

Inductors

For Power Line

Axial

SP Series SP0508 Type

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 μ 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

<u>SP</u>						
<u>SPT</u>	<u>0508</u>	<u>A-</u>	<u>1R0</u>	<u>K</u>	<u>-3R8</u>	<u>-X</u>
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1)Series name (Taping products are standard)

SP	Bulk
SPT	Taping

(2)Dimensions

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

A	Dimensions in between tapes 52mm
No code	Bulk

(4)Inductance value

1R0	1 μ H
101	100 μ H

(5)Inductance tolerance

K	$\pm 10\%$
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(6)Rated current

3R8	3.8A
R70	0.7A

(7)TDK internal code

(Some products may not have this number. See the main body for details).

PACKAGING STYLE AND QUANTITIES

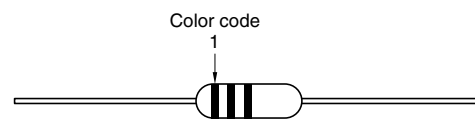
Packaging style	Quantity
Taping (Ammo-pack)	1000 pieces/box
Bulk	200 pieces/pack

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



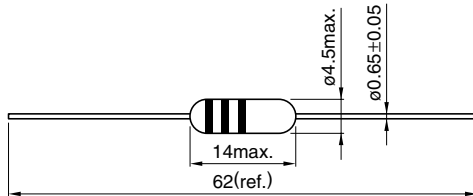
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SHAPES AND DIMENSIONS



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 (μH)	Inductance tolerance	Q min.	Test frequency L, Q (MHz)	Self-resonant frequency (MHz)ref.	DC resistance (Ω)max.	Rated current(mA)*max.		Part No.
						Based on inductance change	Based on temperature rise	
1	±10%	10	7.96	300	0.022	5600	3800	SP0508-1R0K3R8
1.2	±10%	10	7.96	260	0.024	5500	3700	SP0508-1R2K3R7
1.5	±10%	10	7.96	250	0.026	5000	3600	SP0508-1R5K3R6
1.8	±10%	10	7.96	240	0.029	4700	3100	SP0508-1R8K3R1
2.2	±10%	10	7.96	220	0.031	4500	2900	SP0508-2R2K2R9
2.7	±10%	10	7.96	195	0.034	4000	2700	SP0508-2R7K2R7
3.3	±10%	10	7.96	155	0.038	3400	2600	SP0508-3R3K2R6
3.9	±10%	10	7.96	115	0.04	3100	2500	SP0508-3R9K2R5
4.7	±10%	10	7.96	85	0.044	2800	2400	SP0508-4R7K2R4
5.6	±10%	10	7.96	55	0.048	2600	2100	SP0508-5R6K2R1
6.8	±10%	10	7.96	50	0.051	2400	2000	SP0508-6R8K2R0
8.2	±10%	10	7.96	38	0.056	2200	1950	SP0508-8R2K2R0
10	±10%	10	7.96	24	0.062	2100	1900	SP0508-100K1R9
12	±10%	10	2.52	18	0.076	1800	1800	SP0508-120K1R8
15	±10%	10	2.52	16	0.088	1700	1700	SP0508-150K1R7
18	±10%	10	2.52	15	0.11	1600	1600	SP0508-180K1R6
22	±10%	10	2.52	14	0.13	1400	1550	SP0508-220K1R4
27	±10%	10	2.52	13	0.14	1300	1300	SP0508-270K1R3
33	±10%	10	2.52	11	0.2	1200	1200	SP0508-330K1R2
39	±10%	10	2.52	10	0.22	1100	1000	SP0508-390K1R0
43	±10%	10	2.52	9.5	0.28	1000	950	SP0508-430K1R0
47	±10%	10	2.52	9.5	0.28	1000	950	SP0508-470KR95
56	±10%	10	2.52	8	0.3	900	900	SP0508-560KR90
68	±10%	10	2.52	7.5	0.34	800	800	SP0508-680KR80
82	±10%	10	2.52	7	0.385	700	750	SP0508-820KR70
100	±10%	10	2.52	6.5	0.48	700	700	SP0508-101KR70
120	±10%	15	0.796	5	0.595	600	600	SP0508-121KR60
150	±10%	15	0.796	4.5	0.9	550	500	SP0508-151KR50
180	±10%	15	0.796	4	1.1	500	400	SP0508-181KR40

* 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.

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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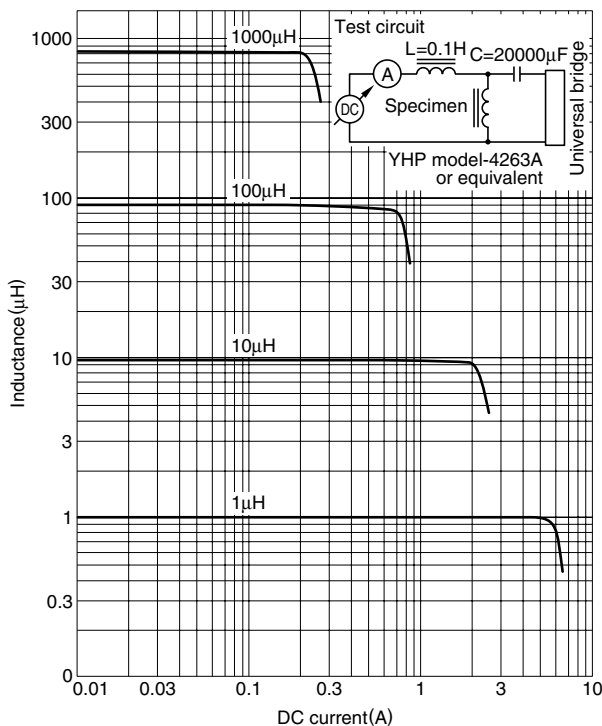
Inductance (μH)	Inductance tolerance	Q min.	Test frequency L, Q (MHz)	Self-resonant frequency (MHz)ref.	DC resistance (Ω)max.	Rated current(mA)*max.		Part No.
						Based on inductance change	Based on temperature rise	
220	±10%	15	0.796	3.8	1.25	440	390	SP0508-221KR39
270	±10%	15	0.796	3.5	1.85	420	330	SP0508-271KR33
330	±10%	15	0.796	3	2.1	380	310	SP0508-331KR31
390	±10%	15	0.796	2.8	2.28	340	300	SP0508-391KR30
470	±10%	15	0.796	2.5	3.22	320	280	SP0508-471KR28
560	±10%	15	0.796	2.2	3.85	290	270	SP0508-561KR27
680	±10%	15	0.796	2.1	4	260	240	SP0508-681KR24
820	±10%	15	0.796	2	5	250	230	SP0508-821KR23
1000	±10%	15	0.796	1.8	5.8	240	190	SP0508-102KR19
1200	±10%	15	0.252	1.6	7.1	200	180	SP0508-122KR18
1500	±10%	15	0.252	1.5	7.8	190	170	SP0508-152KR17
4700	±10%	50	0.252	0.7	30	120	100	SP0508-472KR10

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- 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

TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE CHANGE vs. DC SUPERPOSITION CHARACTERISTICS



ATTENUATION vs. FREQUENCY CHARACTERISTICS

