

# Inductors

## For General Applications

### Axial

## SP Series SP0203 Type

#### FEATURES

- The SP series inductors are available in 3 form factors ranging from 0203 to 0406.
- 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.

#### 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	SP0203: 9.8N min. SP0305: 9.8N min. SP0406: 24.5N min.

#### PRODUCT IDENTIFICATION

SP					
SPT	0203	SA-	1R0	J	-7
(1)	(2)	(3)	(4)	(5)	(6)

##### (1) Series name

SP	Bulk
SPT	Taping (ammo-pack)

##### (2) Dimensions

0203	ø2.4×3.4mm
0305	ø2.8×7mm
0406	ø4.2×9.5mm

##### (3) Packaging style

SA	Dimensions in between tapes 26mm (Standard products)
A	Dimensions in between tapes 52mm

##### (4) Inductance value

R10	0.1μH
1R0	1μH

##### (5) Inductance tolerance

J	±5%
K	±10%

##### (6) TDK internal code

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

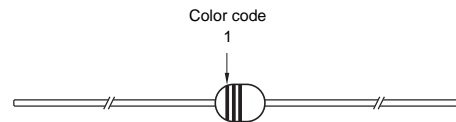
#### PACKAGING STYLE AND QUANTITIES

Packaging style	Type	Quantity
Taping	SPT0203	2000 pieces/box
(Ammo-pack)	SPT0305	2000 pieces/box
	SPT0406	1000 pieces/box

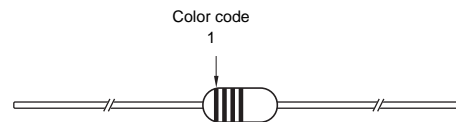
#### COLOR CODE MARKINGS (from left)

- 1: The first effective number
- 2: The second effective number
- 3: Multiplier
- 4: Inductance tolerance (SP0203 is omitted)

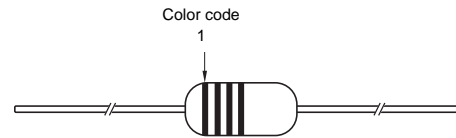
##### SP0203



##### SP0305



##### SP0406



#### Color code table

Color	Effective number	Multiplier	Inductance tolerance
Black	0	1	±20%
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

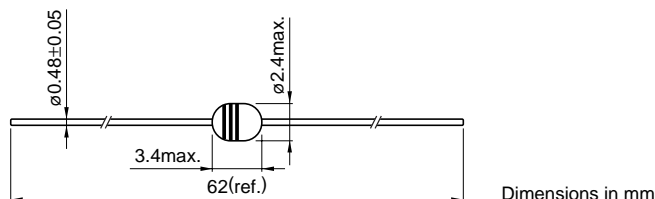
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### SHAPES AND DIMENSIONS



### CHARACTERISTICS

Operating temperature range	-20 to +80°C [Including self-temperature rise, 20°C max.]
Withstand voltage Erms	250V
Rated current	Based on temperature rise
Terminal tensile strength	9.8N min.
Terminal bending strength	2.94N min.
Moisture resistance	$\Delta L/L \leq \pm 5\%$ $\Delta Q/Q \leq \pm 20\%$

### 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.
0.1	±10%	40	25.2	600	0.16	800	SP0203-R10K-7
0.12	±10%	40	25.2	520	0.16	800	SP0203-R12K-7
0.15	±10%	40	25.2	500	0.16	790	SP0203-R15K-7
0.18	±10%	40	25.2	480	0.18	745	SP0203-R18K-7
0.22	±10%	40	25.2	420	0.2	705	SP0203-R22K-7
0.27	±10%	40	25.2	390	0.22	670	SP0203-R27K-7
0.33	±10%	40	25.2	350	0.24	645	SP0203-R33K-7
0.39	±10%	50	25.2	320	0.27	605	SP0203-R39K-7
0.47	±10%	50	25.2	300	0.3	575	SP0203-R47K-7
0.56	±10%	50	25.2	280	0.34	540	SP0203-R56K-7
0.68	±10%	50	25.2	240	0.38	510	SP0203-R68K-7
0.82	±10%	50	25.2	210	0.43	480	SP0203-R82K-7
1	±10%	50	25.2	190	0.46	465	SP0203-1R0K-7
1.2	±5%	50	7.96	110	0.52	435	SP0203-1R2J-7
1.5	±5%	50	7.96	80	0.57	415	SP0203-1R5J-7
1.8	±5%	50	7.96	66	0.6	405	SP0203-1R8J-7
2.2	±5%	50	7.96	60	0.65	390	SP0203-2R2J-7
2.7	±5%	50	7.96	54	0.73	370	SP0203-2R7J-7
3.3	±5%	50	7.96	48	0.82	345	SP0203-3R3J-7
3.9	±5%	50	7.96	44	0.9	330	SP0203-3R9J-7
4.7	±5%	50	7.96	38	1	315	SP0203-4R7J-7
5.6	±5%	50	7.96	34	1.1	300	SP0203-5R6J-7
6.8	±5%	50	7.96	30	1.2	285	SP0203-6R8J-7
8.2	±5%	50	7.96	26	1.3	275	SP0203-8R2J-7
10	±5%	50	7.96	24	1.4	265	SP0203-10J-7
12	±5%	50	2.52	22	1.5	255	SP0203-12J-7
15	±5%	50	2.52	20	1.65	245	SP0203-15J-7
18	±5%	50	2.52	18	1.9	225	SP0203-18J-7
22	±5%	50	2.52	17	2.2	210	SP0203-22J-7
27	±5%	50	2.52	16	2.5	200	SP0203-27J-7
33	±5%	50	2.52	14	3.8	160	SP0203-33J-7
39	±5%	50	2.52	13	4.2	150	SP0203-39J-7
47	±5%	50	2.52	12	4.6	145	SP0203-47J-7
56	±5%	40	2.52	11	5.1	140	SP0203-56J-7
68	±5%	40	2.52	10	5.6	130	SP0203-68J-7
82	±5%	40	2.52	9.5	9.6	100	SP0203-82J-7
100	±5%	40	2.52	8	10.8	95	SP0203-101J-7
120	±5%	40	0.796	6.5	12.5	85	SP0203-121J-7
150	±5%	40	0.796	6	14.5	80	SP0203-151J-7
180	±5%	40	0.796	5.5	16.3	75	SP0203-181J-7
220	±5%	40	0.796	5	20	70	SP0203-221J-7

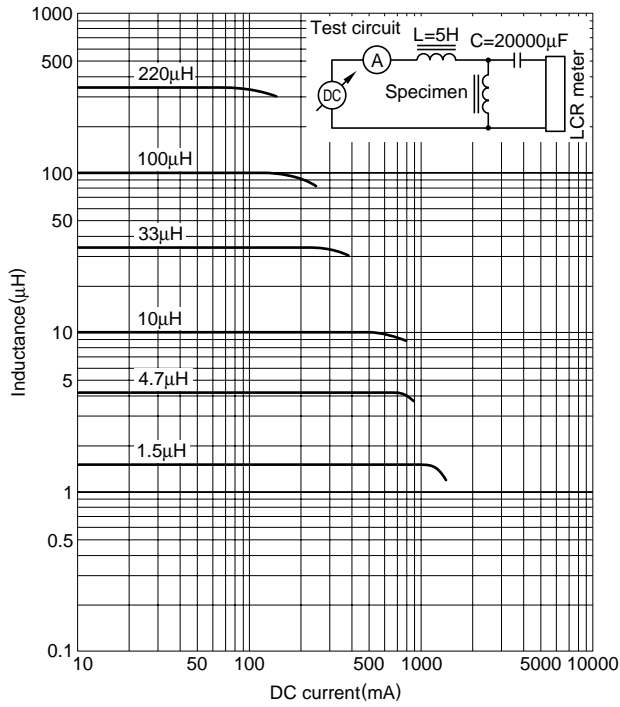
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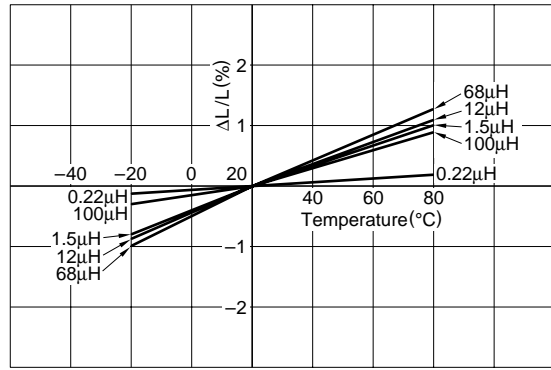
Axial

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



## INDUCTANCE CHANGE vs. TEMPERATURE CHARACTERISTICS



## Q vs. FREQUENCY CHARACTERISTICS

