SMT Ferrite Chip Inductor
SFI201212S Series

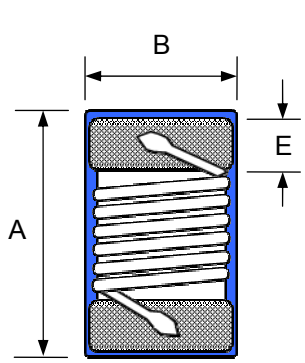
■ Feature

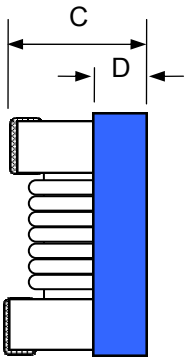
- Utilizing a miniaturized winding structure.
- These products provide high Q characteristics.
- Resin-coated surface enables excellent mounting.
- Low DC resistance design is ideal for low loss.
- Precision inductance tolerance is available.

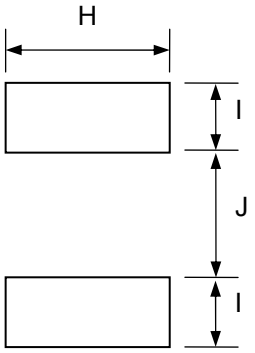
■ Application

- Personal computers, Hard disk drives.
- xDSL modem and Cable modem.
- Digital camera and other electronic equipment

■ SHAPES AND DIMENSIONS







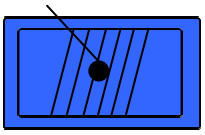
Unit	A max	B max	C	D ref	E
mm	2.4	1.65	1.20 ±0.1	0.65	0.44
inch	0.094	0.065	0.047 ±0.004	0.026	0.017

Recommend PAD Layout

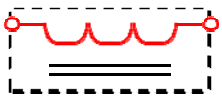
H	I	J
1.78	1.02	0.76
0.070	0.040	0.030

Marking : Color Coding

1st Code



Equivalent circuit



No Polarity

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■ PART NUMBER CODE

SFI	201212	S	330	J	A
1	2	3	4	5	6

1. Series Name
2. Size Code
3. Type Code
4. Inductance (R=Decimal Point) Unit：uH

   330 = 33uH
5. Inductance tolerance：

   “J” ±5%; “K” ±10%.
6. Soldering：A=Lead free

■ ELECTRICAL CHARACTERISTICS

1. Test equipments

   1.1. L, Q, SRF: Agilent/HP E4991A+ Agilent/HP16197A or equivalent

   1.2. Rdc: Chroma 16502 Digital Milli-ohm meter or equivalent

   1.3. Idc for Inductance drop 10% from its value without current.

   1.4. Operating temperature range -40℃ to 105℃

   1.5. Irms for 25℃ rise above 25℃ ambient.

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2. Part Number and Characteristics Table

Part Number	Inductance	Inductance	Q/MHz	SRF (MHz)	Rdc (Ω)	Idc (mA)	Color Coding
	(uH)/MHz	Tolerance	Min.	Min.	Max.	Max.	
SFI201212S-78N□A	0.078/7.9	J, K	13/7.9	1500	0.076	2000	Gray
SFI201212S-R10□A	0.10/25	K	20/25	1400	0.10	1700	White
SFI201212S-R11□A	0.11/25	K	25/25	1200	0.10	1700	White
SFI201212S-R12□A	0.12/25	J, K	25/25	1000	0.18	1500	Violet
SFI201212S-R15□A	0.15/25	J, K	25/25	1000	0.18	1400	Gray
SFI201212S-R18□A	0.18/25	J, K	30/25	1000	0.20	1400	Black
SFI201212S-R22□A	0.22/25	J, K	30/25	830	0.25	1350	Brown
SFI201212S-R27□A	0.27/25	J, K	30/25	800	0.38	1300	Red
SFI201212S-R33□A	0.33/25	J, K	30/25	750	0.35	1200	Orange
SFI201212S-R39□A	0.39/25	J, K	30/25	700	0.35	1160	Yellow
SFI201212S-R47□A	0.47/25	J, K	30/25	690	0.40	1100	Green
SFI201212S-R56□A	0.56/25	J, K	30/25	640	0.40	1040	Blue
SFI201212S-R62□A	0.62/25	J, K	30/25	640	0.45	980	Brown
SFI201212S-R68□A	0.68/25	J, K	30/25	510	0.50	900	Violet
SFI201212S-R75□A	0.75/25	J, K	30/25	500	0.50	900	Violet
SFI201212S-R82□A	0.82/25	J, K	30/25	500	0.50	900	Gray
SFI201212S-R91□A	0.91/25	J, K	30/25	500	0.55	900	Yellow
SFI201212S-1R0□A	1.0/7.9	J, K	20/7.9	470	0.50	840	White
SFI201212S-1R2□A	1.2/7.9	J, K	20/7.9	400	0.75	800	Black
SFI201212S-1R5□A	1.5/7.9	J, K	25/7.9	400	1.00	720	Brown
SFI201212S-1R8□A	1.8/7.9	J, K	25/7.9	230	1.00	660	Red
SFI201212S-2R2□A	2.2/7.9	J, K	25/7.9	200	1.05	600	Orange
SFI201212S-2R7□A	2.7/7.9	J, K	25/7.9	130	1.18	500	Yellow
SFI201212S-3R3□A	3.3/7.9	J, K	25/7.9	160	1.26	480	Green
SFI201212S-3R9□A	3.9/7.9	J, K	25/7.9	130	1.75	440	Blue
SFI201212S-4R7□A	4.7/7.9	J, K	25/7.9	120	1.87	390	Violet
SFI201212S-5R6□A	5.6/7.9	J, K	25/7.9	90	2.00	340	Gray
SFI201212S-6R8□A	6.8/7.9	J, K	25/7.9	55	2.15	300	White
SFI201212S-8R2□A	8.2/7.9	J, K	25/7.9	40	2.37	280	Black
SFI201212S-100□A	10/2.5	J, K	16/2.5	40	2.55	260	Brown
SFI201212S-120□A	12/2.5	J, K	16/2.5	37	2.80	220	Red
SFI201212S-150□A	15/2.5	J, K	16/2.5	30	3.80	200	Orange
SFI201212S-180□A	18/2.5	J, K	16/2.5	23	4.48	180	Yellow
SFI201212S-220□A	22/2.5	J, K	16/2.5	20	6.30	160	Green

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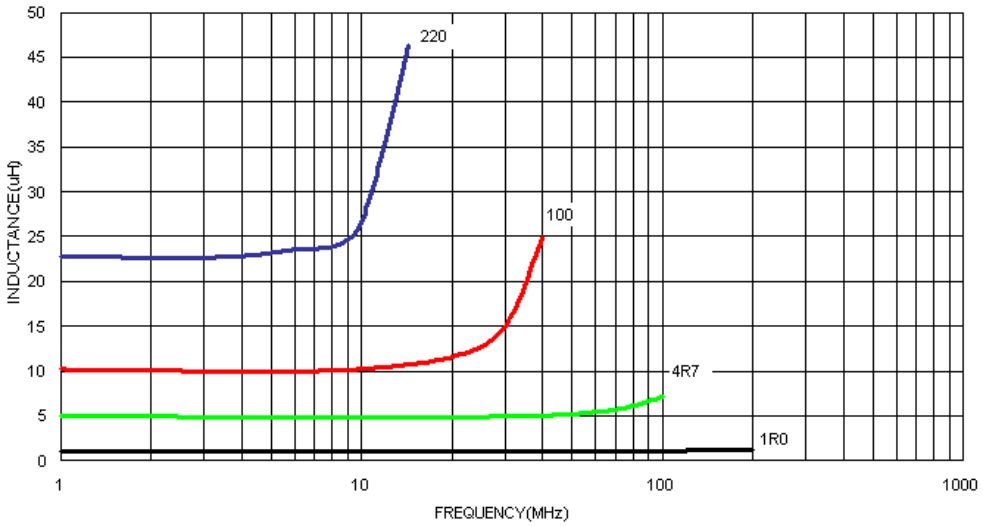
Part Number	Inductance (uH)/MHz	Inductance Tolerance	Q/MHz Min.	SRF (MHz) Min.	Rdc (Ω) Max.	Idc (mA) Max.	Color Coding
SFI201212S-270□A	27/2.5	J, K	16/2.5	19	6.85	140	Blue
SFI201212S-330□A	33/2.5	J, K	16/2.5	18	7.60	120	Violet
SFI201212S-390□A	39/2.5	J, K	15/2.5	16	8.20	100	Gray
SFI201212S-470□A	47/2.5	J, K	13/2.5	13	13.10	60	White

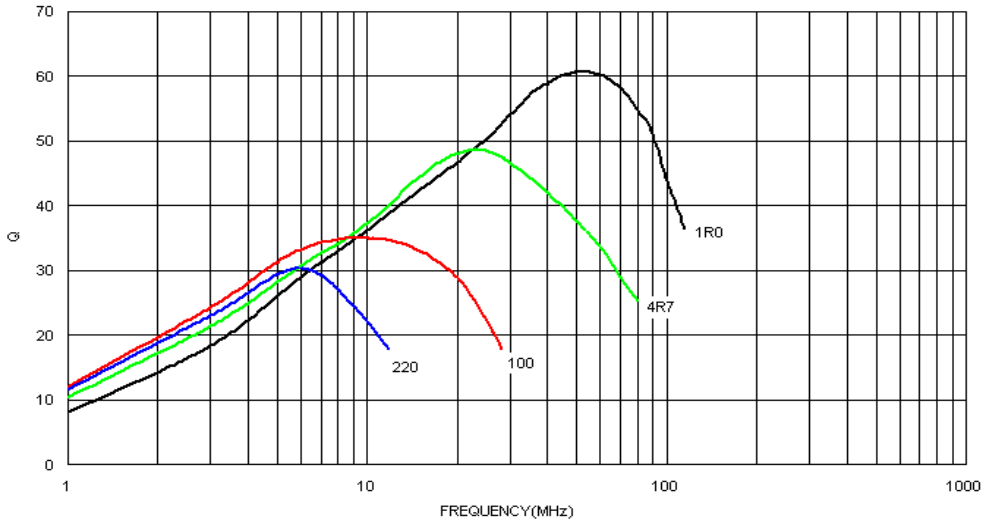
When ordering, please specify tolerance and packaging codes. Ex: SFI201212S-100JA ;
Tolerance : J = ±5% , K = ±10% ; Packaging: Clear tape and reel { standard }.

■ TYPICAL CHARACTERISTICS CURVE

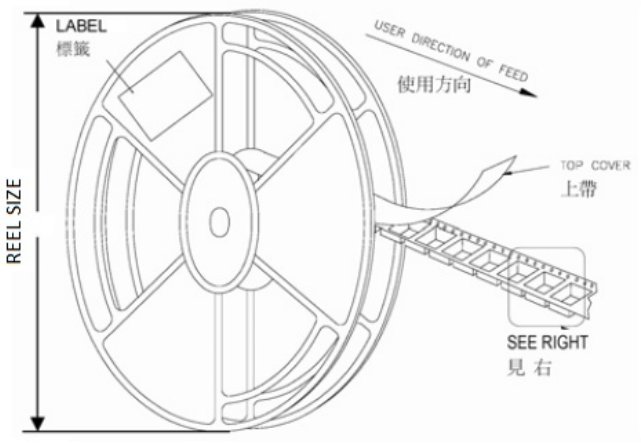
1. L VS. FREQUENCY CHARACTERISTICS

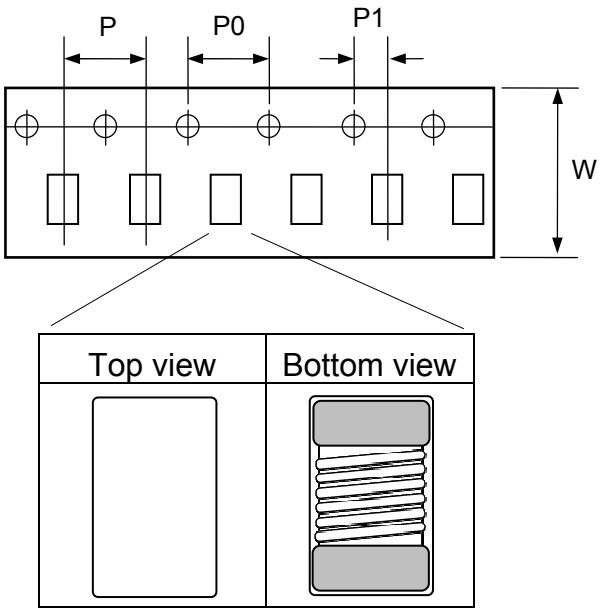


2. Q VS. FREQUENCY CHARACTERISTICS



■ REEL DIMENSIONS AND PACKAGING QUANTITY

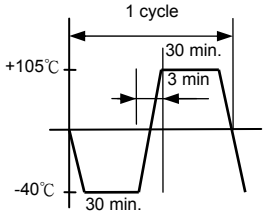




Unit: mm

TYPE	W	P	P0	P1	REEL SIZE	PCS / REEL
SFI201212S	8	4	4	2	180 mm (7”)	2000

■ RELIABILITY AND TEST CONDITION

Item (項目)	Required Characteristics (要求)	Test Method/Condition (測試方法)
Solderability	The metalized area must have 90% minimum solder coverage.	Dip pads in flux and dip in solder pot (96.5 Sn/3.5 Ag solder) at 255°C ±5°C.
Resistance to soldering heat	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Inductors shall be reflowed onto a PC board using 96.5 Sn/3.5 Ag solder paste. Solder process shall be at a maximum temperature of 260°C. For 96.5 Sn/3.5 Ag solder paste:>217°C for 90 seconds
Vibration	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Solder specimen inductor on the test printed circuit board. Apply vibrations in each of the x, y and z directions for 2 house for a total of 6 hours. Frequency : 10~50 Hz Amplitude : 1.5mm
High temperature resistance	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Inductors shall be subjected to temperature 105±2℃ for 50±12 hours. Measure the test items after leaving the inductors at room temperature and humidity for 2 hours.
Static Humidity	Inductors must not have a shorted or open winding.	Inductors shall be subjected to temperature 85±2℃ and 90 to 95%RH for ten 24hours. Measure the test items after leaving the inductors at room temperature and humidity for 2 hours.
Component adhesion (push test)	Inductors shall be subjected to 0.9Kg	Inductors shall be reflow soldered (255°C ±5°C for 10 seconds) to a tinned copper substrate. A force gauge shall be applied to the side of the component. The device must withstand the stated force without a failure of the termination.
Low temperature storage	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Inductors shall be subjected to temperature -40±2℃ for 48 ±12 hours. Measure the test items after leaving the inductors at room temperature and humidity for 1 to 2 hours.
Resistance to solvent	There must be no case deformation, change in dimensions, or obliteration of marking.	Inductors must withstand 6 minutes of alcohol or water.
Thermal shock	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Inductors shall be subjected to 5 cycles to the following temperature cycle:  Measure the test items after leaving the inductors at room temperature and humidity for 2 hours.

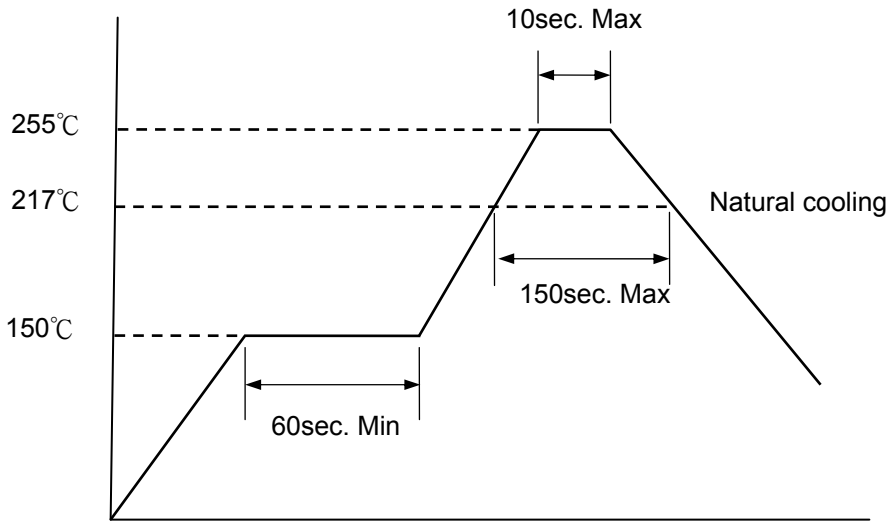
RoHS

■ RECOMMENDED SOLDERING CONDITIONS

Please use this product by reflow soldering

1. Recommended Reflow Pattern

Reflow : until two times



2. Iron Soldering

Use a solder iron of less than 30W when soldering, do not allow the soldering iron tip directly touch the Ceramic body outside of terminal electrode.
5 seconds max. at 260℃.

3. Attention in Case of Using

In case of using product, please avoid following matters:

Splashing water or salt water
Dew condenses
Toxic gas (Hydrogen sulfide, Sulfurous acid, Chlorine, Ammonia)
Vibrations or shocks which exceed the specified condition

Please be careful for the stress to this product by board flexure or something after the mounting.

4. Other

Operating temperature range : Ferrite Series :-40~+105℃
Storage condition : Temperature 20˚~25℃, Relative Humidity 40%~60%
Recommended wire wound inductors should be used within 6 months from the time of delivery.