Chip Inductors for RF Applications / Medical Applications (Wire wound-open)

FASTRON's wire wound chip inductors are designed for radio frequency (RF) applications that require optimal Q on high frequency circuits. Its gold flash pad metallization provides better solderability for a higher yield in production. Additionally, their encapsulation not only protects the winding but also allows for surface mount assembly. It comes in compact sizes (from 0302 to 1812) and is available in reel packaging. Unlisted inductance values are usually available upon request. Ferrite core versions are also available for selected case sizes for applications which require higher inductances in a smaller case size.

Applications

Used in LC resonant circuits such as oscillator and signal generators, impedance matching, RF filters etc.
Mobile Telecommunication: GSM, CDMA, TCDMA, cordless phones, 2 way radio
Automotive Subsystems: TPMS, Keyless Entry, Anti-Theft, GPS
Wireless Communication: W-LAN, WIFI, WIMAX, RFID, Bluetooth
Non-magnetic versions for medical imaging applications: ASM series

Technical Data

L – Value (Rated Inductance)	≥ 1 MHz measured with HP 4286A RF LCR meter or equivalent at frequency f_L, 25°C ambient < 1 MHz measured with HP 4285A or equivalent at frequency f_L, 25°C ambient
Q – Factor (min)	≥ 1 MHz measured with E4991B Impedance Analyzer or equivalent at frequency f_Q, 25°C ambient < 1 MHz measured with HP 4285A or equivalent at frequency f_Q, 25°C ambient
SRF (min)	Measured with HP8753ES Network Analyzer or equivalent at 25°C ambient
DCR (max)	Measured at 25°C ambient
Rated DC Current: Irms	Max permissible current that causes a 15°C component temperature rise from 25°C ambient for AS (except 0302AS), AQ, ASM, F & AF Max permissible current that causes a 30°C component temperature rise from 25°C ambient for 0302AS Max permissible current that causes a 40°C component temperature rise from 25°C ambient for AQC, FLP & LDM
Saturation Current: Isat	Max permissible DC bias at 25°C ambient that causes inductivity drop 30% (typ.) related to the unloaded inductivity for FLP & LDM.
Operating Temperature	-40°C to +100°C (Including component self-heating): F & AF -40°C to +125°C (Including component self-heating): FLP & LDM -40°C to +140°C (Including component self-heating): AS (except 0302AS), AQ, ASM & AQC -40°C to +155°C (Including component self-heating): 0302AS
Surface Finishing	Epoxy molded flat top for perfect pick and place assembly
Pad Metallization	Gold flash as top layer for AS, AQ, F, AF & FLP Silver-Palladium-Platinum for ASM & AQC Tin as top layer for LDM
Wire Termination	Spot welding
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: -55°C for 96 hours IEC 68-2-2 for Dry heat test: +85°C for ferrite core and 125°C for ceramic core for 96 hours IEC 60068-2-78 for Humidity test: 40°C at RH 95% for 4 days
Thermal Shock Test	Temperature cycle (ceramic): -40°C to +125°C to -40°C Temperature cycle (ferrite): -40°C to +85°C to -40°C Max/Min temperature duration: 15 minutes Temperature transition duration: 5 minutes 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

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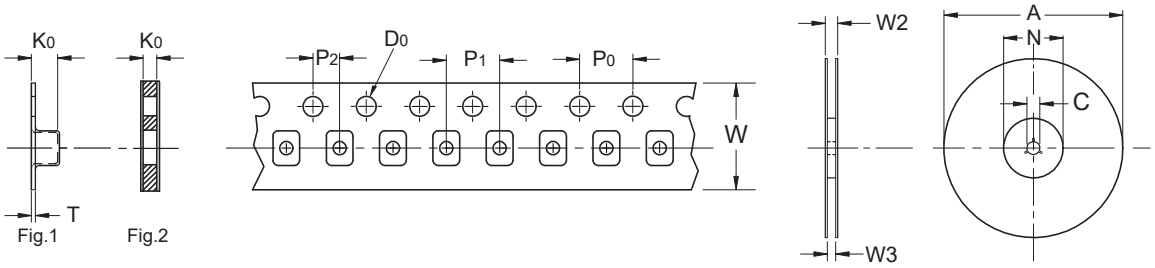
Ordering Code Example : 0402AS-1N0X-YY ➔ **0402AS-1N0K-01**

0402	AS	-	1N0	X	-	YY
(Case Size)	(Core Type)		(Inductance Value)	(Tolerance)		(Packaging Code)

Case Sizes - 0302, 0402, 0603, 0805, 1008, 1206, 1210, 1812
Core Type - AS, AQ, AQC, ASM (Ceramic), F (Ferrite), AF (Ceramic & Ferrite), FLP (Ferrite Low Profile)
Tolerances - F (±1%), G (±2%), A (±3%), J (±5%), K (±10%), L (±15%), M (±20%)
Packaging Code - 01, 04, 08 (Taped / Reel)

Packaging Specification Schematic



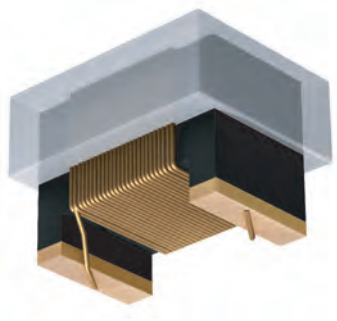
Type	Packaging Code	A	D0	N	C	W2	W3	W	P1	P0	P2	K0	T	Fig
0302	01, 08	180	1.55	60	13	11.9	9.5	8	2	4	2	0.50	-	2
0402	01, 08	180	1.55	60	13	11.9	9.5	8	2	4	2	0.60	-	2
0603	01, 08	180	1.55	60	13	11.4	9.0	8	4	4	2	0.98	-	2
0603	04	330	1.55	100	13	14.4	8.4	8	4	4	2	0.98	-	2
0805	01, 08	180	1.55	60	13	11.4	9.0	8	4	4	2	1.63	0.25	1
0805	04	330	1.55	100	13	14.4	8.4	8	4	4	2	1.63	0.25	1
1008	01,08	180	1.50	60	13	11.4	9.5	8	4	4	2	2.23	0.30	1
1008	04	330	1.55	100	13	14.4	8.4	8	4	4	2	1.63	0.25	1
1206	01,08	180	1.50	60	13	18.4	13.7	12	4	4	2	1.80	0.30	1
1206	04	330	1.50	100	13	18.4	12.4	12	4	4	2	1.80	0.30	1
1210	01	180	1.55	60	13	18.4	13.7	12	8	4	2	2.55	0.30	1
1210	04	330	1.55	100	13	18.4	12.4	12	8	4	2	2.55	0.30	1
1812	01	180	1.50	60	13	18.4	13.7	12	8	4	2	3.70	0.35	1
1812	04	330	1.50	100	13	18.4	12.4	12	8	4	2	3.70	0.35	1

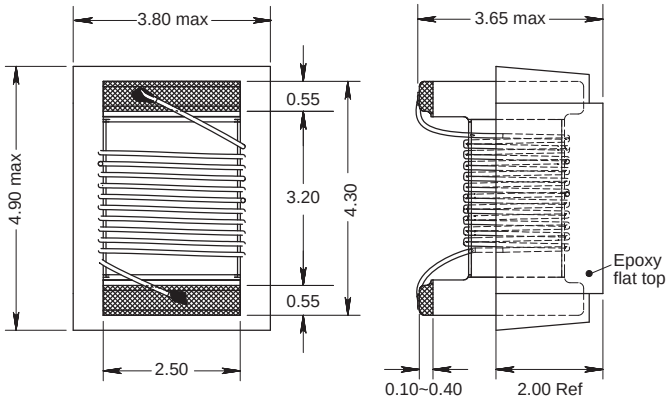
1812 AF

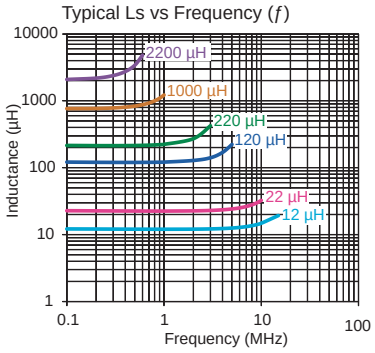
Engineer's Kit: EK-1812AF-X

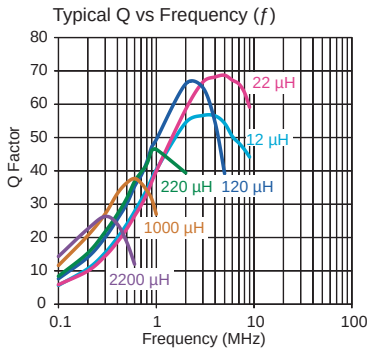
(Wire wound - open)

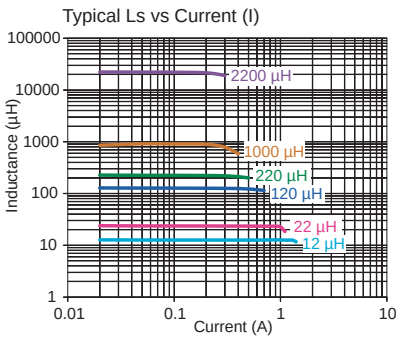
Chip Inductors for RF Applications











Part No	Inductance L (µH)	f_L (MHz)	Tol ± (%)	Q min	f_Q (MHz)	SRF (MHz)	DCR max (Ω)	Rated DC Current (mA)
1812AF-3R9K-YY	3.9	2.5	10	30	2.5	145 min	0.59	410
1812AF-100K-YY	10	2.5	10	42	2.5	23 typ	1.8	310
1812AF-120K-YY	12	2.5	10	42	2.5	40 typ	2.0	310
1812AF-150K-YY	15	2.5	10	42	2.5	40 typ	2.5	290
1812AF-180K-YY	18	2.5	10	45	2.5	40 typ	2.8	270
1812AF-220K-YY	22	2.5	10	45	2.5	40 typ	3.2	260
1812AF-270K-YY	27	2.5	10	45	2.5	36 typ	3.6	240
1812AF-330K-YY	33	2.5	10	45	2.5	34 typ	4.0	230
1812AF-390K-YY	39	2.5	10	45	2.5	32 typ	4.5	210
1812AF-470K-YY	47	2.5	10	42	2.5	30 typ	5.0	200
1812AF-560K-YY	56	2.5	10	42	2.5	27 typ	5.5	190
1812AF-680K-YY	68	2.5	10	40	2.5	23 typ	6.0	180
1812AF-820K-YY	82	2.5	10	40	2.5	19 typ	7.0	170
1812AF-101K-YY	100	2.5	10	40	2.5	13 typ	8.0	150
1812AF-121K-YY	120	0.79	10	33	0.79	11 typ	11.5	135
1812AF-151K-YY	150	0.79	10	36	0.79	10 typ	13.0	125
1812AF-181K-YY	180	0.79	10	36	0.79	9.0 typ	14.2	120
1812AF-221K-YY	220	0.79	10	38	0.79	6.0 typ	16.2	115
1812AF-271K-YY	270	0.79	10	38	0.79	4.5 typ	20.5	105
1812AF-331K-YY	330	0.79	10	38	0.79	3.5 typ	22.5	100
1812AF-391K-YY	390	0.79	10	38	0.79	3.0 typ	24.5	90
1812AF-471K-YY	470	0.79	10	33	0.79	2.1 typ	26.5	85
1812AF-561K-YY	560	0.79	10	33	0.79	2.0 typ	28.5	75
1812AF-681K-YY	680	0.79	10	27	0.79	1.8 typ	38.0	60
1812AF-821K-YY	820	0.79	10	27	0.79	1.7 typ	41.0	55
1812AF-102K-YY	1000	0.79	10	26	0.79	1.6 typ	44.0	50
1812AF-122K-YY	1200	0.252	10	18	0.252	0.8 typ	60.0	42
1812AF-222K-YY	2200	0.252	10	18	0.252	0.62 typ	84.0	32

Core Material: Ceramic & Ferrite

Revision date: 26 Mar 2026

SPQ: Taped / Reel 600 [-01]
2200 [-04]

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

● All dimensions in mm