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

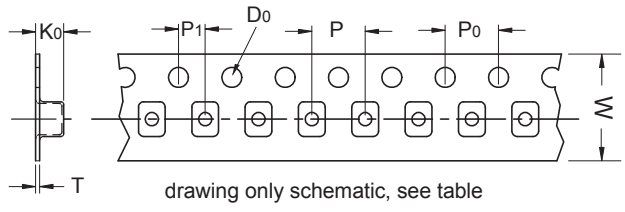
Ordering Code

Example: 4408AF-371X-YY

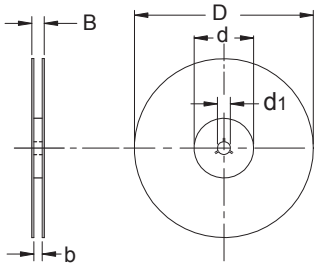
4408 (Case Size) **AF** (Core Type) **-** **371** (Inductance Value) **X** (Tolerance) **-** **YY** (Packing Code) ➔ **4408AF-371K-04**

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	D_0	d	d_1	B	b	W	P	P_0	P_1	K_0	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

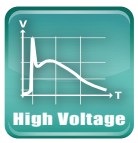
Part is RoHS conform and Halogen free

Mechanical Shock and Vibration Proof

Designed for High Q-values

Exceptionally High Q-values

Optimized for High Currents



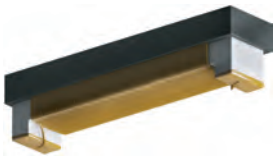
Optimized for High Voltages

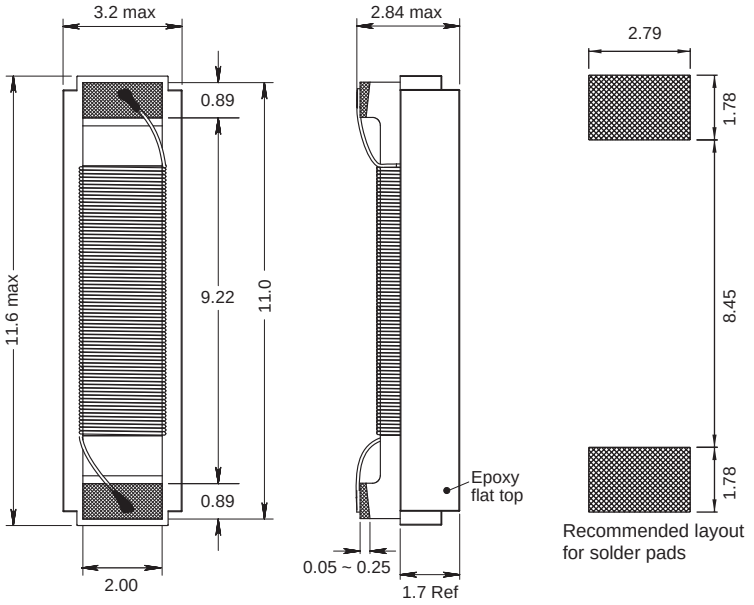
4408 AF

Transponder Coil

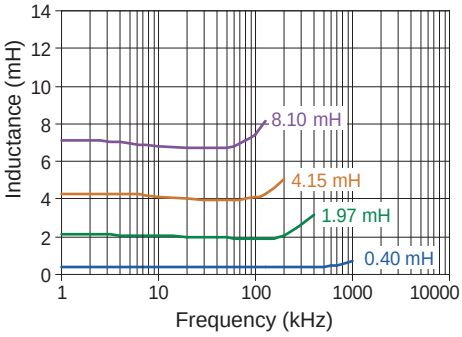
(for RFID)

Transponder Coils

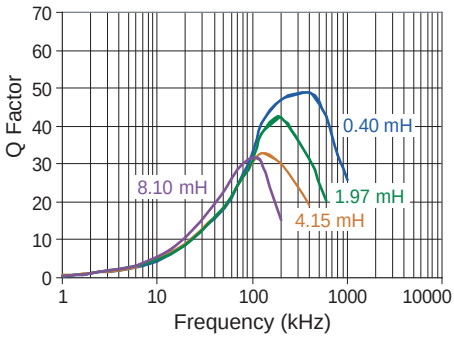




Typical Ls vs Frequency (f)



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)
4408AF-371K-YY	0.37	125	10	27	125	1200	6.4	9
4408AF-401K-YY	0.40	125	10	27	125	1100	6.8	9
4408AF-421K-YY	0.42	125	10	27	125	1100	8.1	9
4408AF-511K-YY	0.51	125	10	27	125	1000	8.5	11
4408AF-701K-YY	0.70	125	10	30	125	821	12	15
4408AF-901K-YY	0.90	125	10	28	125	760	13.9	19
4408AF-102K-YY	1.00	125	10	28	125	710	15	19
4408AF-112K-YY	1.08	125	10	31	125	710	15	19
4408AF-122K-YY	1.20	125	10	30	125	710	18	24
4408AF-132K-YY	1.34	125	10	30	125	700	20	25
4408AF-202K-YY	1.97	125	10	30	125	630	29.7	32
4408AF-242K-YY	2.38	125	10	32	125	560	30.8	40
4408AF-272K-YY	2.66	125	10	35	125	530	35.2	40
4408AF-292K-YY	2.89	125	10	35	125	530	35.2	41
4408AF-332K-YY	3.30	125	10	35	125	450	48	46
4408AF-342K-YY	3.45	125	10	29	125	430	60	48
4408AF-412K-YY	4.15	125	10	29	125	400	70	57
4408AF-472K-YY	4.70	125	10	29	125	380	70	63
4408AF-482K-YY	4.80	125	10	29	125	380	80	64
4408AF-492K-YY	4.90	125	10	29	125	380	80	66
4408AF-562K-YY	5.60	125	10	28	125	350	80	75
4408AF-682K-YY	6.80	125	10	28	125	345	95	98
4408AF-702K-YY	7.00	125	10	30	125	340	100	99
4408AF-712K-YY	7.10	125	10	30	125	340	100	100
4408AF-722K-YY	7.20	125	10	30	125	335	86.4	104
4408AF-812K-YY	8.10	125	10	28	125	310	125	119
4408AF-902K-YY	9.00	125	10	28	125	310	111.6	141
4408AF-952K-YY	9.50	125	10	28	125	310	111.6	172
4408AF-103K-YY	10.0	125	10	30	125	310	111.6	175
4408AF-133K-YY	13.5	125	10	30	125	200	130	246
4408AF-163K-YY	16.2	125	10	30	125	200	175	364

Core Material: Ceramic & Ferrite

Revision date: 24 Feb 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

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

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