>	Read distance <sup>3</sup> (inches/cm)	Sensitivity <sup>4</sup> (mV/μT)	Matching capacitor <sup>5</sup> (pF)	DCR max <sup>6</sup> (Ohms)	SRF typ <sup>7</sup> (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. Electrical specifications at 25°C.

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



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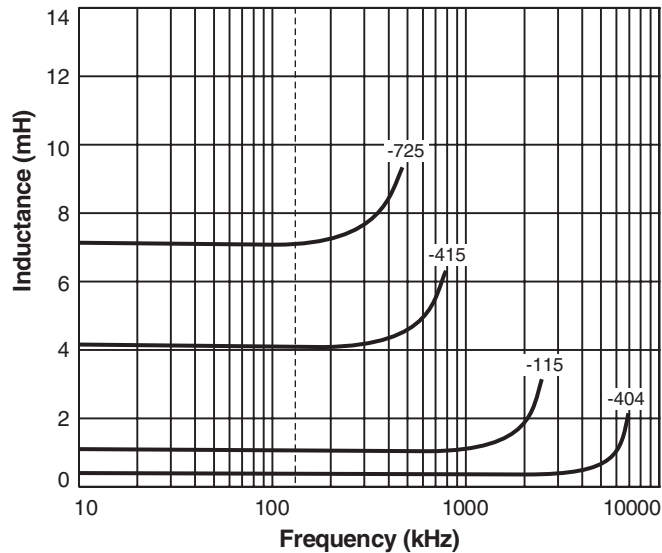
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# RFID Transponder Coils – 5315TC

## Typical L vs Frequency



**Terminations** RoHS compliant gold over nickel over phos bronze.

**Weight** 260 – 300 mg

**Ambient temperature** -40°C to +125°C

**Storage temperature** Component: -40°C to +125°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)

**Temperature coefficient of inductance** +300 to +1100 ppm/°C

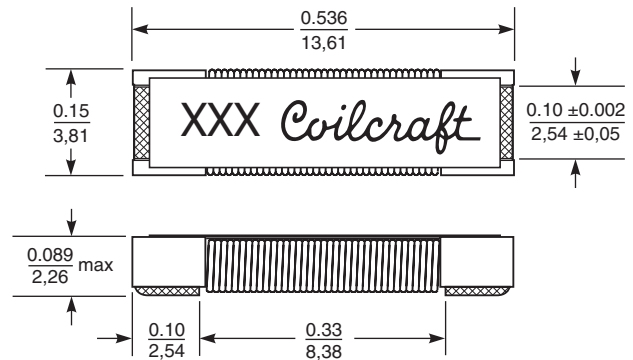
**Failures in Time (FIT) / Mean Time Between Failures (MTBF)**

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

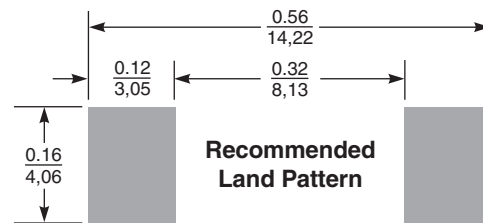
**Packaging** 3000 per 13" reel Plastic tape: 24 mm wide, 0.3 mm thick, 8 mm pocket spacing, 2.74 mm pocket depth

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

## Dimensions



Unless specified, tolerance is  $\pm 0.010$  ( $\pm 0.25$ ).



Dimensions are in  $\frac{\text{inches}}{\text{mm}}$



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