

繞線貼片電感

SWCI03 (0603) Series
Wire Wound Chip Inductor (Standard)

Feature

Wire wound Ceramic Construction Provide High SRFs
Ultra-compact Inductors Provide Exceptional Q Values
Low profile , High Current are Available
Miniature SMD Chip Inductor for Fully Automated Assembly
Outstanding Endurance from Pull-up Force, Mechanical Shock and Pressure
Tighter Tolerance of $\pm 2\%$
Smaller Size of 0402 (1005)

Application

RF Products:
Cellular Phone (CDMA/GSM/PHS)
Cordless Phone (DECT/CT1CT2)
Remote Control, Security System
Wireless PDA
WLL, Wireless LAN / Mouse / Keyboard / Earphone
VCO, RF Module & Other Wireless Products
Base Station, Repeater
GPS Receiver

Figure:



IT Applications:

USB 2.0
IEEE 1394

Broad Band Applications:

CATV Filter, Tuner
Cable Modem/ XDSL Tuner
Set Top Box

ORDERING INFORMATION

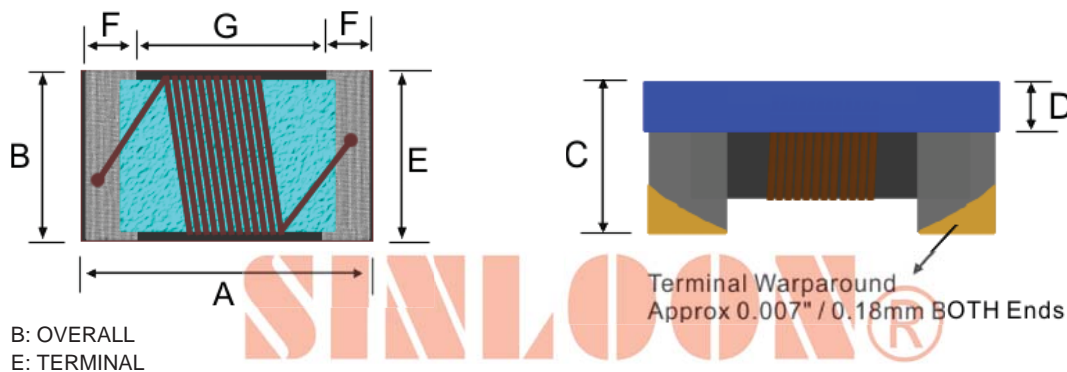
Example: SWCI03G10NT

Size	Design	Type	Tolerance	Inductance	Packing	Quantity
0402	S	WCI02	G= $\pm 2\%$	1N0=1 nH	T=Taping	4K/Reel
0603	L	WCI03	H= $\pm 3\%$	10N= 10 nH	B=Bulk	4K/Reel
0805	H	WCI05	J= $\pm 5\%$	101=100nH		2K/Reel
1008		WCI08	K= $\pm 10\%$	102=1000nH		2K/Reel
1206		WCI06	M= $\pm 20\%$	103=10000nH		2K/Reel

DIMENSION

Unit: mm

Type	A (Max)	B (Max.)	C (Max.)	D (Ref.)	E	F	G
SWCI02	1.27	0.76	0.61	0.15	0.15	0.23	0.56
SWCI03	1.80	1.12	1.02	0.38	0.76	0.33	0.86
SWCI05	2.29	1.73	1.52	0.51	1.27	0.44	1.02
SWCI08	2.92	2.79	2.03	0.65	2.03	0.51	1.52
SWCI06	3.56	2.16	1.52	0.50	1.20	0.50	2.20
LWCI05	2.29	1.73	1.03	0.51	1.27	0.44	1.02
LWCI08	2.92	2.79	2.03	0.65	2.03	0.51	1.52
HWCI03	1.80	1.12	1.02	0.38	0.76	0.33	0.86
HWCI05	2.29	1.73	1.52	0.51	1.27	0.44	1.02
HWCI08	2.92	2.79	2.03	0.65	2.03	0.51	1.52



Remark Design:

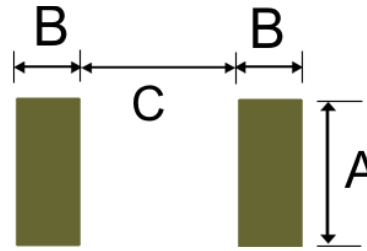
S = Standard.
L = Low Profile Inductor.
H = High Current and High Q

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PAD LAYOUT

Type	A	B	C
SWCI02	0.66	0.50	0.46
SWCI03	1.02	0.64	0.64
SWCI05	1.78	1.02	0.76
SWCI08	2.54	1.02	1.27
SWCI06	1.93	1.02	1.78
LWCI05	1.78	1.02	0.76
LWCI08	2.54	1.02	1.27
HWCI03	1.02	0.64	0.64
HWCI05	1.78	1.02	0.76
HWCI08	2.54	1.02	1.27



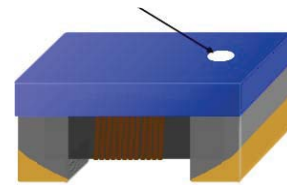
Color Coding

0603 / 0805/1206/1008 Series (0402 Series is No Color Coding)

Because of small sizes, these parts are marked with a single color dot.

The inductance value represented by the dot is shown on the data page for each series.

Color Coding



Environmental Characteristics

Mechanical Performance

Item	Specification	Test Method
1 Vibration Test	Appearance: No damage L change: within $\pm 5\%$ Q change: within $\pm 10\%$	Test device shall be soldered on the substrate Oscillation Frequency: 10 to 55 to 10Hz for 1min Amplitude: 1.5mm Time: 2hrs for each axis (X, Y & Z), total 6hrs Solder Temperature: $260 \pm 5^\circ\text{C}$ Immersion Time: $10 \pm 2\text{sec}$
2 Resistance to		
3 Component Adhesion	1 lbs. For 0402 2 lbs. For 0603 3 lbs. For the rest	The device should be soldered ($260 \pm 5^\circ\text{C}$ for 10 seconds) to a tinned copper subs rate. A dynamiter force gauge should be applied to the side of the component. The device must with stand a minimum force of 2 or 4 pounds without a failure of adhesion on termination Dropping chip by each side and each corner. Drop 10 times in total Drop height :100cm Drop weight:125g
4 Drop Test	No damage	
5 Solderability Test	90% covered with solder.	Inductor shall be dipped in a melted solder bath at $235 \pm 5^\circ\text{C}$ for 5 second
6 Resistance to Solvent Test	No damage on appearance and marking.	MIL-STD202F, Method 215D

Electrical Performance Test

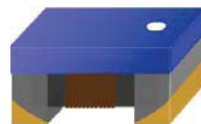
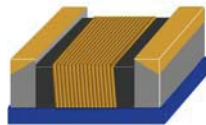
Item	Specification	Test Method
1. Inductance	Refer to standard electrical characteristic spec.	HP4291B
2. Q		HP4291B
3. SRF		HP8753D
4. DC Resistance RDC		Micro-Ohm meter (Gom-801G)
5. Rated Current IDC	Inductors shall have no evidence of electrical and mechanical damage	Applied the current to coils, The inductance change should be less than 10% to initial value
6. Over Load Test		Applied 2 times of rated allowed DC current to inductor for a period of 5 minute
7 Withstanding Voltage Test		AC voltage of 500 VAC applied between inductors terminal and case for 1 minute.
8 Insulation Resistance Test	1000M ohm min	100 VDC applied between inductor terminal and case

Environmental Characteristics

Climatic Test

Item	Specification	Test Method															
1 Temperature Characteristic	Appearance: No damage L change: within $\pm 10\%$ Q change: within $\pm 20\%$	-40°C ~ +125°C Temperature: 40 ± 2 °C Relative Humidity: 90~95% Time: 96hrs ± 2 hrs Measured after exposure in the room condition for 2hrs															
2 Humidity Resistance		Temperature: -40 ± 2 °C Time: 96 ± 2 hrs Inductors are tested after 1 hour at room temperature															
3 Low Temperature Storage Test		One cycle: Total: 5 cycles															
4 Thermal Shock Test		<table border="1"> <thead> <tr> <th>Step</th> <th>Temperature (°C)</th> <th>Time (min)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-25± 3</td> <td>30</td> </tr> <tr> <td>2</td> <td>25± 2</td> <td>15</td> </tr> <tr> <td>3</td> <td>125± 3</td> <td>30</td> </tr> <tr> <td>4</td> <td>25± 2</td> <td>15</td> </tr> </tbody> </table>	Step	Temperature (°C)	Time (min)	1	-25 ± 3	30	2	25 ± 2	15	3	125 ± 3	30	4	25 ± 2	15
Step		Temperature (°C)	Time (min)														
1		-25 ± 3	30														
2		25 ± 2	15														
3	125 ± 3	30															
4	25 ± 2	15															
5 High Temperature Storage Test	Temperature: 125 ± 2 °C Time: 96 ± 2 hrs Measured after exposure in the room condition for 1hr																
6 High Temperature Load Life Test	Temperature: 85 ± 2 °C Time: 1000 ± 12 hrs Load: Allowed DC current																
7 Humidity Load Life	Temperature: 40 ± 2 °C Relative Humidity: 90~95% Time: 1000 ± 12 hrs Load: Allowed DC current																

※Storage Temperature :25 ± 3 °C; Humidity:<80%RH



Standard Electrical Specifications
SWCI03 Wire Wound Chip Inductors (Standards)

Part Number	Inductance nH	Tolerance (%)	Quality Factor /min.	Self Resonant Frequency /min. (GHz)	Resistance DC/Max (Ohm)	Current DC/Max (mA)	900MHz		1.7GHz		Color Code
							L	Q	L	Q	
WC103 □1N6T	1.6 @ 250MHz	10,5	24	12.5	0.030	700	1.53	35	1.58	55	Blue
WC103 □1N8T	1.8 @ 250MHz	10,5	16	12.5	0.045	700	1.63	35	1.66	50	Black
WC103 □2N2T	2.2 @ 250MHz	10,5	20	6.00	0.100	700	2.18	41	2.20	64	White
WC103 □2N3T	2.3 @ 250MHz	10,5	16	>4.00	0.140	700	2.32	32	2.35	40	Yellow
WC103 □2N7T	2.7 @ 250MHz	10,5	16	>4.00	0.140	700	2.39	25	2.44	55	Yellow
WC103 □3N3T	3.3 @ 250MHz	10,5,2	22	>6.00	0.080	700	3.35	47	3.40	65	Red
WC103 □3N6T	3.6 @ 250MHz	10,5,2	22	5.80	0.063	700	3.53	49	3.58	65	Violet
WC103 □3N9T	3.9 @ 250MHz	10,5,2	22	>6.00	0.080	700	3.95	49	3.96	67	Brown
WC103 □4N3T	4.3 @ 250MHz	10,5,2	22	5.80	0.063	700	4.32	49	4.43	67	Orange
WC103 □4N5T	4.5 @ 250MHz	10,5,2	20	5.80	0.120	700	4.74	55	4.87	92	Gray
WC103 □4N7T	4.7 @ 250MHz	10,5,2	20	5.80	0.120	700	4.65	53	4.80	67	Violet
WC103 □5N1T	5.1 @ 250MHz	10,5,2	20	5.80	0.160	700	5.13	47	5.36	56	Green
WC103 □5N6T	5.6 @ 250MHz	10,5,2	20	5.80	0.170	700	5.53	56	5.86	77	Yellow
WC103 □6N2T	6.2 @ 250MHz	10,5,2	25	5.80	0.110	700	6.28	60	6.40	85	Black
WC103 □6N3T	6.3 @ 250MHz	10,5,2	25	5.80	0.110	700	6.67	41	6.86	61	Black
WC103 □6N8T	6.8 @ 250MHz	10,5,2	27	5.80	0.110	700	6.75	60	7.10	81	Red
WC103 □7N5T	7.5 @ 250MHz	10,5,2	28	4.80	0.106	700	7.70	60	7.82	65	Brown
WC103 □8N2T	8.2 @ 250MHz	10,5,2	27	4.80	0.110	700	8.25	64	8.40	81	Green
WC103 □8N7T	8.7 @ 250MHz	10,5,2	28	4.60	0.109	700	8.86	62	9.32	58	Yellow
WC103 □9N1T	9.1 @ 250MHz	10,5,2	35	4.80	0.130	700	9.20	70	9.70	80	Black
WC103 □9N5T	9.5 @ 250MHz	10,5,2	28	5.40	0.135	700	9.70	59	9.92	61	Blue
WC103 □10NT	10.0 @ 250MHz	10,5,2	31	4.80	0.130	700	10.0	66	10.6	83	Orange
WC103 □11NT	11.0 @ 250MHz	10,5,2	31	4.00	0.086	700	11.3	53	12.1	56	Gray
WC103 □12NT	12.0 @ 250MHz	10,5,2	35	4.00	0.130	700	12.3	72	13.5	83	Yellow
WC103 □15NT	15.0 @ 250MHz	10,5,2	35	4.00	0.170	700	15.4	64	16.8	89	Green
WC103 □16NT	16.0 @ 250MHz	10,5,2	35	3.30	0.110	700	16.5	55	18.0	52	White
WC103 □17NT	17.0 @ 250MHz	10,5,2	35	3.20	0.170	700	17.6	56	19.4	44	Red
WC103 □18NT	18.0 @ 250MHz	10,5,2	35	3.10	0.170	700	18.7	70	21.4	69	Blue
WC103 □20NT	20.0 @ 250MHz	10,5,2	40	3.00	0.190	700	20.7	80	23.5	30	Green
WC103 □22NT	22.0 @ 250MHz	10,5,2	38	3.00	0.190	700	22.8	73	26.1	71	Violet
WC103 □23NT	23.0 @ 250MHz	10,5,2	38	2.85	0.190	700	24.1	71	28.0	71	Orange
WC103 □24NT	24.0 @ 250MHz	10,5,2	36	2.80	0.130	700	25.7	45	30.9	40	Black
WC103 □27NT	27.0 @ 250MHz	10,5,2	40	2.80	0.220	600	29.2	74	34.6	65	Gray
WC103 □30NT	30.0 @ 250MHz	10,5,2	37	2.80	0.150	600	31.4	47	39.8	28	Brown
WC103 □33NT	33.0 @ 250MHz	10,5,2	40	2.30	0.220	600	36.0	67	49.5	42	White
WC103 □36NT	36.0 @ 250MHz	10,5,2	37	2.30	0.250	600	39.1	47	48.9	24	Red
WC103 □39NT	39.0 @ 250MHz	10,5,2	40	2.20	0.250	600	42.7	60	60.2	40	Black
WC103 □43NT	43.0 @ 200MHz	10,5,2	38	2.00	0.280	600	46.9	44	60.3	21	Orange
WC103 □47NT	47.0 @ 200MHz	10,5,2	38	2.00	0.280	600	52.2	62	77.2	35	Brown
WC103 □51NT	51.0 @ 200MHz	10,5,2	35	1.90	0.280	600	55.5	69	82.2	34	Blue
WC103 □56NT	56.0 @ 200MHz	10,5,2	38	1.90	0.310	600	62.5	56	97.0	26	Red
WC103 □62NT	62.0 @ 200MHz	10,5,2	37	1.80	0.340	600	68.0	40	110	10	Gray
WC103 □68NT	68.0 @ 200MHz	10,5,2	37	1.70	0.340	600	80.5	54	168	21	Orange
WC103 □72NT	72.0 @ 150MHz	10,5,2	34	1.70	0.490	400	82.0	53	135	20	Yellow
WC103 □82NT	82.0 @ 150MHz	10,5,2	34	1.70	0.540	400	96.2	54	177	21	Green
WC103 □91NT	91.0 @ 150MHz	10,5,2	30	1.70	0.500	400	110	50	-	-	Brown
WC103 □101NT	100 @ 150MHz	10,5,2	34	1.40	0.580	400	124	49	-	-	Blue
WC103 □111NT	110 @ 150MHz	10,5,2	32	1.35	0.610	300	138	43	-	-	Violet
WC103 □121NT	120 @ 150MHz	10,5,2	32	1.30	0.650	300	166	39	-	-	Gray
WC103 □131NT	130 @ 150MHz	10,5,2	30	1.40	0.720	300	185	60	-	-	White
WC103 □141NT	140 @ 100MHz	10,5,2	28	1.30	0.870	280	190	80	-	-	Blue
WC103 □151NT	150 @ 100MHz	10,5,2	32	1.30	0.950	280	230	25	-	-	White
WC103 □161NT	160 @ 100MHz	10,5,2	25	1.30	1.400	280	215	-	-	-	Yellow
WC103 □181NT	180 @ 100MHz	10,5,2	25	1.25	1.400	250	305	22	-	-	Black
WC103 □221NT	220 @ 100MHz	10,5,2	25	1.20	1.600	250	377	-	-	-	Brown
WC103 □261NT	260 @ 100MHz	10,5,2	25	1.00	2.000	200	469	-	-	-	Violet
WC103 □271NT	270 @ 100MHz	10,5,2	25	0.90	2.100	200	-	-	-	-	Red
WC103 □281NT	280 @ 100MHz	10,5,2	25	1.00	2.400	100	-	-	-	-	Green
WC103 □301NT	300 @ 100MHz	10,5,2	25	0.75	2.500	150	-	-	-	-	Orange
WC103 □331NT	330 @ 100MHz	10,5,2	25	0.90	3.800	100	-	-	-	-	Blue
WC103 □391NT	390 @ 100MHz	10,5,2	25	0.90	4.350	100	-	-	-	-	Yellow
WC103 □471NT	470 @ 100MHz	10,5,2	23	0.60	3.60	80	-	-	-	-	White