

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

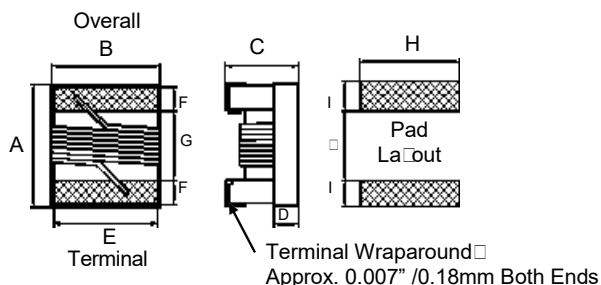
- Cordless DECT/CT1CT2 □ Cellular CDMA/GSM/PHS □ Phone.
- Remote control □ wireless security □ system.
- WLL □ Wireless LAN □ / Mouse / □ Keyboard / Earphone.
- GPS receiver.
- VCO □ RF Module □ other wireless products.
- CATV Filter □ Tuner.
- Cable Modem / XDSL Tuner.
- Set Top Box.

Features

- Wirewound ceramic construction provide high SRF.
- Ultra compact inductors provide exceptional Q values.
- Low Profile □ high Q are available.
- Outstanding endurance □ Immune □ Pull □ Up □ force □ mechanical shock □ and pressure.
- Smaller size □ 0 □ 02 □ 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 □ 0 □ 02V	0 □ 02	1.27	0.76	0.61	0.15	0.51	0.23	0.56	0.66	0.50	0. □ 6	0.8
WTI □ 0603V	0603	1.80	1.12	1.02	0.38	0.76	0.33	0.86	1.02	0.6 □	0.6 □	3. □ 6
WTI □ 0805V	0805	2.29	1.73	1.52	0.51	1.27	0. □ □	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	2.5 □	1.02	1.27	30.73

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

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

HP4287A & 8753E - For "SRF"

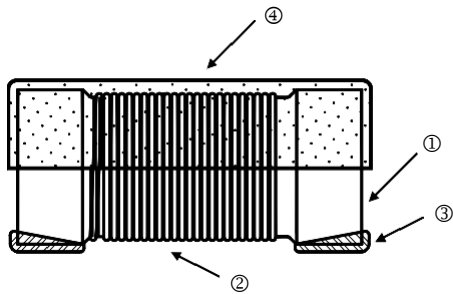
HP4287A, GOM-801G & 502BC - For "DCR"

Operating Temperature : -40 ~+125

Inductance SRF and Rated Current ranges

SERIES	Inductance μ H	SRF Min. GHz	Q Min.	I Rated mA
WTI002V	1.00 \pm 68	12.700 \pm 1.620	15 \pm 25	1360 \pm 100
WTI0603V	1.60 \pm 390	12.500 \pm 0.900	16 \pm 0	700 \pm 100
WTI0805V	2.70 \pm 700	7.900 \pm 0.188	15 \pm 65	600 \pm 90
WTI1008V	10.00 \pm 3900	\pm 100 \pm 0.100	20 \pm 65	1000 \pm 260

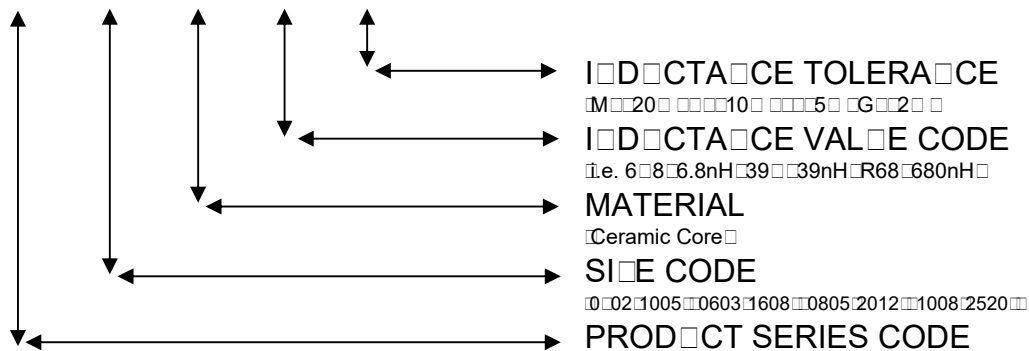
Construction



① Ceramic Core	③ Electrode
② Magnet Wire	④ V Glue

Part Numbering Systems

WTI- 1008V - 39N J



(V) WIRE WOUND CHIP INDUCTORS

1. WTI Series (Size: 1008 (2520))

WTI1008V Wire Wound Chip Inductors / Standard Type

Inductance (nH)	Tolerance	L Freq. (MHz)	Quality Factor min.	SRF (GHz) min.	DCR (Ω) max.	IDC (mA) max.
4.2	$\pm 5, \pm 10\%$	50	50 @ 500MHz	4.000	0.15	1000
4.7	$\pm 5, \pm 10\%$	50	50 @ 500MHz	4.000	0.15	1000
5.6	$\pm 5, \pm 10\%$	50	50 @ 500MHz	4.000	0.15	1000
8.2	$\pm 5, \pm 10\%$	50	50 @ 500MHz	4.100	0.08	1000
10	$\pm 2, \pm 5, \pm 10\%$	50	50 @ 500MHz	4.100	0.08	1000
12	$\pm 2, \pm 5, \pm 10\%$	50	50 @ 500MHz	3.300	0.09	1000
15	$\pm 2, \pm 5, \pm 10\%$	50	50 @ 500MHz	2.500	0.11	1000
18	$\pm 2, \pm 5, \pm 10\%$	50	50 @ 350MHz	2.400	0.12	1000
22	$\pm 2, \pm 5, \pm 10\%$	50	55 @ 350MHz	2.400	0.12	1000
24	$\pm 2, \pm 5, \pm 10\%$	50	55 @ 350MHz	1.900	0.13	1000
27	$\pm 2, \pm 5, \pm 10\%$	50	55 @ 350MHz	1.600	0.13	1000
30	$\pm 2, \pm 5, \pm 10\%$	50	60 @ 350MHz	1.600	0.14	1000
33	$\pm 2, \pm 5, \pm 10\%$	50	60 @ 350MHz	1.600	0.14	1000
36	$\pm 2, \pm 5, \pm 10\%$	50	60 @ 350MHz	1.6000	0.15	1000
39	$\pm 2, \pm 5, \pm 10\%$	50	60 @ 350MHz	1.500	0.15	1000
43	$\pm 2, \pm 5, \pm 10\%$	50	60 @ 350MHz	1.500	0.16	1000
47	$\pm 2, \pm 5, \pm 10\%$	50	65 @ 350MHz	1.500	0.16	1000
56	$\pm 2, \pm 5, \pm 10\%$	50	65 @ 350MHz	1.300	0.18	1000
62	$\pm 2, \pm 5, \pm 10\%$	50	65 @ 350MHz	1.250	0.20	1000
68	$\pm 2, \pm 5, \pm 10\%$	50	65 @ 350MHz	1.300	0.20	1000
75	$\pm 2, \pm 5, \pm 10\%$	50	60 @ 350MHz	1.100	0.21	1000
82	$\pm 2, \pm 5, \pm 10\%$	50	60 @ 350MHz	1.000	0.22	1000
91	$\pm 2, \pm 5, \pm 10\%$	50	50 @ 350MHz	1.000	0.45	1000
100	$\pm 2, \pm 5, \pm 10\%$	25	60 @ 350MHz	1.000	0.56	650
120	$\pm 2, \pm 5, \pm 10\%$	25	60 @ 350MHz	0.950	0.63	650
150	$\pm 2, \pm 5, \pm 10\%$	25	45 @ 100MHz	0.850	0.70	800
180	$\pm 2, \pm 5, \pm 10\%$	25	45 @ 100MHz	0.750	0.77	620
220	$\pm 2, \pm 5, \pm 10\%$	25	45 @ 100MHz	0.700	0.84	500
240	$\pm 2, \pm 5, \pm 10\%$	25	45 @ 100MHz	0.650	0.88	500
270	$\pm 2, \pm 5, \pm 10\%$	25	45 @ 100MHz	0.600	0.91	690
300	$\pm 2, \pm 5, \pm 10\%$	25	45 @ 100MHz	0.585	1.00	450
330	$\pm 2, \pm 5, \pm 10\%$	25	45 @ 100MHz	0.570	1.05	450
360	$\pm 2, \pm 5, \pm 10\%$	25	45 @ 100MHz	0.530	1.10	470
390	$\pm 2, \pm 5, \pm 10\%$	25	45 @ 100MHz	0.500	1.12	630
430	$\pm 2, \pm 5, \pm 10\%$	25	45 @ 100MHz	0.480	1.15	470
470	$\pm 2, \pm 5, \pm 10\%$	25	45 @ 100MHz	0.450	1.19	470
560	$\pm 2, \pm 5, \pm 10\%$	25	45 @ 100MHz	0.415	1.33	580
620	$\pm 2, \pm 5, \pm 10\%$	25	45 @ 100MHz	0.375	1.40	300
680	$\pm 2, \pm 5, \pm 10\%$	25	45 @ 100MHz	0.375	1.47	540
750	$\pm 2, \pm 5, \pm 10\%$	25	45 @ 100MHz	0.360	1.54	360
820	$\pm 2, \pm 5, \pm 10\%$	25	45 @ 100MHz	0.350	1.61	400
910	$\pm 2, \pm 5, \pm 10\%$	25	35 @ 50MHz	0.320	1.68	380
1000	$\pm 2, \pm 5, \pm 10\%$	25	35 @ 50MHz	0.290	1.75	370
1200	$\pm 2, \pm 5, \pm 10\%$	7.9	35 @ 50MHz	0.250	2.00	310
1800	$\pm 2, \pm 5, \pm 10\%$	7.9	28 @ 50MHz	0.160	2.60	300
2200	$\pm 2, \pm 5, \pm 10\%$	7.9	28 @ 50MHz	0.160	2.80	280
2700	$\pm 2, \pm 5, \pm 10\%$	7.9	22 @ 25MHz	0.140	3.20	290
3300	$\pm 2, \pm 5, \pm 10\%$	7.9	22 @ 25MHz	0.110	3.40	290
3900	$\pm 2, \pm 5, \pm 10\%$	7.9	18 @ 25MHz	0.100	3.60	260
4700	$\pm 2, \pm 5, \pm 10\%$	7.9	18 @ 25MHz	0.090	4.00	260
5600	$\pm 2, \pm 5, \pm 10\%$	7.9	16 @ 7.96MHz	0.020	4.00	260
6800	$\pm 2, \pm 5, \pm 10\%$	7.9	15 @ 7.96MHz	0.040	4.90	200
8200	$\pm 2, \pm 5, \pm 10\%$	7.9	15 @ 7.96MHz	0.025	6.00	170
10000	$\pm 2, \pm 5, \pm 10\%$	2.52	15 @ 7.96MHz	0.020	9.00	150
12000	$\pm 2, \pm 5, \pm 10\%$	2.52	15 @ 7.96MHz	0.018	10.50	130
15000	$\pm 2, \pm 5, \pm 10\%$	2.52	15 @ 7.96MHz	0.015	11.50	120

1. WTI Series (Size: 1008 (2520))

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 $\Delta T15^{\circ}\text{C}$ ($T_a=25^{\circ}\text{C}$).
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: $260\pm 5^{\circ}\text{C}$ 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 $^{\circ}\text{C}$															
Humidity		Temperature: $40\pm 2^{\circ}\text{C}$ Relative Humidity: 90~95% Time: 96 ± 2 hrs Measured after exposure in the room condition for 2 hrs															
Low Temperature Storage		Temperature: $-40\pm 2^{\circ}\text{C}$ 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 ($^{\circ}\text{C}$)</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 ($^{\circ}\text{C}$)	Time (min.)	1	-25 ± 3	30	2	25 ± 2	15	3	125 ± 3	30	4	25 ± 2	15
Step		Temperature ($^{\circ}\text{C}$)	Time (min.)														
1		-25 ± 3	30														
2		25 ± 2	15														
3	125 ± 3	30															
4	25 ± 2	15															
High Temperature Storage	Temperature: $125\pm 2^{\circ}\text{C}$ Time: 96 ± 2 hrs Measured after exposure in the room condition for 1 hour																
High Temperature Load Life	Temperature: $85\pm 2^{\circ}\text{C}$ Time: 1000 ± 12 hrs Load: Allowed DC current																
Damp Heat with Load	Temperature: $40\pm 2^{\circ}\text{C}$ Relative Humidity: 90~95% Time: 1000 ± 12 hrs Load: Allowed DC current																

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