

## Transponder Coils (for RFID)

Our surface mount transponder coils (wire wound) series cover a wide range of electrical performances. Its length and cross section area are optimized for best sensitivity in the coil axis. Customized inductance values are available upon request.

**Applications** Used for wireless data transmission in low frequency RFID products, such as immobilizers, TPMS and keyless entry. Other industrial applications include access control and tracking devices.

### Technical Data

|                                             |                                                                                                                                                                                                                                                 |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| L – Value (rated inductance)                | Measured with Bode 100 Vector Network Analyzer or equivalent at frequency $f_L$                                                                                                                                                                 |
| Q – Factor (min)                            | Measured with Bode 100 Vector Network Analyzer or equivalent at frequency $f_Q$                                                                                                                                                                 |
| SRF (min)                                   | Measured with HP 8753ES Network Analyzer or equivalent                                                                                                                                                                                          |
| DCR (max)                                   | Measured at 25°C                                                                                                                                                                                                                                |
| Operating Temperature                       | -40°C to +150°C (Including component self-heating)<br>For FTC from -40°C to +125°C                                                                                                                                                              |
| Pad Metallization                           | Gold flash as top layer, except ZASL with tin plating                                                                                                                                                                                           |
| Wire termination                            | Spot welding, except ZASL                                                                                                                                                                                                                       |
| Recommended soldering method                | <a href="#">Reflow</a>                                                                                                                                                                                                                          |
| Moisture Sensitivity Levels (MSL)           | MSL Level 1, indicating unlimited floor life at $\leq 30^\circ\text{C}$ / 85% relative humidity                                                                                                                                                 |
| Solderability                               | Using lead free solder (Sn 99.9) at $260^\circ\text{C} \pm 5^\circ\text{C}$ for $5 \pm 0.5$ seconds, min 90% solder coverage of metallization<br>Standard: IEC 68-2-20 (Ta)                                                                     |
| Resistance to Soldering Heat                | Resistant to $260^\circ\text{C} \pm 5^\circ\text{C}$ for $10 \pm 1$ seconds<br>Standard: IEC 68-2-20 (Tb)                                                                                                                                       |
| Resistance to Solvent                       | Resistant to Isopropyl alcohol for $5 \pm 0.5$ minutes at $23^\circ\text{C} \pm 5^\circ\text{C}$<br>Standard: IEC 68-2-45                                                                                                                       |
| Climatic Test                               | Defined by the following standards<br>IEC 68-2-1 for Cold test: $-40^\circ\text{C}$ for 96 hours<br>IEC 68-2-2 for Dry heat test: $125^\circ\text{C}$ for 96 hours<br>IEC 60068-2-78 for Humidity test: $40^\circ\text{C}$ at RH 95% for 4 days |
| Thermal Shock Test                          | Temperature cycle: $-40^\circ\text{C}$ to $+125^\circ\text{C}$ to $-40^\circ\text{C}$<br>Max/Min temperature duration: 15 min<br>Temperature transition duration: 5 min<br>Cycles: 25<br>Standard: MIL-STD-202G                                 |
| Adhesion of Soldered Component (Shear Test) | Components withstand a pushing force of 10N for $10 \pm 1$ seconds<br>Standard: IEC 60068-2-21, method Ue3                                                                                                                                      |
| Mechanical Shock                            | Mil-Std 202 Method 213<br>Condition C<br>3 axis, 6 times, total 18 shocks<br>100 G, 6 ms, half-sine                                                                                                                                             |
| Vibration                                   | Mil-Std 202 Method 204<br>20 mins at 5G<br>10 Hz to 2000 Hz<br>12 cycles each of 3 orientations                                                                                                                                                 |

Technical Data & Packing Specification

**Ordering Code** Example: 4408AF-371X-YY

**4408 AF - 371 X - YY** → **4408AF-371K-04**  
(Case Size) (Core Type) (Inductance Value) (Tolerance) (Packing Code)

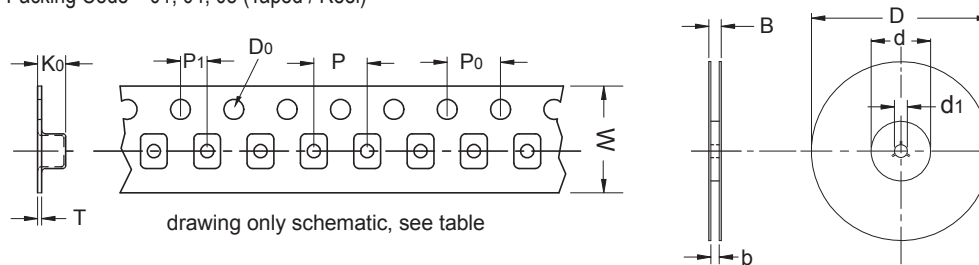
Case Size - 1210, 1812, 4408, ZASL

Core Type - FTC (Ferrite), AFTC (Ceramic & Ferrite), AF/AQ (Ceramic & Ferrite), ZASL (Ferrite)

Tolerances - J (5%), K (10%)

Packing Code - 01, 04, 08 (Taped / Reel)

### Packing Specification



| Type       | Packing Code | D   | D <sub>0</sub> | d   | d <sub>1</sub> | B    | b    | W  | P  | P <sub>0</sub> | P <sub>1</sub> | K <sub>0</sub> | T    |
|------------|--------------|-----|----------------|-----|----------------|------|------|----|----|----------------|----------------|----------------|------|
| 1210 FTC   | 01           | 180 | 1.55           | 60  | 13             | 18.4 | 13.7 | 12 | 8  | 4              | 2              | 2.55           | 0.30 |
| 1210 FTC   | 04           | 330 | 1.55           | 100 | 13             | 18.4 | 12.4 | 12 | 8  | 4              | 2              | 2.55           | 0.30 |
| 1812 AFTC  | 01           | 180 | 1.50           | 60  | 13             | 18.4 | 15.4 | 12 | 8  | 4              | 2              | 4.0            | 0.28 |
| 1812 AFTC  | 04           | 330 | 1.50           | 100 | 13             | 18.4 | 12.4 | 12 | 8  | 4              | 2              | 3.7            | 0.35 |
| 4408 AF/AQ | 04/08        | 330 | 1.55           | 100 | 13             | 30.4 | 24.5 | 24 | 8  | 4              | 2              | 2.7            | 0.30 |
| ZASL       | 04           | 330 | 1.50           | 100 | 13             | 30.4 | 24.4 | 24 | 12 | 4              | 2              | 3.6            | 0.30 |

## FASTRON's Component Key Characteristics



Approved according to AEC-Q200



Approved according to AEC-Q200 with High Temperature



Suitable for High Temperature



Part is RoHS conform and Halogen free



Mechanical Shock and Vibration Proof



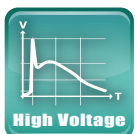
Designed for High Q-values



Exceptionally High Q-values



Optimized for High Currents



Optimized for High Voltages