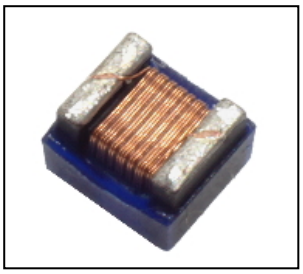
>>PEC-Coil>>

遠見電子股份有限公司

Providence Electronics Corp.

CHIP INDUCTORS

MODEL NO : VSFWI-1210F SERIES



Features :

- ∗ SMD version.
- ∗ Ultra-small size.
- ∗ High SRF and low DCR.
- ∗ Compliant with RoHS and REACH.
- ∗ AEC-Q200 compliance.

Application :

- ∗ Automotive.

Electrical Specification :

PART NO	Inductance (uH) NOTE(1)	Tolerance NOTE(2)	Q MIN. NOTE(1)	SRF (MHz) MIN.	DCR (Ω) MAX.	Isat (mA) NOTE(4)	Irms (mA) NOTE(5)		Color Coding		
							@25°C	@125°C			
VSFWI-1210F-R27	0.27	M	40	500	0.080	3900	3400	1800	Red	Violet	Brown
VSFWI-1210F-R33	0.33	M	40	500	0.090	3400	2600	1380	Orange	Orange	Brown
VSFWI-1210F-R39	0.39	M	40	500	0.090	3100	2200	1150	Orange	White	Brown
VSFWI-1210F-R47	0.47	M	40	500	0.090	3200	2200	1150	Yellow	Violet	Brown
VSFWI-1210F-R56	0.56	M	40	500	0.100	2900	2200	1150	Green	Blue	Brown
VSFWI-1210F-R68	0.68	M	40	450	0.120	2500	2200	1150	Blue	Gray	Brown
VSFWI-1210F-R82	0.82	M	40	450	0.105	2400	2200	1150	Gray	Red	Brown
VSFWI-1210F-R91	0.91	M	45	410	0.165	2100	1600	850	White	Brown	Brown
VSFWI-1210F-1R0	1.0	M	35	340	0.125	2400	1600	850	Brown	Black	Red
VSFWI-1210F-1R2	1.2	M	35	280	0.135	2400	1600	850	Brown	Red	Red
VSFWI-1210F-1R5	1.5	M	30	160	0.145	2100	1600	850	Brown	Green	Red
VSFWI-1210F-1R8	1.8	M	30	120	0.160	2100	1450	750	Brown	Gray	Red
VSFWI-1210F-2R0	2.0	M	30	110	0.165	1800	1450	750	Red	Black	Red
VSFWI-1210F-2R2	2.2	M	30	100	0.170	1800	1450	750	Red	Red	Red
VSFWI-1210F-2R5	2.5	M	30	80	0.190	1700	1400	740	Red	Green	Red
VSFWI-1210F-2R7	2.7	M	30	75	0.185	1500	1300	680	Red	Violet	Red
VSFWI-1210F-3R3	3.3	M	30	70	0.210	1600	1300	680	Orange	Orange	Red
VSFWI-1210F-4R7	4.7	M	28	55	0.300	1300	1100	570	Yellow	Violet	Red
VSFWI-1210F-5R6	5.6	K M	28	50	0.350	1100	1000	550	Green	Blue	Red
VSFWI-1210F-6R8	6.8	K M	28	45	0.370	1100	1000	550	Blue	Gray	Red
VSFWI-1210F-8R2	8.2	K M	28	45	0.470	940	900	450	Gray	Red	Red
VSFWI-1210F-100	10	K M	22	47	0.500	990	800	380	Brown	Black	Orange
VSFWI-1210F-120	12	K M	22	42	0.680	770	700	290	Brown	Red	Orange
VSFWI-1210F-150	15	K M	22	34	0.720	740	660	270	Brown	Green	Orange

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								@25˚C	@125˚C			
VSFWI-1210F-180	18	K	M	22	28	0.950	630	600	270	Brown	Gray	Orange
VSFWI-1210F-220	22	K	M	22	25	1.100	640	550	260	Red	Red	Orange
VSFWI-1210F-270	27	K	M	20	18	1.250	600	510	250	Red	Violet	Orange
VSFWI-1210F-330	33	K	M	20	13	1.370	490	420	220	Orange	Orange	Orange
VSFWI-1210F-390	39	K	M	20	13	1.850	400	400	210	Orange	White	Orange
VSFWI-1210F-470	47	K	M	20	12	1.880	470	400	210	Yellow	Violet	Orange
VSFWI-1210F-560	56	K	M	22	10	2.750	360	340	150	Green	Blue	Orange
VSFWI-1210F-680	68	K	M	22	10	3.000	380	330	130	Blue	Gray	Orange
VSFWI-1210F-820	82	K	M	22	10	4.100	300	280	110	Gray	Red	Orange
VSFWI-1210F-101	100	K	M	15	8	4.682	310	260	110	Brown	Black	Yellow
VSFWI-1210F-121	120	K	M	15	7	5.800	220	240	100	Brown	Red	Yellow
VSFWI-1210F-151	150	K	M	13	7	6.102	260	230	90	Brown	Green	Yellow
VSFWI-1210F-181	180	K	M	13	3	7.100	250	210	90	Brown	Gray	Yellow
VSFWI-1210F-221	220	K	M	13	3	7.650	220	190	90	Red	Red	Yellow
VSFWI-1210F-271	270	K	M	13	3	12.520	150	170	90	Red	Violet	Yellow
VSFWI-1210F-331	330	K	M	13	3	12.62	170	160	80	Orange	Orange	Yellow
VSFWI-1210F-391	390	K	M	13	3	23.00	120	140	80	Orange	White	Yellow
VSFWI-1210F-471	470	K	M	13	3	25.00	135	130	80	Yellow	Violet	Yellow
VSFWI-1210F-501	500	K	M	13	2	25.90	100	95	60	Green	Black	Yellow
VSFWI-1210F-561	560	K	M	13	2	27.00	100	95	60	Green	Blue	Yellow
VSFWI-1210F-681	680	K	M	13	2	31.00	100	95	60	Blue	Gray	Yellow
VSFWI-1210F-821	820	K	M	10	2	42.00	100	95	60	Gray	Red	Yellow
VSFWI-1210F-102	1000	K	M	10	2	46.00	95	95	60	Brown	Black	Red

NOTE(1): Measuring frequency: 0.27uH~0.91uH: 25MHZ
: 1.0uH~8.2uH:7.9MHZ
: 10uH~82uH:2.5MHZ
: 100uH~1000uH:1.0MHZ

NOTE(2): Tolerance: K = ±10% , M = ±20%

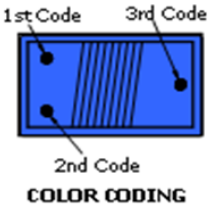
NOTE(3): L , Q、SRF : Agilent/HP E4991A+ Agilent/HP16197A or HP16193A
(The electrical specification test by the smallest gap position)

NOTE(4): The saturation current indicates the value of DC current is approximately 35% lower than its initial value of inductance.

NOTE(5): ΔT=40℃ approximately under the Irms current.

NOTE(6): Operating temperature range from -40℃ to 125℃ (ambient temperature plus self generation of heat)

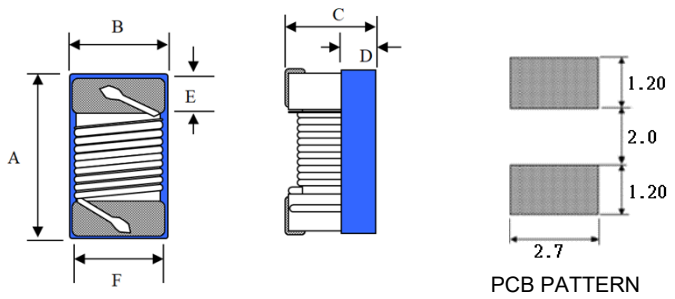
NOTE(7): Storage time :The recommended storage time of chip inductor is maximum 6 months, and don't suggest to use the parts over 6 months.



COLOR CODING

2022/10/03 Revise

Physical Dimension : (unit :mm)

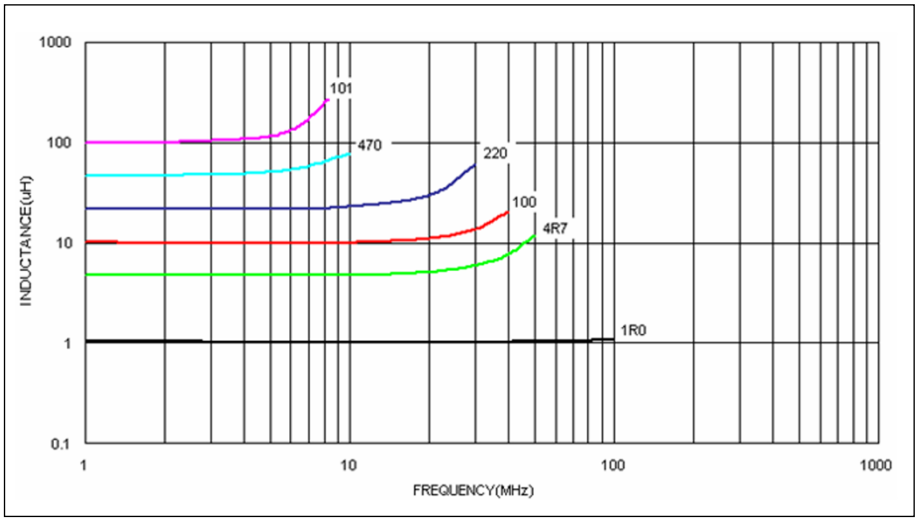


A	3.60 max.
B	2.90 max.
C	2.50 max.
D	1.10 ref.
E	0.5±0.1
F	2.40 ref.

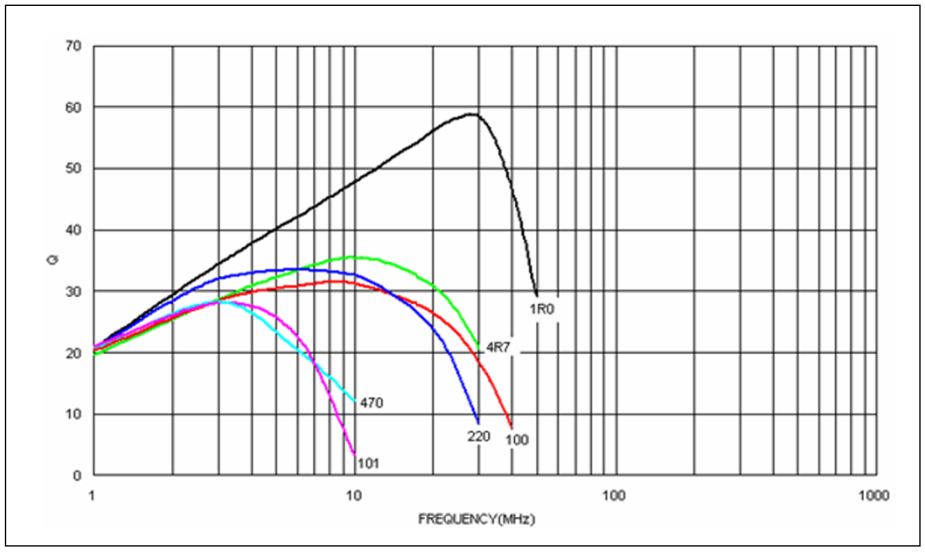
PACKAGING SPEC

1. REEL SIZE & UNITS PER REEL :7",2000PCS.
2. TAPE WIDTH:8.0 mm.
3. REEL WIDTH:14.4 mm.
4. COMPONENT PITCH:4.0 mm.

Inductance v.s Frequency



Q v.s Frequency



Cautions and warnings

● Please note the recommendations in our product specification (latest edition) and in the data sheets.

- Particular attention should be paid to the derating curves given there.
- The soldering conditions should also be observed. Temperatures quoted in relation to wave soldering refer to the pin, not the housing.

● If the components are to be washed with varnish it is necessary to check whether the washing varnish agent used has a negative effect on the wire insulation, any plastics that are used, or on glued joints. In particular, it is possible for washing varnish agent residues to have a negative effect in the long-term on wire insulation.

Washing processes may damage the product due to the possible static or cyclic mechanical loads (e.g. ultrasonic cleaning). They may cause cracks to develop on the product and its parts, which might lead to reduced reliability or lifetime.

● The following points must be observed if the components are potted in customer applications:

- Many potting materials shrink as they harden. They therefore exert a pressure on the plastic housing or core. This pressure can have a deleterious effect on electrical properties, and in extreme cases can damage the core or plastic housing mechanically.
- It is necessary to check whether the potting material used attacks or destroys the wire, wire insulation plastics or glue.
- The effect of the potting material can change the high-frequency behavior of the components.
- Many coating material have a negative effect (chemically and mechanically) on the winding wires, insulation materials and connecting points. Customers are always obligated to determine whether and to what extent their coating material influence the component. Customers are responsible and bear all risk for the use of the coating material.

● Ceramics / Ferrites are sensitive to direct impact. This can cause the core material to flake, or lead to breakage of the core.

● Even for customer-specific products, conclusive validation of the component in the circuit can only be carried out by the customer.

Important notes

The following applies to all products named in this publication:

1. Some parts of this publication contain **statement about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application**. As a rule, we are either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether a product with the properties described in the product specification is suitable for use in a particular customer application.

2. We also point out that **in individual cases, a malfunction of electronic components of failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they operated as specified**. In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of an electronic component.

3. **The warnings, cautions and product-specific notes must be observed.**

4. We constantly strive to improve our products. Consequently, **the products described in this publication may change from time to time**. The same is true of the corresponding product specifications. Please check therefore to what extent product descriptions and specifications contained in this publication are still applicable before or when you place an order.
   We also **reserve the right to discontinue production and delivery of products**. Consequently, we cannot guarantee that all products named in this publication will always be available. The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products.

5. **Our manufacturing sites serving the automotive business apply the IATF 16949 standard**. The IATF certifications confirm our compliance with requirements regarding the quality management system in the automotive industry. Referring to customer requirements and customer specific requirements (“CSR”) PEC always has and will continue to have the policy of respecting individual agreements. Even if IATF 16949 may appear to support the acceptance of unilateral requirements, we hereby like to emphasize that **only requirements mutually agreed upon can and will be implemented in our Quality Management System**. For clarification purposes we like to point out that obligations from IATF 16949 shall only become legally binding if individually agreed upon.