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) 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	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 Standard: IEC 68-2-20 (Ta)
Resistance to Soldering Heat	Resistant to 260°C ± 5°C for 10 ± 1 seconds Standard: IEC 68-2-20 (Tb)
Resistance to Solvent	Resistant to Isopropyl alcohol for 5 ± 0.5 minutes at 23°C ± 5°C Standard: IEC 68-2-45
Climatic Test	Defined by the following standards IEC 68-2-1 for Cold test: -40°C for 96 hours IEC 68-2-2 for Dry heat test: 125°C for 96 hours 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 Max/Min temperature duration: 15 min Temperature transition duration: 5 min Cycles: 25 Standard: MIL-STD-202G
Adhesion of Soldered Component (Shear Test)	Components withstand a pushing force of 10N for 10 ± 1 seconds Standard: IEC 60068-2-21, method Ue_3
Mechanical Shock	Mil-Std 202 Method 213 Condition C 3 axis, 6 times, total 18 shocks 100 G, 6 ms, half-sine
Vibration	Mil-Std 202 Method 204 20 mins at 5G 10 Hz to 2000 Hz 12 cycles each of 3 orientations

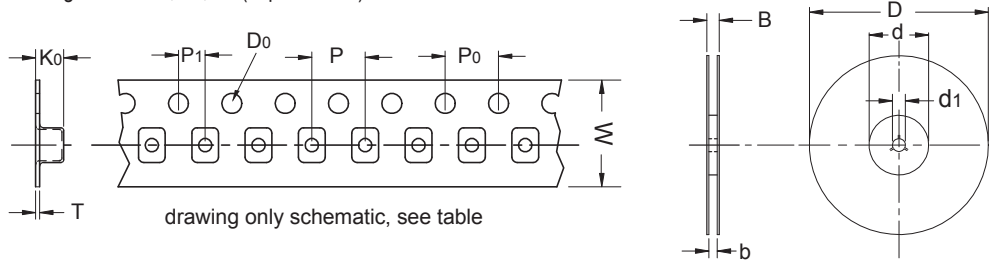
Ordering Code

Example: 4408AF-371X-YY

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

Case Size - 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



drawing only schematic, see table

Type	Packing Code	D	D0	d	d1	B	b	W	P	P0	P1	K0	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

● All dimensions in mm

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



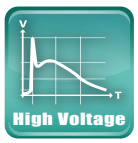
Designed for High Q-values



Exceptionally High Q-values



Optimized for High Currents



Optimized for High Voltages

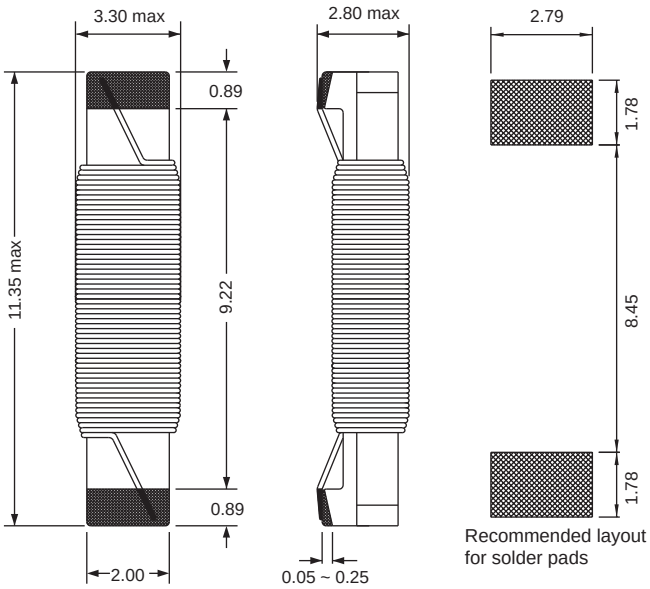
4408 AQ

Transponder Coil
Exceptionally High Q

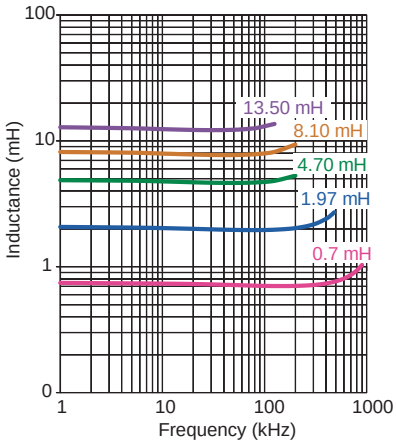
(for RFID)

Transponder Coils

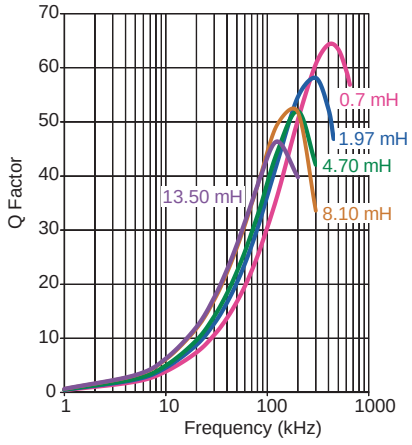




Typical Ls vs Frequency (*f*)



Typical Q vs Frequency (*f*)



Part No	Inductance L (mH)	f_L (kHz)	Tol ± (%)	Q min	f_Q (kHz)	SRF ref (kHz)	DCR max (Ω)	Sensitivity (mV/µT)
4408AQ-701J-YY	0.70	125	5	30	125	1200	12.5	17
4408AQ-901J-YY	0.90	125	5	32	125	1100	14.5	20
4408AQ-112J-YY	1.08	125	5	34	125	950	15.7	22
4408AQ-202J-YY	1.97	125	5	34	125	700	30	35
4408AQ-242J-YY	2.38	125	5	35	125	650	31.8	42
4408AQ-272J-YY	2.66	125	5	35	125	600	35.2	45
4408AQ-292J-YY	2.89	125	5	37	125	600	35.8	48
4408AQ-332J-YY	3.30	125	5	38	125	600	43.5	55
4408AQ-472J-YY	4.70	125	5	37	125	429	68	71
4408AQ-482J-YY	4.80	125	5	37	125	433	70	74
4408AQ-492J-YY	4.90	125	5	37	125	429	71	74
4408AQ-562J-YY	5.60	125	5	37	125	404	77	86
4408AQ-682J-YY	6.80	125	5	41	125	393	85	111
4408AQ-702J-YY	7.00	125	5	41	125	393	85	118
4408AQ-712J-YY	7.10	125	5	41	125	382	88	123
4408AQ-722J-YY	7.20	125	5	40	125	381	88	119
4408AQ-812J-YY	8.10	125	5	41	125	368	94	126
4408AQ-902J-YY	9.00	125	5	41	125	354	95	133
4408AQ-952J-YY	9.50	125	5	39	125	339	114	173
4408AQ-103J-YY	10.00	125	5	39	125	330	116	214
4408AQ-133J-YY	13.50	125	5	38	125	285	138	267

Core Material: Ceramic & Ferrite

Revision date: 03 Mar 2022

SPQ: Taped / Reel 1000 [-08]
3000 [-04]

Remarks: - Unlisted inductance values available upon request.
- 2% and 5% tolerance available upon request.

● All dimensions in mm