

Axial Lead Inductors(Coils) For Signal Line

Conformity to RoHS Directive

SP Series SP0305

FEATURES

- The SP series inductors are available in ranging from 0203 to 0406 types.
- These are coaxial horizontal types, highly miniaturized and light-weight.
- Epoxy resin construction assures high reliability.
- Available in ammo-pack style tape packaging to support automated mounting machines.
- Terminal platings and internal connecting solder use lead-free materials.
- It is a product conforming to RoHS directive.

APPLICATIONS

Televisions, VCRs, personal computers, and other electronic equipment.

SPECIFICATIONS

Operating temperature range	-20 to +80°C [Including self-temperature rise]
Storage temperature range	-40 to +80°C [Unit of products]
Terminal tensile strength	9.8N min.

PRODUCT IDENTIFICATION

SP					
PL					
SPT	0305	SA-	1R0	K	- PF
	(1)	(2)	(3)	(4)	(5) (6)

(1)Series name

SP	Bulk
PL	Formed lead products
SPT	Taping (ammo-pack)

(2)Dimensions

0305	ø3.0×6.5mm
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(3)Packaging style

None	Bulk
S	Formed
SA	26mmTaping
A	52mmTaping

(4)Inductance value

1R0	1μH
100	10μH
101	100μH

(5)Inductance tolerance

K	±10%
J	±5%

(6)Lead-free compatible product

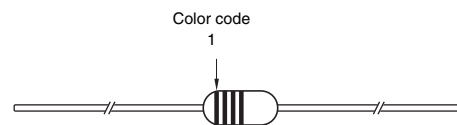
PF	Lead-free compatible product
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PACKAGING STYLE AND QUANTITIES

Packaging style	Quantity
Taping(Ammo-pack)	2000 pieces/box
Bulk	200 pieces/pack

COLOR CODE MARKINGS (from left)

- 1: The first effective number
- 2: The second effective number
- 3: Multiplier
- 4: Inductance tolerance



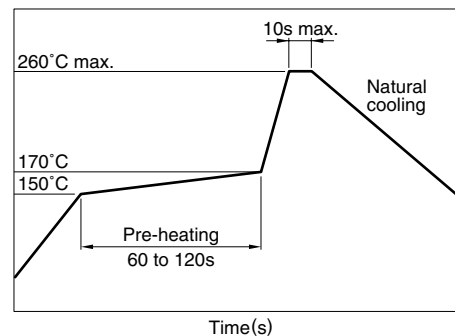
Color code table

Color	Effective number	Multiplier	Inductance tolerance
Black	0	1	—
Brown	1	10	—
Red	2	100	—
Orange	3	1000	—
Yellow	4	—	—
Green	5	—	—
Blue	5	—	—
Purple	7	—	—
Gray	8	—	—
White	9	—	—
Silver	—	0.01	±10%
Gold	—	0.1	±5%

- According to JIS-C-0801

RECOMMENDED SOLDERING CONDITIONS

FLOW SOLDERING



IRON SOLDERING

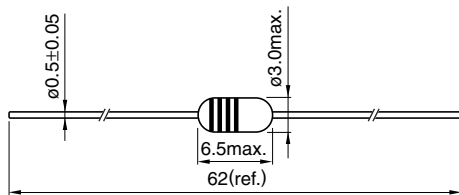
Tip temperature	350°C max.
Heating time	5 seconds/soldering

- The use of reflow soldering is not guaranteed.

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.

SHAPES AND DIMENSIONS



Dimensions in mm

CHARACTERISTICS

Operating temperature range	-20 to +80°C [Including self-temperature rise, 20°C max.]
Rated current	Based on temperature rise
Terminal tensile strength	9.8N min.
Terminal bending strength	2.94N min.

ELECTRICAL CHARACTERISTICS

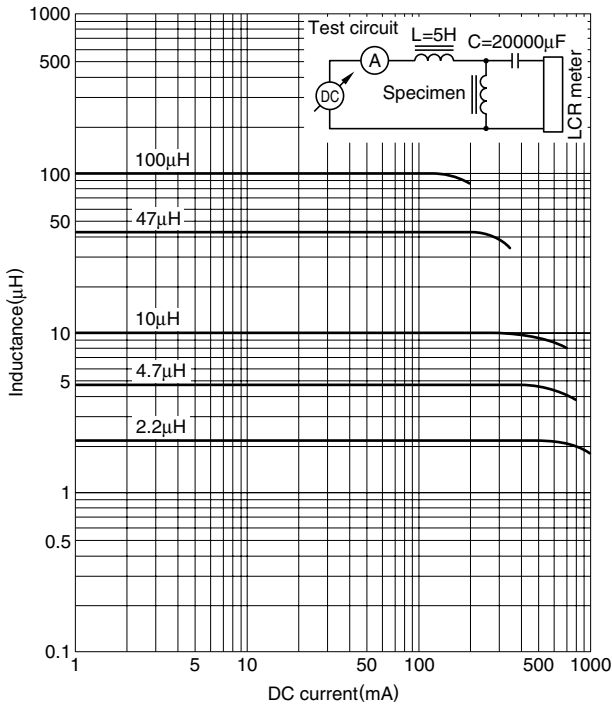
Inductance (μH)	Inductance tolerance	Q min.	Test frequency L, Q (MHz)	Self-resonant frequency (MHz)min.	DC resistance (Ω)max.	Rated current (mA)max.	Part No.
0.22	±10%	40	25.2	380	0.075	1150	SP0305-R22K-PF
0.27	±10%	40	25.2	360	0.085	1110	SP0305-R27K-PF
0.33	±10%	40	25.2	335	0.095	1110	SP0305-R33K-PF
0.39	±10%	40	25.2	310	0.10	1000	SP0305-R39K-PF
0.47	±10%	40	25.2	270	0.11	1000	SP0305-R47K-PF
0.56	±10%	40	25.2	245	0.12	950	SP0305-R56K-PF
0.68	±10%	40	25.2	230	0.13	900	SP0305-R68K-PF
0.82	±10%	40	25.2	200	0.14	875	SP0305-R82K-PF
1.00	±5%	40	25.2	180	0.15	815	SP0305-1R0J-PF
1.20	±5%	40	7.96	165	0.18	740	SP0305-1R2J-PF
1.50	±5%	45	7.96	150	0.20	700	SP0305-1R5J-PF
1.80	±5%	50	7.96	125	0.23	655	SP0305-1R8J-PF
2.20	±5%	50	7.96	110	0.25	630	SP0305-2R2J-PF
2.70	±5%	50	7.96	95	0.28	595	SP0305-2R7J-PF
3.30	±5%	50	7.96	68	0.30	575	SP0305-3R3J-PF
3.90	±5%	45	7.96	50	0.32	555	SP0305-3R9J-PF
4.70	±5%	45	7.96	38	0.35	530	SP0305-4R7J-PF
5.60	±5%	45	7.96	32	0.40	500	SP0305-5R6J-PF
6.80	±5%	40	7.96	28	0.45	470	SP0305-6R8J-PF
8.20	±5%	40	7.96	20	0.55	425	SP0305-8R2J-PF
10.0	±5%	40	7.96	18	0.75	370	SP0305-100J-PF
12.0	±5%	45	2.52	16	0.80	350	SP0305-120J-PF
15.0	±5%	50	2.52	16	0.93	335	SP0305-150J-PF
18.0	±5%	50	2.52	15	1.00	315	SP0305-180J-PF
22.0	±5%	50	2.52	13	1.20	285	SP0305-220J-PF
27.0	±5%	50	2.52	11	1.35	270	SP0305-270J-PF
33.0	±5%	50	2.52	10	1.50	255	SP0305-330J-PF
39.0	±5%	50	2.52	9.5	1.70	240	SP0305-390J-PF
47.0	±5%	60	2.52	8.5	2.70	205	SP0305-470J-PF
56.0	±5%	60	2.52	7.5	2.95	195	SP0305-560J-PF
68.0	±5%	60	2.52	6.5	3.30	185	SP0305-680J-PF
82.0	±5%	60	2.52	6.0	3.60	175	SP0305-820J-PF
100	±5%	60	2.52	5.5	4.10	165	SP0305-101J-PF
120	±5%	60	0.796	5.4	4.70	160	SP0305-121J-PF
150	±5%	60	0.796	4.75	5.40	150	SP0305-151J-PF
180	±5%	60	0.796	4.35	6.00	140	SP0305-181J-PF
220	±5%	60	0.796	4.0	6.80	130	SP0305-221J-PF
270	±5%	60	0.796	3.7	7.70	120	SP0305-271J-PF
330	±5%	60	0.796	3.4	11.1	100	SP0305-331J-PF
390	±5%	60	0.796	2.8	12.6	95	SP0305-391J-PF
470	±5%	60	0.796	2.55	14.0	90	SP0305-471J-PF
560	±5%	60	0.796	2.35	15.5	85	SP0305-561J-PF

• Different product names are used depending on the type of packaging used at the time of delivery. Please see "PRODUCT IDENTIFICATION" for details.

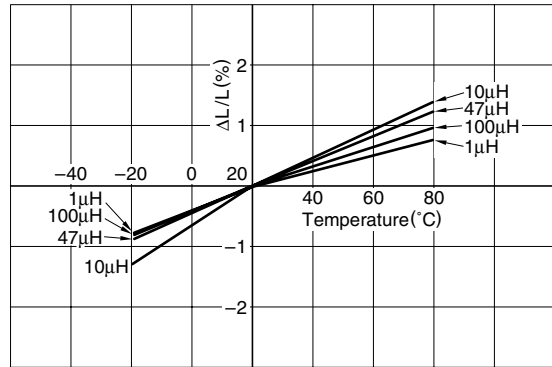
- Test equipment L, Q: HP4194A IMPEDANCE ANALYZER, or equivalent
SRF: HP8753C NETWORK ANALYZER, or equivalent
Rdc: NATIONAL VP-2941A MILLIOHM METER, or equivalent

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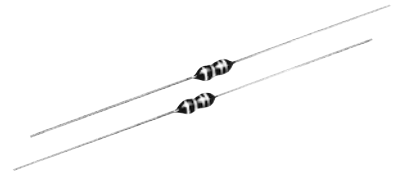
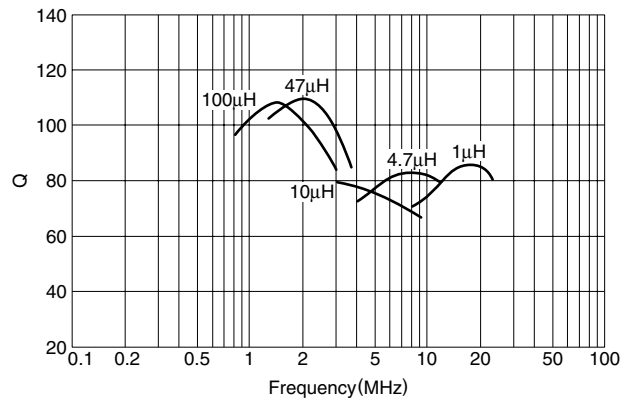
TYPICAL ELECTRICAL CHARACTERISTICS INDUCTANCE CHANGE vs. DC SUPERPOSITION CHARACTERISTICS



INDUCTANCE CHANGE vs. TEMPERATURE CHARACTERISTICS



Q vs. FREQUENCY CHARACTERISTICS



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