# 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 on request.

## Applications

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

## Technical Data

| | |
|---|---|
| L – Value (rated inductance) | Measured with Bode 100 Vector Network Analyzer at frequency $f_L$ |
| Q – Factor (min) | Measured with Bode 100 Vector Network Analyzer at frequency $f_Q$ |
| SRF (min) | Measured with HP 8753ES Network Analyzer |
| DCR (max) | Measured at 25°C |
| Operating Temperature | -40°C to +150°C (Includes component self-heating) |
| Pad Metallization | Gold flash as top layer, except 4513FP & ZASL with tin plating |
| Wire termination | Spot welding, except ZASL |
| Recommended soldering method | Reflow |
| Moisture Sensitivity Levels (MSL) | MSL Level 1, indicating unlimited floor life at ≤ 30°C / 85% relative humidity |
| Solderability | Using lead free solder (Sn 99.9) at 260°C ± 5°C for 5 ± 0.5 seconds, min 90% solder coverage of metallization<br>Standard: IEC 68-2-20 (Ta) |
| Resistance to Soldering Heat | Resistant to 260°C ± 5°C for 10 ± 1 seconds<br>Standard: IEC 68-2-20 (Tb) |
| Resistance to Solvent | Resistant to Isopropyl alcohol for 5 ± 0.5 minutes at 23°C ± 5°C<br>Standard: IEC 68-2-45 |
| Climatic Test | Defined by the following standards<br>IEC 68-2-1 for Cold test: -40°C for 96 hours<br>IEC 68-2-2 for Dry heat test: 125°C for 96 hours<br>IEC 60068-2-78 for Humidity test: 40°C at RH 95% for 4 days |
| Thermal Shock Test | Temperature cycle: -40°C to +125°C to -40°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 ± 1 seconds<br>Standard: IEC 60068-2-21, method $Ue_3$ |
| 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 |

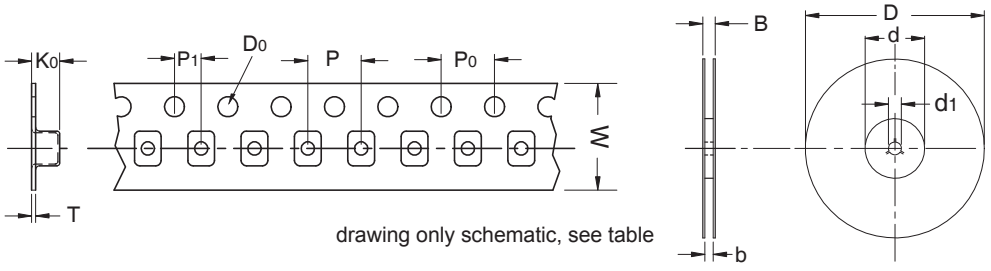
## Ordering Code

Example: 4408AF-371X-YY

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

| | |
|---|---|
| Case Size | - 1812, 4513, 4408, ZASL |
| Core Type | - AFTC (Ceramic & Ferrite), FP (Plastic Ferrite), AF/AQ (Ceramic & Ferrite), ZASL (Ferrite) |
| Tolerances | - J (5%), K (10%) |
| Packing Code | - 01, 04, 08 (Taped / Reel) |

## Packing Specification




drawing only schematic, see table

| Type | Packing Code | D | D0 | d | d1 | B | b | W | P | P0 | P1 | K0 | T |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1812 AFTC | 01 | 180 | 1.50 | 60 | 13 | 18.4 | 15.4 | 12 | 8 | 4 | 2 | 4 | 0.28 |
| 1812 AFTC | 04 | 330 | 1.50 | 100 | 13 | 18.4 | 12.4 | 12 | 8 | 4 | 2 | 3.7 | 0.35 |
| 4513 FP | 04/08 | 330 | 1.55 | 100 | 13 | 30.4 | 24.5 | 24 | 8 | 4 | 2 | 2.5 | 0.3 |
| 4408 AF/AQ | 04/08 | 330 | 1.55 | 100 | 13 | 30.4 | 24.5 | 24 | 8 | 4 | 2 | 2.7 | 0.3 |
| ZASL | 04 | 330 | 1.50 | 100 | 13 | 30.4 | 24.4 | 24 | 12 | 4 | 2 | 3.6 | 0.3 |

● All dimensions in mm