

Axial Lead Inductors(Coils) For Signal Line

Conformity to RoHS Directive

SP Series SP0406

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	24.5N min.

PRODUCT IDENTIFICATION

SP					
PL					
SPT	0406	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

0406	ø4.2×9.5mm
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(3)Packaging style

None	Bulk
S	Formed
SA	26mm Taping
A	52mm Taping

(4)Inductance value

1R0	1μH
100	10μH

(5)Inductance tolerance

K	±10%
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(6)Lead-free compatible product

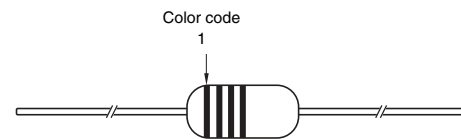
PF	Lead-free compatible product
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PACKAGING STYLE AND QUANTITIES

Packaging style	Quantity
Taping(Ammo-pack)	1000 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



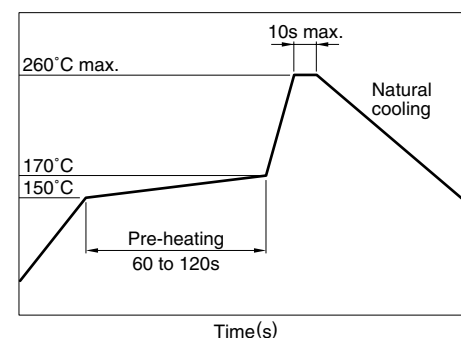
Color code table

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

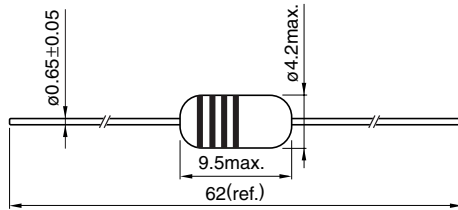
Tip temperature	350°C max.
Heating time	5 seconds/soldering

- 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

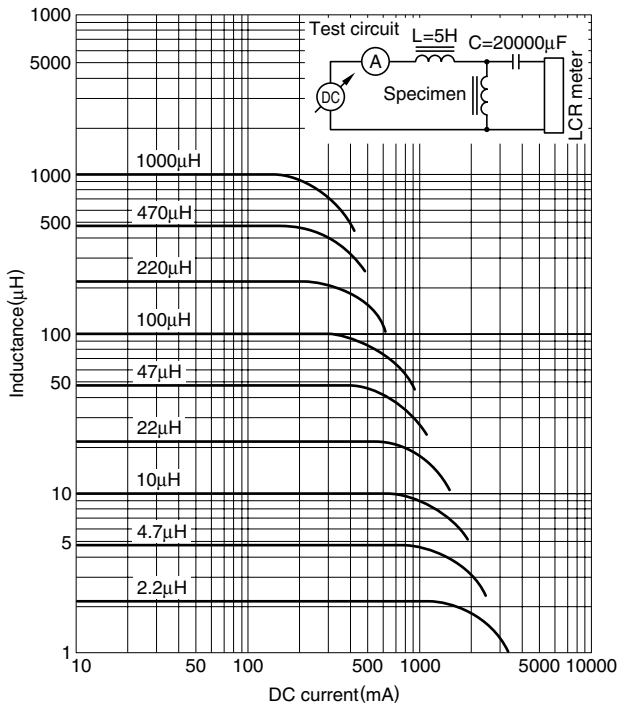
Operating temperature range	-20 to +80°C [Including self-temperature rise, 20°C max.]
Rated current	Based on temperature rise
Terminal tensile strength	24.5N min.
Terminal bending strength	4.9N min.

ELECTRICAL CHARACTERISTICS

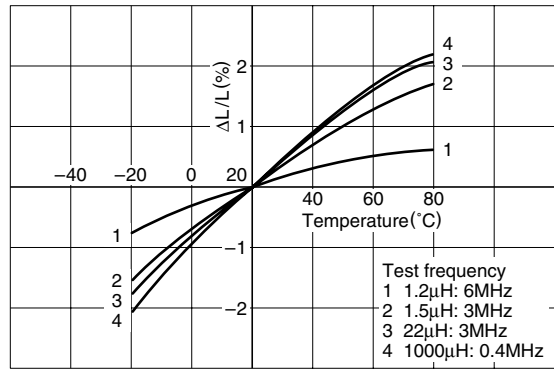
Inductance (μH)	Inductance tolerance	Q min.	Test frequency L, Q (MHz)	Self-resonant frequency (MHz)min.	DC resistance (Ω)max.	Rated current (mA)max.	Part No.
0.22	±10%	25	25.2	380	0.21	880	SP0406-R22K-ZPF
0.27	±10%	25	25.2	340	0.24	800	SP0406-R27K-ZPF
0.33	±10%	25	25.2	300	0.28	750	SP0406-R33K-ZPF
0.39	±10%	25	25.2	280	0.32	680	SP0406-R39K-ZPF
0.47	±10%	25	25.2	250	0.36	650	SP0406-R47K-ZPF
0.56	±10%	25	25.2	230	0.41	600	SP0406-R56K-ZPF
0.68	±10%	25	25.2	210	0.47	550	SP0406-R68K-ZPF
0.82	±10%	45	25.2	172	0.17	980	SP0406-R82K-PF
1.00	±10%	45	25.2	157	0.19	920	SP0406-1R0K-PF
1.20	±5%	50	7.96	144	0.21	880	SP0406-1R2J-PF
1.50	±5%	50	7.96	131	0.23	830	SP0406-1R5J-PF
1.80	±5%	55	7.96	121	0.25	790	SP0406-1R8J-PF
2.20	±5%	55	7.96	110	0.28	750	SP0406-2R2J-PF
2.70	±5%	60	7.96	100	0.30	720	SP0406-2R7J-PF
3.30	±5%	65	7.96	94	0.34	670	SP0406-3R3J-PF
3.90	±5%	65	7.96	86	0.37	640	SP0406-3R9J-PF
4.70	±5%	70	7.96	80	0.39	620	SP0406-4R7J-PF
5.60	±5%	70	7.96	74	0.43	590	SP0406-5R6J-PF
6.80	±5%	72	7.96	68	0.48	550	SP0406-6R8J-PF
8.20	±5%	80	7.96	48	0.52	530	SP0406-8R2J-PF
10.0	±5%	85	7.96	38	0.58	500	SP0406-10J-PF
12.0	±5%	75	2.52	25	0.63	480	SP0406-12J-PF
15.0	±5%	70	2.52	16	0.72	460	SP0406-15J-PF
18.0	±5%	65	2.52	14	0.77	430	SP0406-18J-PF
22.0	±5%	60	2.52	9.90	0.84	410	SP0406-22J-PF
27.0	±5%	55	2.52	7.60	0.94	390	SP0406-27J-PF
33.0	±5%	55	2.52	6.30	1.03	370	SP0406-33J-PF
39.0	±5%	50	2.52	6.30	1.12	350	SP0406-39J-PF
47.0	±5%	45	2.52	6.30	1.22	340	SP0406-47J-PF
56.0	±5%	40	2.52	6.20	1.34	320	SP0406-56J-PF
68.0	±5%	40	2.52	5.70	1.47	305	SP0406-68J-PF
82.0	±5%	35	2.52	5.30	1.62	290	SP0406-82J-PF
100	±5%	30	2.52	4.80	1.80	275	SP0406-101J-PF
120	±5%	70	0.796	3.80	3.70	185	SP0406-121J-PF
150	±5%	70	0.796	3.50	4.20	175	SP0406-151J-PF
180	±5%	70	0.796	3.30	4.60	165	SP0406-181J-PF
220	±5%	70	0.796	3.00	5.10	155	SP0406-221J-PF
270	±5%	65	0.796	2.80	5.80	145	SP0406-271J-PF
330	±5%	65	0.796	2.60	6.40	137	SP0406-331J-PF
390	±5%	65	0.796	2.40	7.00	133	SP0406-391J-PF
470	±5%	60	0.796	2.25	7.70	126	SP0406-471J-PF
560	±5%	60	0.796	2.10	9.00	120	SP0406-561J-PF
680	±5%	55	0.796	1.95	9.40	113	SP0406-681J-PF
820	±5%	55	0.796	1.85	10.5	100	SP0406-821J-PF
1000	±5%	50	0.796	1.70	12.0	100	SP0406-102J-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

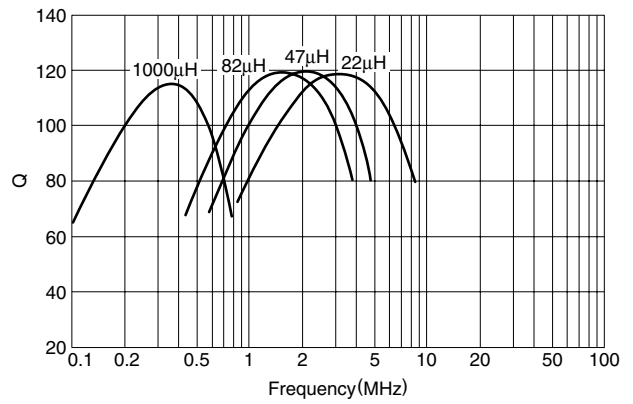
TYPICAL ELECTRICAL CHARACTERISTICS
INDUCTANCE CHANGE vs. DC SUPERPOSITION
CHARACTERISTICS



INDUCTANCE CHANGE vs. TEMPERATURE
CHARACTERISTICS



Q vs. FREQUENCY CHARACTERISTICS



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