

# Axial Lead Inductors(Coils) For Power Line

Conformity to RoHS Directive

## SP Series SP0508

### FEATURES

- These inductors feature low DC resistance and high current handling capacities, making them ideal for power supply line applications.
- These are coaxial horizontal types, highly miniaturized and lightweight.
- Available in ammo-pack style tape packaging to support automated mounting machines.

### APPLICATIONS

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

### SPECIFICATIONS

Inductance	1 to 4700 $\mu$ H
Operating temperature range	-20 to +85°C [Including self-temperature rise]
Storage temperature range	-40 to +85°C [Unit of products]
Terminal tensile strength	24.5N min.

### PRODUCT IDENTIFICATION

SP						
SPT	0508	A-	1R0	K	-3R8	- PF
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1)Series name (Taping products are standard)

SP	Bulk
SPT	Taping

(2)Dimensions

0508	$\phi$ 4.5×14mm
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(3)Packaging style

A	Dimensions in between tapes 52mm
No code	Bulk

(4)Inductance value

1R0	1 $\mu$ H
101	100 $\mu$ H

(5)Inductance tolerance

K	$\pm$ 10%
J	$\pm$ 5%

(6)Rated current

3R8	3.8A
R70	0.7A

(7)Lead-free compatible product

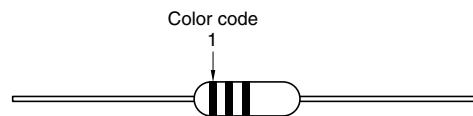
PF	Lead-free compatible product
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### PACKAGING STYLE AND QUANTITIES

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



### Color code table

Color	Effective number	Multiplier	Inductance tolerance
Black	0	1	$\pm$ 20%
Brown	1	10	—
Red	2	100	—
Orange	3	1000	—
Yellow	4	—	—
Green	5	—	—
Blue	6	—	—
Purple	7	—	—
Gray	8	—	—
White	9	—	—
Silver	—	0.01	$\pm$ 10%
Gold	—	0.1	$\pm$ 5%

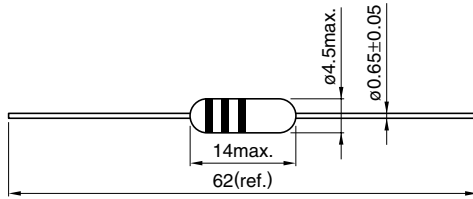
- According to JIS-C-0801



- 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 +85°C [Including self-temperature rise]
Storage temperature range	-40 to +85°C
Terminal bending strength	24.5N min.
Moisture resistance	$\Delta L/L \leq \pm 10\%$ $\Delta Q/Q \leq \pm 25\%$

## ELECTRICAL CHARACTERISTICS

Inductance ( $\mu\text{H}$ )	Inductance tolerance	Q min.	Test frequency L, Q (MHz)	Self- resonant frequency (MHz)ref.	DC resistance ( $\Omega$ )max.	Rated current(mA)*max.		Part No.
						Based on inductance change	Based on temperature rise	
1	$\pm 10\%$	10	7.96	300	0.022	5600	3800	SP0508-1R0K3R8-PF
1.2	$\pm 10\%$	10	7.96	260	0.024	5500	3700	SP0508-1R2K3R7-PF
1.5	$\pm 10\%$	10	7.96	250	0.026	5000	3600	SP0508-1R5K3R6-PF
1.8	$\pm 10\%$	10	7.96	240	0.029	4700	3100	SP0508-1R8K3R1-PF
2.2	$\pm 10\%$	10	7.96	220	0.031	4500	2900	SP0508-2R2K2R9-PF
2.7	$\pm 10\%$	10	7.96	195	0.034	4000	2700	SP0508-2R7K2R7-PF
3.3	$\pm 10\%$	10	7.96	155	0.038	3400	2600	SP0508-3R3K2R6-PF
3.9	$\pm 10\%$	10	7.96	115	0.04	3100	2500	SP0508-3R9K2R5-PF
4.7	$\pm 10\%$	10	7.96	85	0.044	2800	2400	SP0508-4R7K2R4-PF
5.6	$\pm 10\%$	10	7.96	55	0.048	2600	2100	SP0508-5R6K2R1-PF
6.8	$\pm 10\%$	10	7.96	50	0.051	2400	2000	SP0508-6R8K2R0-PF
8.2	$\pm 10\%$	10	7.96	38	0.056	2200	1950	SP0508-8R2K2R0-PF
10	$\pm 10\%$	10	7.96	24	0.062	2100	1900	SP0508-100K1R9-PF
12	$\pm 10\%$	10	2.52	18	0.076	1800	1800	SP0508-120K1R8-PF
15	$\pm 10\%$	10	2.52	16	0.088	1700	1700	SP0508-150K1R7-PF
18	$\pm 10\%$	10	2.52	15	0.11	1600	1600	SP0508-180K1R6-PF
22	$\pm 10\%$	10	2.52	14	0.13	1400	1550	SP0508-220K1R4-PF
27	$\pm 10\%$	10	2.52	13	0.14	1300	1300	SP0508-270K1R3-PF
33	$\pm 10\%$	10	2.52	11	0.2	1200	1200	SP0508-330K1R2-PF
39	$\pm 10\%$	10	2.52	10	0.22	1100	1000	SP0508-390K1R0-PF
43	$\pm 10\%$	10	2.52	9.5	0.28	1000	950	SP0508-430K1R0-PF
47	$\pm 10\%$	10	2.52	9.5	0.28	1000	950	SP0508-470KR95-PF
56	$\pm 10\%$	10	2.52	8	0.3	900	900	SP0508-560KR90-PF
68	$\pm 10\%$	10	2.52	7.5	0.34	800	800	SP0508-680KR80-PF
82	$\pm 10\%$	10	2.52	7	0.385	700	750	SP0508-820KR70-PF
100	$\pm 10\%$	10	2.52	6.5	0.48	700	700	SP0508-101KR70-PF
120	$\pm 10\%$	15	0.796	5	0.595	600	600	SP0508-121KR60-PF
150	$\pm 10\%$	15	0.796	4.5	0.9	550	500	SP0508-151KR50-PF
180	$\pm 10\%$	15	0.796	4	1.1	500	400	SP0508-181KR40-PF
220	$\pm 10\%$	15	0.796	3.8	1.25	440	390	SP0508-221KR39-PF
270	$\pm 10\%$	15	0.796	3.5	1.85	420	330	SP0508-271KR33-PF
330	$\pm 10\%$	15	0.796	3	2.1	380	310	SP0508-331KR31-PF
390	$\pm 10\%$	15	0.796	2.8	2.28	340	300	SP0508-391KR30-PF
470	$\pm 10\%$	15	0.796	2.5	3.22	320	280	SP0508-471KR28-PF
560	$\pm 10\%$	15	0.796	2.2	3.85	290	270	SP0508-561KR27-PF
680	$\pm 10\%$	15	0.796	2.1	4	260	240	SP0508-681KR24-PF
820	$\pm 10\%$	15	0.796	2	5	250	230	SP0508-821KR23-PF
1000	$\pm 10\%$	15	0.796	1.8	5.8	240	190	SP0508-102KR19-PF
1200	$\pm 10\%$	15	0.252	1.6	7.1	200	180	SP0508-122KR18-PF
1500	$\pm 10\%$	15	0.252	1.5	7.8	190	170	SP0508-152KR17-PF
4700	$\pm 10\%$	50	0.252	0.7	30	120	100	SP0508-472KR10-PF

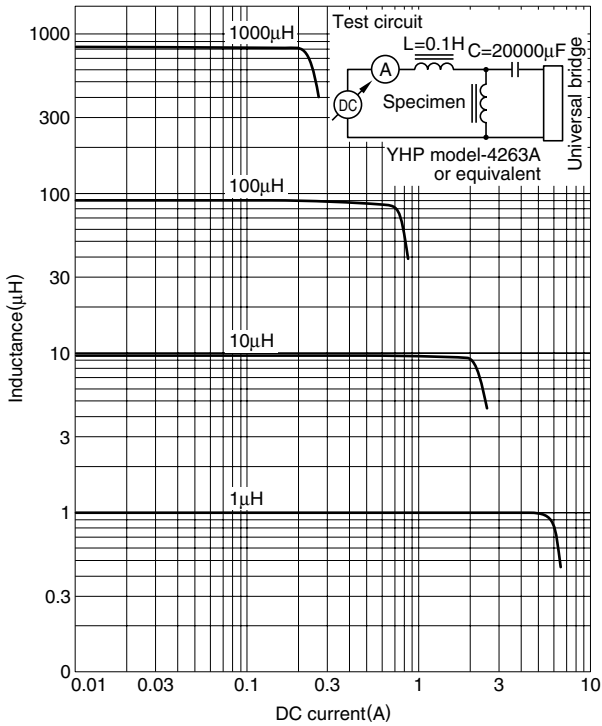
\* Rated current: Value obtained when current flows and the temperature has risen to 25°C or when DC current flows and the initial value of inductance has fallen by 10%, whichever is smaller.

• Product's part No. is changed as below by packaging style.  
[Example] Bulk: SP0508-1R0K3R8, Taping (52mm): SPT0508A-1R0K3R8

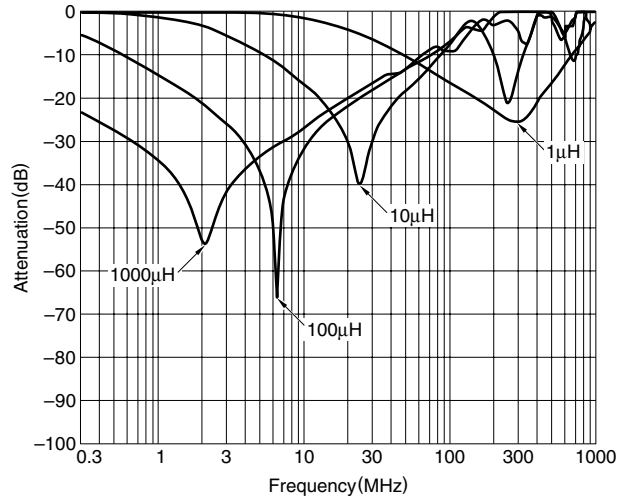
• Test equipment  
L: YHP4194A IMPEDANCE/GAIN-PHASE ANALYZER+HP16047D+TEST FIXTURE  
Q: YHP4340A Q-METER(TF-A terminal)  
SRF: HP8753C NETWORK ANALYZER+HP85047A S-PARAMETER TEST SET  
Rdc: MATSUSHITA VP-2941A DIGITAL MILLIOHM METER

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### TYPICAL ELECTRICAL CHARACTERISTICS INDUCTANCE CHANGE vs. DC SUPERPOSITION CHARACTERISTICS



### ATTENUATION vs. FREQUENCY CHARACTERISTICS



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