

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

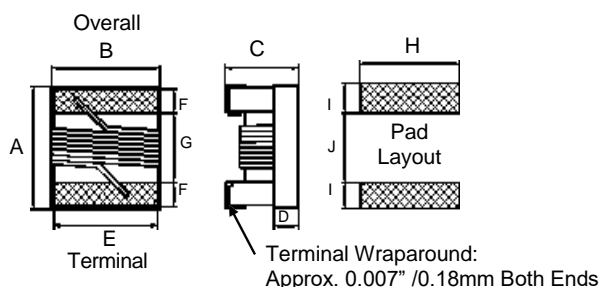
- > Cordless (DECT/CT1CT2) & Cellular (CDMA/GSM/PHS) Phone.
- > Remote control, wireless security system.
- > WLL, Wireless LAN / Mouse / Keyboard / Earphone.
- > GPS receiver.
- > VCO, RF Module & other wireless products.
- > CATV Filter, Tuner.
- > Cable Modem / XDSL Tuner.
- > Set Top Box.

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"

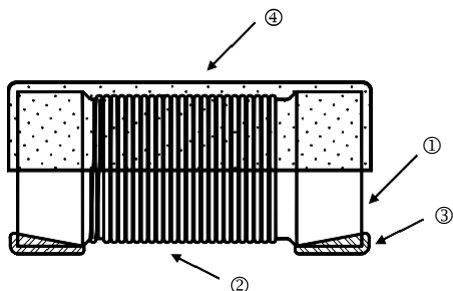
HP4287A, GOM-801G & 502BC - For "DCR"

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

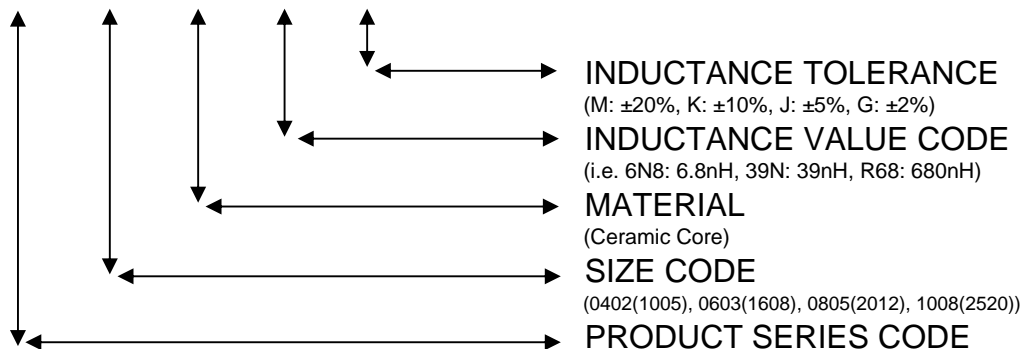
Construction



① Ceramic Core	③ Electrode
② Magnet Wire	④ UV Glue

Part Numbering Systems

WTI- 0805 V - 39N J



1. WTI Series (Size: 0805 (2012))

WTI-0805V Wire Wound Chip Inductors / Standard Type

Inductance (nH)	Tolerance	L Freq. (MHz)	Quality Factor min.	SRF (GHz) min.	DCR (Ω) max.	IDC (mA) max.
2.7	$\pm 5, \pm 10\%$	250	80 @ 1500MHz	7.900	0.06	800
2.8	$\pm 2, \pm 5, \pm 10\%$	250	80 @ 1500MHz	7.900	0.06	800
3.0	$\pm 5, \pm 10\%$	250	65 @ 1500MHz	7.900	0.06	800
3.3	$\pm 5, \pm 10\%$	250	50 @ 1500MHz	6.000	0.08	600
3.9	$\pm 5, \pm 10\%$	250	50 @ 1500MHz	5.500	0.08	600
4.7	$\pm 5, \pm 10\%$	250	65 @ 1000MHz	5.500	0.08	600
5.6	$\pm 5, \pm 10\%$	250	65 @ 1000MHz	5.500	0.08	600
6.2	$\pm 5, \pm 10\%$	250	50 @ 1000MHz	5.500	0.11	600
6.8	$\pm 5, \pm 10\%$	250	50 @ 1000MHz	5.500	0.11	600
7.5	$\pm 5, \pm 10\%$	250	50 @ 1000MHz	4.500	0.14	600
8.2	$\pm 5, \pm 10\%$	250	50 @ 1000MHz	4.700	0.12	600
8.7	$\pm 5, \pm 10\%$	250	50 @ 1000MHz	4.000	0.21	400
10	$\pm 2, \pm 5, \pm 10\%$	250	60 @ 500MHz	4.200	0.10	600
12	$\pm 2, \pm 5, \pm 10\%$	250	50 @ 500MHz	4.000	0.15	600
15	$\pm 2, \pm 5, \pm 10\%$	250	50 @ 500MHz	3.400	0.17	600
18	$\pm 2, \pm 5, \pm 10\%$	250	50 @ 500MHz	3.300	0.20	600
20	$\pm 2, \pm 5, \pm 10\%$	250	55 @ 500MHz	2.600	0.22	500
22	$\pm 2, \pm 5, \pm 10\%$	250	55 @ 500MHz	2.600	0.22	500
24	$\pm 2, \pm 5, \pm 10\%$	250	50 @ 500MHz	2.000	0.22	500
27	$\pm 2, \pm 5, \pm 10\%$	250	55 @ 500MHz	2.500	0.25	500
30	$\pm 2, \pm 5, \pm 10\%$	250	60 @ 500MHz	2.050	0.25	500
33	$\pm 2, \pm 5, \pm 10\%$	250	60 @ 500MHz	2.050	0.27	500
36	$\pm 2, \pm 5, \pm 10\%$	250	55 @ 500MHz	1.700	0.27	500
39	$\pm 2, \pm 5, \pm 10\%$	250	60 @ 500MHz	2.000	0.29	500
43	$\pm 2, \pm 5, \pm 10\%$	200	60 @ 500MHz	1.650	0.34	500
47	$\pm 2, \pm 5, \pm 10\%$	200	60 @ 500MHz	1.650	0.31	500
51	$\pm 2, \pm 5, \pm 10\%$	200	60 @ 500MHz	1.650	0.34	500
56	$\pm 2, \pm 5, \pm 10\%$	200	60 @ 500MHz	1.550	0.34	500
62	$\pm 2, \pm 5, \pm 10\%$	200	60 @ 500MHz	1.500	0.36	500
68	$\pm 2, \pm 5, \pm 10\%$	200	60 @ 500MHz	1.450	0.38	500
72	$\pm 2, \pm 5, \pm 10\%$	150	65 @ 500MHz	1.400	0.40	500
75	$\pm 2, \pm 5, \pm 10\%$	150	65 @ 500MHz	1.350	0.41	500
82	$\pm 2, \pm 5, \pm 10\%$	150	65 @ 500MHz	1.300	0.42	400
91	$\pm 2, \pm 5, \pm 10\%$	150	65 @ 500MHz	1.200	0.48	400
100	$\pm 2, \pm 5, \pm 10\%$	150	65 @ 500MHz	1.200	0.46	400
110	$\pm 2, \pm 5, \pm 10\%$	150	50 @ 250MHz	1.000	0.48	400
120	$\pm 2, \pm 5, \pm 10\%$	150	50 @ 250MHz	1.100	0.51	400
130	$\pm 2, \pm 5, \pm 10\%$	150	50 @ 250MHz	0.980	0.54	400
150	$\pm 2, \pm 5, \pm 10\%$	100	50 @ 250MHz	0.920	0.56	400
160	$\pm 2, \pm 5, \pm 10\%$	100	50 @ 250MHz	0.870	0.60	400
180	$\pm 2, \pm 5, \pm 10\%$	100	50 @ 250MHz	0.870	0.64	400
200	$\pm 2, \pm 5, \pm 10\%$	100	50 @ 250MHz	0.860	0.66	400
220	$\pm 2, \pm 5, \pm 10\%$	100	50 @ 250MHz	0.850	0.70	400
240	$\pm 2, \pm 5, \pm 10\%$	100	44 @ 250MHz	0.690	1.00	350
250	$\pm 2, \pm 5, \pm 10\%$	100	50 @ 250MHz	0.680	1.00	350
270	$\pm 2, \pm 5, \pm 10\%$	100	48 @ 250MHz	0.650	1.00	350
300	$\pm 2, \pm 5, \pm 10\%$	100	48 @ 250MHz	0.620	1.20	330
330	$\pm 2, \pm 5, \pm 10\%$	100	48 @ 250MHz	0.600	1.40	310
360	$\pm 2, \pm 5, \pm 10\%$	100	48 @ 250MHz	0.580	1.45	300
390	$\pm 2, \pm 5, \pm 10\%$	100	48 @ 250MHz	0.560	1.50	290
430	$\pm 2, \pm 5, \pm 10\%$	50	33 @ 100MHz	0.430	1.70	230
470	$\pm 2, \pm 5, \pm 10\%$	50	33 @ 100MHz	0.375	1.70	250
510	$\pm 2, \pm 5, \pm 10\%$	25	23 @ 50MHz	0.365	1.90	240
560	$\pm 2, \pm 5, \pm 10\%$	25	23 @ 50MHz	0.340	1.90	230
600	$\pm 2, \pm 5, \pm 10\%$	25	23 @ 50MHz	0.260	1.60	450
620	$\pm 2, \pm 5, \pm 10\%$	25	23 @ 50MHz	0.220	2.20	210
680	$\pm 2, \pm 5, \pm 10\%$	25	23 @ 50MHz	0.200	2.20	190
750	$\pm 2, \pm 5, \pm 10\%$	25	23 @ 50MHz	0.200	2.30	180
820	$\pm 2, \pm 5, \pm 10\%$	25	23 @ 50MHz	0.200	2.35	180

1. WTI Series (Size: 0805 (2012))

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
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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 1 hour																
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