

1. WTI Series (Ceramic Type)

Range of Size: (0402(1005)~1008(2520))

Test Equipment: **HP4286, E4982A** - For "Inductance" & "Q"

HP4286 & E4982A - For "SRF"

HP4287A, GOM-801G & 502BC - For "DCR"

Operating Temperature: -40 ~+125



Applications

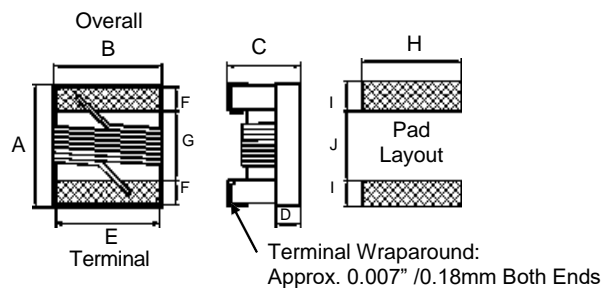
- > Cordless (DECT/CT1CT2) & Cellular (CDMA/GSM/PHS) Phone.
- > Remote control, wireless security system.
- > WLL, Wireless LAN / Mouse / Keyboard / Earphone.
- > GPS receiver.
- > VCO, RF Module & other wireless products.
- > CATV Filter, Tuner.
- > Cable Modem / XDSL Tuner.
- > Set Top Box.

Features

- > Wirewound ceramic construction provide high SRF.
- > Ultra compact inductors provide exceptional Q values.
- > Low Profile, high Q are available.
- > Outstanding endurance from Pull-up force, mechanical shock and pressure.
- > Smaller size of 0402(1005) & tighter tolerance down to +/- 2%.

General Dimensions and Configuration

SHAPE:



DIMENSIONS:

Unit: mm

Type	Size (Inch)	A max.	B max.	C max.	D Ref.	E	F	G	H	I	J	Weight (g) (1000pcs)
WTI-0402V	0402	1.27	0.76	0.61	0.15	0.51	0.23	0.56	0.66	0.50	0.46	0.8
WTI-0603V	0603	1.80	1.12	1.02	0.38	0.76	0.33	0.86	1.02	0.64	0.64	3.46
WTI-0805V	0805	2.29	1.73	1.52	0.51	1.27	0.44	1.02	1.78	1.02	0.76	12.13
WTI-1008V	1008	2.92	2.79	2.13	0.65	2.03	0.51	1.52	2.54	1.02	1.27	30.73

1. WTI Series (Ceramic Type)

Range of Size: (0402(1005)~1008(2520))

Test Equipment: **HP4286, 4287A & 4291B** - For "Inductance" & "Q"

HP4287A & 8753E - For "SRF"

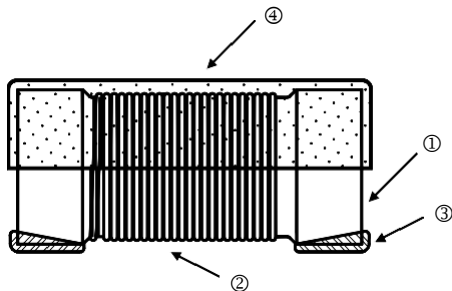
HP4287A, GOM-801G & 502BC - For "DCR"

Operating Temperature : -40 ~+125

Inductance, SRF, Q and Rated Current ranges

SERIES	Inductance (nH)	SRF (Min.) (GHz)	Q (Min.)	I (Rated) (mA)
WTI-0402V	1.00~68	12.700~1.620	15~25	1360~100
WTI-0603V	1.60~390	12.500~0.900	16~40	700~100
WTI-0805V	2.70~4700	7.900~0.188	15~65	600~90
WTI-1008V	10.00~3900	4.100~0.100	20~65	1000~260

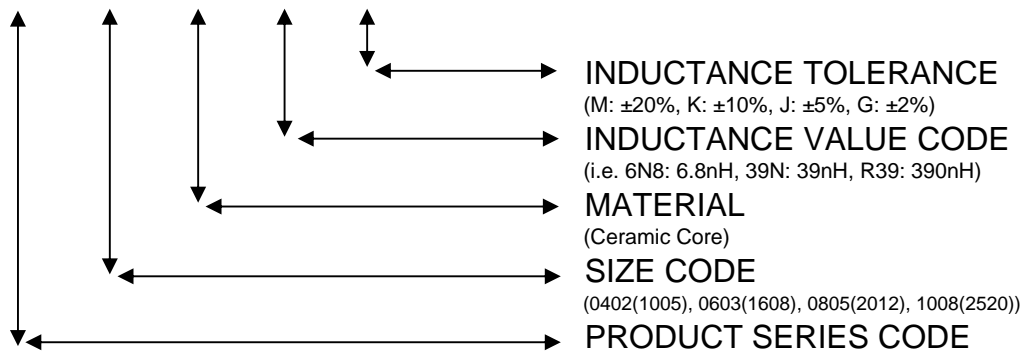
Construction



① Ceramic Core	③ Electrode
② Magnet Wire	④ UV Glue

Part Numbering Systems

WTI- 0603 V - R39 J



(V) WIRE WOUND CHIP INDUCTORS

Tri-Tron

1. WTI Series (Size: 0603 (1608))

WTI-0603V Wire Wound Chip Inductors / Standard Type

Inductance (nH)	Tolerance	L Freq. (MHz)	Quality Factor min.	SRF (GHz) min.	DCR (Ω) max.	IDC (mA) max.	900MHz		1.7GHz	
							L	Q	L	Q
1.6	±5, ±10%	250	24	12.5	0.030	700	1.53	35	1.58	55
1.8	±2, ±5, ±10%	250	16	12.5	0.045	700	1.63	35	1.66	50
2.2	±5, ±10%	250	15	6.00	0.100	700	2.18	41	2.20	64
2.3	±5, ±10%	250	16	>4.00	0.140	700	2.32	32	2.35	40
3.3	±2, ±5, ±10%	250	22	>6.00	0.080	700	3.35	47	3.40	65
3.6	±2, ±5, ±10%	250	22	5.80	0.063	700	3.53	49	3.58	65
3.9	±2, ±5, ±10%	250	22	>6.00	0.080	700	3.95	49	3.96	67
4.3	±2, ±5, ±10%	250	22	5.80	0.063	700	4.32	49	4.43	67
4.5	±2, ±5, ±10%	250	20	5.80	0.120	700	4.74	55	4.87	92
4.7	±2, ±5, ±10%	250	25	5.80	0.120	700	4.65	53	4.80	67
5.1	±2, ±5, ±10%	250	20	5.80	0.160	700	5.13	47	5.36	56
5.6	±2, ±5, ±10%	250	20	5.80	0.170	700	5.53	56	5.86	77
6.2	±2, ±5, ±10%	250	25	5.80	0.110	700	6.28	60	6.40	85
6.3	±2, ±5, ±10%	250	25	5.80	0.110	700	6.67	41	6.86	61
6.8	±2, ±5, ±10%	250	27	5.80	0.110	700	6.75	60	7.10	81
7.5	±2, ±5, ±10%	250	28	4.80	0.106	700	7.70	60	7.82	65
8.2	±2, ±5, ±10%	250	27	4.80	0.110	700	8.25	64	8.40	81
8.7	±2, ±5, ±10%	250	28	4.80	0.109	700	8.86	62	9.32	58
9.1	±2, ±5, ±10%	250	35	4.80	0.130	700	9.20	70	9.70	80
9.5	±2, ±5, ±10%	250	28	5.40	0.135	700	9.70	59	9.92	61
10	±2, ±5, ±10%	250	31	4.80	0.130	700	10.0	66	10.6	83
11	±2, ±5, ±10%	250	31	4.00	0.086	700	11.3	53	12.1	56
12	±2, ±5, ±10%	250	35	4.00	0.130	700	12.3	72	13.5	83
15	±2, ±5, ±10%	250	35	4.00	0.170	700	15.4	64	16.8	89
16	±2, ±5, ±10%	250	35	3.30	0.110	700	16.5	55	18.0	52
17	±2, ±5, ±10%	250	35	3.20	0.170	700	17.6	56	19.4	44
18	±2, ±5, ±10%	250	35	3.10	0.170	700	18.7	70	21.4	69
20	±2, ±5, ±10%	250	40	3.00	0.190	700	20.7	80	23.5	30
22	±2, ±5, ±10%	250	38	3.00	0.190	700	22.8	73	26.1	71
23	±2, ±5, ±10%	250	38	2.85	0.190	700	24.1	71	28.0	71
24	±2, ±5, ±10%	250	38	2.80	0.130	700	25.7	45	30.9	40
27	±2, ±5, ±10%	250	40	2.80	0.220	600	29.2	74	34.6	65
30	±2, ±5, ±10%	250	40	2.80	0.150	600	31.4	47	39.8	28
33	±2, ±5, ±10%	250	40	2.30	0.220	600	36.0	67	49.5	42
36	±2, ±5, ±10%	250	37	2.30	0.250	600	39.1	47	48.9	24
39	±2, ±5, ±10%	250	40	2.20	0.250	600	42.7	60	60.2	40
43	±2, ±5, ±10%	200	38	2.00	0.280	600	46.9	44	60.3	21
47	±2, ±5, ±10%	200	38	2.00	0.280	600	52.2	62	77.2	35
51	±2, ±5, ±10%	200	38	1.90	0.280	600	55.5	69	82.2	34
56	±2, ±5, ±10%	200	38	1.90	0.310	600	62.5	56	97.0	26
62	±2, ±5, ±10%	200	37	1.80	0.340	600	68.0	40	110	10
68	±2, ±5, ±10%	200	37	1.70	0.340	600	80.5	54	168	21
72	±2, ±5, ±10%	150	34	1.70	0.490	600	82.0	53	135	20
82	±2, ±5, ±10%	150	34	1.70	0.540	400	96.2	54	177	21
91	±2, ±5, ±10%	150	30	1.70	0.500	400	110.0	50	416.4	6
100	±2, ±5, ±10%	150	34	1.40	0.580	400	124.0	49	319.5	13
110	±2, ±5, ±10%	150	32	1.35	0.610	300	138.0	43	342.7	15
120	±2, ±5, ±10%	150	32	1.30	0.650	300	166.0	39	529.3	8
130	±2, ±5, ±10%	150	30	1.40	0.720	300	185.0	60	-	-
140	±2, ±5, ±10%	100	28	1.30	0.870	280	190.0	80	-	-
150	±2, ±5, ±10%	100	28	1.30	0.950	280	230.0	25	-	-
160	±2, ±5, ±10%	100	25	1.30	1.400	280	215.0	20	-	-
180	±2, ±5, ±10%	100	25	1.25	1.400	250	305.0	22	-	-
220	±2, ±5, ±10%	100	25	1.20	1.600	250	377.0	21	-	-
250	±2, ±5, ±10%	100	25	1.20	2.000	250	377.0	21	-	-
260	±2, ±5, ±10%	100	25	1.00	2.000	200	469.0	21	-	-
270	±2, ±5, ±10%	100	25	0.90	2.100	200	523.0	19	-	-
280	±2, ±5, ±10%	100	25	1.00	2.400	100	524.0	18	-	-
300	±2, ±5, ±10%	100	25	0.75	2.500	150	539.7	21	-	-
330	±2, ±5, ±10%	100	25	0.90	3.800	100	680.4	20	-	-
390	±2, ±5, ±10%	100	25	0.90	4.350	100	734.5	29	-	-
470	±2, ±5, ±10%	100	23	0.60	3.600	80	-	-	-	-

1. WTI Series (Size: 0603 (1608))

Electrical Performance Test

Item	Requirement	Test Method
Inductance	Refer to standard electrical characteristic spec.	HP4286/E4982A
Q		HP4286/E4982A
SRF		HP4287/E4982A
DC Resistance RDC		Micro-Ohm meter (Gom-801G)/E4982A
Rated Current IDC		Applied the current to coils, the temperature of coil increases $\Delta T15^{\circ}C$ ($Ta=25^{\circ}C$).
Over Load	Inductors shall have no evidence of electrical and mechanical damage	Applied 2 times of rated allowed DC current to inductor for a period of 5 minutes
Withstanding Voltage	Inductors shall be no evidence of electrical and mechanical damage.	AC voltage of 500 VAC applied between inductors terminal and case for 1 min.
Insulation Resistance	1000M ohm min.	100 V _{DC} applied between inductor terminal and case

Mechanical Performance Test

Item	Requirement	Test Method
Vibration	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 1 min. Amplitude: 1.5 mm Time: 2 hrs for each axis (X, Y & Z), total 6 hrs
Resistance to Soldering Heat		Solder Temperature: $260\pm 5^{\circ}C$ Immersion Time: 10 ± 2 seconds
Component Adhesion (Push Test)	1 lbs. For 0402 2 lbs. For 0603 3 lbs. For the rest	The device should be soldered (260 ± 5 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
Drop	No damage	Dropping chip by each side and each corner. Drop 10 times in total Drop height: 100 cm Drop weight: 125 g
Solderability	90% covered with solder	Inductor shall be dipped in a melted solder bath at 245 ± 5 for 3 seconds
Resistance to Solvent	No damage on appearance and marking	MIL-STD-202, Method 215

Climatic Test

Item	Requirement	Item															
Temperature Characteristic	Appearance: No damage L change: within $\pm 10\%$ Q change: within $\pm 20\%$	-40~+125 $^{\circ}C$															
Humidity		Temperature: $40\pm 2^{\circ}C$ Relative Humidity: 90~95% Time: 96 ± 2 hrs Measured after exposure in the room condition for 2 hrs															
Low Temperature Storage		Temperature: $-40\pm 2^{\circ}C$ Time: 96 ± 2 hrs Inductors are tested after 1 hour at room temperature															
Thermal Shock		One cycle: <table border="1"> <thead> <tr> <th>Step</th> <th>Temperature ($^{\circ}C$)</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 ($^{\circ}C$)	Time (min.)	1	-25 ± 3	30	2	25 ± 2	15	3	125 ± 3	30	4	25 ± 2	15
Step		Temperature ($^{\circ}C$)	Time (min.)														
1		-25 ± 3	30														
2		25 ± 2	15														
3	125 ± 3	30															
4	25 ± 2	15															
High Temperature Storage	Temperature: $125\pm 2^{\circ}C$ Time: 96 ± 2 hrs Measured after exposure in the room condition for 1hour																
High Temperature Load Life	Temperature: $85\pm 2^{\circ}C$ Time: 1000 ± 12 hrs Load: Allowed DC current																
Damp Heat with Load	Temperature: $40\pm 2^{\circ}C$ Relative Humidity: 90~95% Time: 1000 ± 12 hrs Load: Allowed DC current																

Storage Temperature: 15~28 $^{\circ}C$; Humidity < 80%RH