

## NL WOUND CHIP INDUCTORS (Ferrite)

### INTRODUCTION

These revolutionary, highly reliable wound chip inductors for automatic mounting, have been developed in response to the trend toward high density in electronic equipment. With metal terminals and a body of heat resistant resin, these inductors offer many superior features.



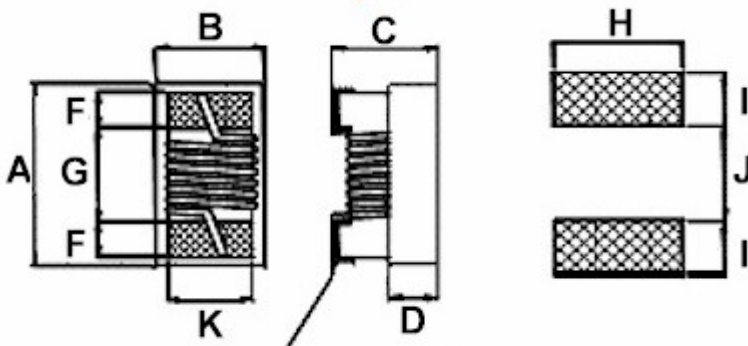
- Very strong solderability by flow soldering, soldering iron or wave soldering.
- Highly accurate dimensions, can be mounted automatically.
- Terminals are highly resistant to pull forces.
- Highly resistant to mechanical shocks and pressure.
- Highly reliable in environments of sudden temperature change and humidity. Super Q characteristics.

### APPLICATIONS

Micro televisions, liquid crystal televisions, video cameras, portable VCRs, car radios, car stereos, thin tape radios, television tuners, mobile telephones, radio and other electronic devices

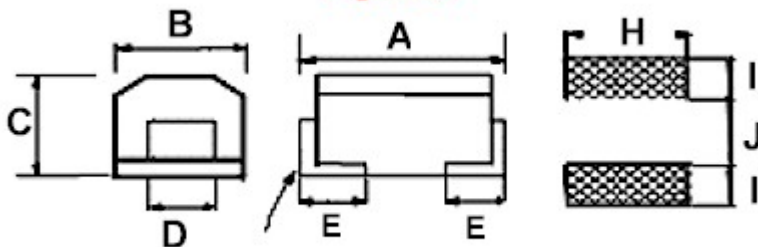
### DIMENSIONS

Figure 1



Terminal Wraparound

Figure 2



Terminal Wraparound



### DIMENSIONS (cont)

	Size	Figure	A Max.	B Max.	C Max.	D Ref.
NL05	0805	1	2.29	1.71	1.45	0.51
NL08	1008	1	2.92	2.79	2.10	1.20
NL10	1210	2	3.50	2.80	2.50	1.40
NL12	1812	2	4.80	3.50	3.50	1.80
NL20	2220	2	5.90	5.20	5.20	2.10
NL08(C)	1008	1	2.92	2.79	2.10	1.20
NL12(C)	1812	2	4.80	3.50	3.50	1.40
NL20(C)	2220	2	5.90	5.20	5.20	1.80

	E	F	G	K Max.	H Max.	I Max.	J Max.
NL05	/	0.44	1.02	1.27	1.78	1.02	0.76
NL08	/	0.45	1.52	2.03	2.54	1.02	1.27
NL10	0.6	/	/	/	2.00	1.20	1.60
NL12	0.9	/	/	/	2.80	1.50	3.00
NL20	1.3	/	/	/	4.50	2.00	4.00
NL08(C)	/	0.51	1.52	2.03	2.54	1.02	1.27
NL12(C)	0.9	/	/	/	2.80	1.50	3.00
NL20(C)	1.3	/	/	/	4.50	2.00	4.00

### WOUND CHIP INDUCTORS (Ferrite) NL05

Part Number	Inductance [nH]	Tolerance [%]	Q Factor [min]	Test Freq. [MHz]	Self Resonant Frequency [GHz]	DC Resistance [ohms max]	Rated Current [mA max]
NL05□TR12	0.12	J, K	20	25.2	700	0.18	1100
NL05□TR15	0.15				900	0.18	1100
NL05□TR18	0.18				600	0.20	800
NL05□TR22	0.22				550	0.25	700
NL05□TR27	0.27				550	0.30	700
NL05□TR33	0.33				550	0.35	650
NL05□TR39	0.39				420	0.35	600
NL05□TR47	0.47				350	0.45	600
NL05□TR56	0.56				300	0.45	550
NL05□TR68	0.68				300	0.60	500
NL05□TR82	0.82				300	0.55	500
NL05□T1R0	1.00				15	7.96	280
NL05□T1R2	1.20		280	0.90			400
NL05□T1R5	1.50		250	1.05			350
NL05□T1R8	1.80		120	0.90			350
NL05□T2R2	2.20		110	1.10			320
NL05□T2R7	2.70		70	1.20			320
NL05□T3R3	3.30		60	1.50			300
NL05□T3R9	3.90		55	1.60			300
NL05□T4R7	4.70		45	2.10			200
NL05□T5R6	5.60		40	2.30			250
NL05□T6R8	6.80		36	2.70			200
NL05□T8R2	8.20		33	3.30			180
NL05□T100	10		10	2.52	30	4.00	180



**WOUND CHIP INDUCTORS (Ferrite) NL08**

Part Number	Inductance [nH]	Tolerance [%]	Q Factor [min]	Test Freq. [MHz]	Self Resonant Frequency [GHz]	DC Resistance [ohms max]	Rated Current [mA max]	
NL08□TR12	0.12	J, K	30	25.2	800	0.10	1200	
NL08□TR15	0.15				800	0.15	1200	
NL08□TR18	0.18				600	0.20	1200	
NL08□TR22	0.22				600	0.25	1200	
NL08□TR27	0.27				425	0.30	1200	
NL08□TR33	0.33				400	0.20	1100	
NL08□TR39	0.39				375	0.40	1000	
NL08□TR47	0.47				350	0.45	900	
NL08□TR56	0.56				325	0.30	850	
NL08□TR68	0.68				300	0.40	800	
NL08□TR82	0.82		260	0.45	800			
NL08□T1R0	1.0		25	7.96	7.96	245	0.50	800
NL08□T1R2	1.2					230	0.55	800
NL08□T1R5	1.5					182	0.65	750
NL08□T1R8	1.8					135	0.80	750
NL08□T2R2	2.2					105	0.95	750
NL08□T2R7	2.7					70	1.05	750
NL08□T3R3	3.3					55	1.15	730
NL08□T3R9	3.9					48	1.25	700
NL08□T4R7	4.7					43	1.28	650
NL08□T5R6	5.6					42	1.35	640
NL08□T6R8	6.8		39	1.60	630			
NL08□T8R2	8.2		36	1.80	600			
NL08□T100	10		20	2.52	2.52	33	2.30	600
NL08□T120	12					28	2.40	550
NL08□T150	15					24	2.70	450
NL08□T180	18					20	2.80	400
NL08□T220	22					18	3.30	400
NL08□T270	27					17	3.50	360
NL08□T330	33					16	4.00	350
NL08□T390	39	15				5.50	330	
NL08□T470	47	14				5.90	300	
NL08□T560	56	13				6.80	270	
NL08□T680	68	12	9.50	250				
NL08□T820	82	10	11.0	200				
NL08□T101	100	12	1	8	11.0	120		

**WOUND CHIP INDUCTORS (Ferrite) NL10**

Part Number	Inductance [nH]	Tolerance [%]	Q Factor [min]	Test Freq. [MHz]	Self Resonant Frequency [GHz]	DC Resistance [ohms max]	Rated Current [mA max]
NL10□T10N	0.010	K, M	15	100	2500	0.13	450
NL10□T12N	0.012		17		2300	0.14	
NL10□T15N	0.015		19		2100	0.16	
NL10□T18N	0.018		21		1900	0.18	
NL10□T22N	0.022		23		1700	0.20	
NL10□T27N	0.027		23		1500	0.22	
NL10□T33N	0.033		25		1400	0.24	
NL10□T39N	0.039		25		1300	0.27	
NL10□T47N	0.047		26		1200	0.30	
NL10□T56N	0.056		26		1100	0.33	
NL10□T68N	0.068		27		1000	0.36	
NL10□T82N	0.082		27		900	0.40	



**WOUND CHIP INDUCTORS (Ferrite) NL10**

Part Number	Inductance [nH]	Tolerance [%]	Q Factor [min]	Test Freq. [MHz]	Self Resonant Frequency [GHz]	DC Resistance [ohms max]	Rated Current [mA max]			
NL10□TR10	0.10	K	30	25.2	700	0.44	450			
NL10□TR12	0.12				500	0.22				
NL10□TR15	0.15				450	0.25				
NL10□TR18	0.18				400	0.28				
NL10□TR22	0.22				350	0.32				
NL10□TR27	0.27				320	0.36				
NL10□TR33	0.33				300	0.40				
NL10□TR39	0.39				250	0.45				
NL10□TR47	0.47				220	0.50				
NL10□TR56	0.56				180	0.55				
NL10□TR68	0.68				160	0.60				
NL10□TR82	0.82				140	0.65				
NL10□T1R0	1.0				7.96	95		0.70	400	
NL10□T1R2	1.2			80			0.75	390		
NL10□T1R5	1.5			70			0.85	370		
NL10□T1R8	1.8			60			0.90	350		
NL10□T2R2	2.2			50			1.00	320		
NL10□T2R7	2.7			45			1.10	290		
NL10□T3R3	3.3			40			1.20	260		
NL10□T3R9	3.9			37			1.30	250		
NL10□T4R7	4.7			32			1.50	220		
NL10□T5R6	5.6			30			1.60	200		
NL10□T6R8	6.8			27			1.80	180		
NL10□T8R2	8.2			25			2.00	170		
NL10□T100	10			2.52			20	2.10	150	
NL10□T120	12							18	2.50	140
NL10□T150	15							17	2.80	130
NL10□T180	18		15					3.30	120	
NL10□T220	22		14		3.70	110				
NL10□T270	27		13		5.00	80				
NL10□T330	33		12		5.60	70				
NL10□T390	39		12		6.40	65				
NL10□T470	47		10		7.00	60				
NL10□T560	56	9	8.00		55					
NL10□T680	68	9	9.00		50					
NL10□T820	82	8	10.00	45						
NL10□T101	100	20	0.796	7	11.00	40				
NL10□T121	120			7	12.00	70				
NL10□T151	150			6	15.00	65				
NL10□T181	180			6	17.00	60				
NL10□T221	220			5	21.00	50				



**WOUND CHIP INDUCTORS (Ferrite) NL12**

Part Number	Inductance [nH]	Tolerance [%]	Q Factor [min]	Test Freq. [MHz]	Self Resonant Frequency [GHz]	DC Resistance [ohms max]	Rated Current [mA max]	
NL12□TR10	0.10	K	28	25.2	700	0.44	450	
NL12□TR12	0.12		30		25.2	500		0.22
NL12□TR15	0.15					450		0.25
NL12□TR18	0.18					400		0.28
NL12□TR22	0.22					350		0.32
NL12□TR27	0.27					320		0.36
NL12□TR33	0.33					300		0.40
NL12□TR39	0.39					350		0.45
NL12□TR47	0.47					220		0.50
NL12□TR56	0.56					180		0.55
NL12□TR68	0.68					160		0.60
NL12□TR82	0.82					140		0.67
NL12□T1R0	1.0			50		7.96	100	0.50
NL12□T1R2	1.2		80		0.55		410	
NL12□T1R5	1.5		70		0.60		390	
NL12□T1R8	1.8		60		0.65		380	
NL12□T2R2	2.2		55		0.70		370	
NL12□T2R7	2.7		50		0.75		355	
NL12□T3R3	3.3		45		0.80		330	
NL12□T3R9	3.9		40		0.90		315	
NL12□T4R7	4.7		35		1.00		300	
NL12□T5R6	5.6		33		1.10		285	
NL12□T6R8	6.8		27		1.20		270	
NL12□T8R2	8.2		25		1.40		250	
NL12□T100	10		2.52	2.52	20	1.60	225	
NL12□T120	12				18	2.00	200	
NL12□T150	15				17	2.50	190	
NL12□T180	18				15	2.80	180	
NL12□T220	22				13	3.20	170	
NL12□T270	27				12	3.60	160	
NL12□T330	33				11	4.00	150	
NL12□T390	39				10	4.50	140	
NL12□T470	47				10	5.00	135	
NL12□T560	56				9	5.50	130	
NL12□T680	68				9	6.00	120	
NL12□T820	82				8	7.00	110	
NL12□T101	100		0.796	0.796	7	8.00	110	
NL12□T121	120				6	8.00	105	
NL12□T151	150				5	9.00	102	
NL12□T181	180				5	9.50	100	
NL12□T221	220				4	12.0	92	
NL12□T271	270				3	12.0	85	
NL12□T331	330	3			14.0	80		
NL12□T391	390	3			16.0	62		
NL12□T471	470	3			26.0	50		
NL12□T561	560	2			30.0	50		
NL12□T681	680	2			40.0	30		
NL12□T821	820	2			35.0	30		
NL12□T102	1000	0.252	0.252	2	46.0	30		



**WOUND CHIP INDUCTORS (Ferrite) NL20**

Part Number	Inductance [nH]	Tolerance [%]	Q Factor [min]	Test Freq. [MHz]	Self Resonant Frequency [GHz]	DC Resistance [ohms max]	Rated Current [mA max]
NL20□T-122	1.2	J, K	30	0.252	1.5	17	75
NL20□T-152	1.5				1.4	20	70
NL20□T-182	1.8				1.3	30	60
NL20□T-222	2.2				1.2	35	55
NL20□T-272	2.7				1.1	55	45
NL20□T-332	3.3				1	60	40
NL20□T-392	3.9				1	70	38
NL20□T-472	4.7				0.9	78	36
NL20□T-562	5.6				0.8	85	33
NL20□T-682	6.8				0.7	110	30
NL20□T-822	8.2				0.6	125	28
NL20□T-103	10	20	0.0796	0.5	150	25	

**WOUND CHIP INDUCTORS (Ferrite) NL08 LARGE CURRENT**

Part Number	Inductance [nH]	Tolerance [%]	Q Factor [min]	Test Freq. [MHz]	Self Resonant Frequency [GHz]	DC Resistance [ohms max]	Rated Current [mA max]
NL08□TC1R0	1.0	J, K	22	7.96	350	0.35	1500
NL08□TC1R2	1.2		25		300	0.40	1200
NL08□TC1R5	1.5		25		300	0.45	1200
NL08□TC1R8	1.8		25		300	0.55	1100
NL08□TC2R2	2.2		22		250	0.60	1050
NL08□TC2R7	2.7		25		70	0.70	1000
NL08□TC3R3	3.3		22		55	0.75	900
NL08□TC3R9	3.9		25		50	0.80	900
NL08□TC4R7	4.7		22		45	0.90	800
NL08□TC5R6	5.6		22		42	1.05	750
NL08□TC6R8	6.8		22		40	1.00	750
NL08□TC8R2	8.2		22		36	1.30	700
NL08□TC100	10		20		35	1.50	700
NL08□TC100	12		20		30	1.70	550
NL08□TC150	15		20	24	1.90	500	
NL08□TC180	18		20	20	2.60	470	
NL08□TC220	22		20	18	2.80	470	
NL08□TC220	27	20	17	3.40	400		
NL08□TC330	33	20	16	3.50	400		



**WOUND CHIP INDUCTORS (Ferrite) NL12 LARGE CURRENT**

Part Number	Inductance [nH]	Tolerance [%]	Q Factor [min]	Test Freq. [MHz]	Self Resonant Frequency [GHz]	DC Resistance [ohms max]	Rated Current [mA max]
NL12□TC1R0	1.0	K	10	7.96	200	0.11	1050
NL12□TC1R2	1.2				160	0.12	100
NL12□TC1R5	1.5				130	0.15	950
NL12□TC1R8	1.8				100	0.16	900
NL12□TC2R2	2.2				80	0.18	850
NL12□TC2R7	2.7				60	0.20	800
NL12□TC3R3	3.3				45	0.22	750
NL12□TC3R9	3.9				40	0.24	700
NL12□TC4R7	4.7				35	0.27	650
NL12□TC5R6	5.6				30	0.30	650
NL12□TC6R8	6.8				28	0.35	600
NL12□TC8R2	8.2				25	0.40	600
NL12□TC100	10				22	0.50	550
NL12□TC120	12				21	0.60	500
NL12□TC150	15				20	0.70	450
NL12□TC180	18				19	0.80	400
NL12□TC220	22				18	0.90	370
NL12□TC270	27				16	1.20	330
NL12□TC330	33		14	1.40	300		
NL12□TC390	39		12	1.60	280		
NL12□TC470	47		11.5	1.90	260		
NL12□TC560	56		11	2.20	240		
NL12□TC680	68		10	2.60	220		
NL12□TC820	82		9	3.50	200		
NL12□TC101	100		8	4.00	180		
NL12□TC121	120		7.5	4.50	160		
NL12□TC151	150		7	6.50	140		
NL12□TC181	180		6.5	7.50	120		
NL12□TC221	220		5.5	9.00	120		
NL12□TC271	270		5	11.0	100		
NL12□TC331	330		4	13.0	90		
NL12□TC391	390		3.8	23.0	80		
NL12□TC471	470		3.5	26	75		
NL12□TC451	560		2.8	30	70		
NL12□TC681	680	2.6	40	65			
NL12□TC821	820	2.5	45	60			
NL12□TC102	1000	2.3	50	55			
			20	0.796			



**WOUND CHIP INDUCTORS (Ferrite) NL20 LARGE CURRENT**

Part Number	Inductance [nH]	Tolerance [%]	Q Factor [min]	Test Freq. [MHz]	Self Resonant Frequency [GHz]	DC Resistance [ohms max]	Rated Current [mA max]
NL20□TC1R0	1.0	J, K	10	7.96	95	0.03	1800
NL20□TC1R2	1.2				70	0.035	1700
NL20□TC1R5	1.5				55	0.04	1600
NL20□TC1R8	1.8				47	0.05	1400
NL20□TC2R2	2.2				42	0.06	1300
NL20□TC2R7	2.7				37	0.07	1200
NL20□TC3R3	3.3				34	0.08	1120
NL20□TC3R9	3.9				32	0.09	1050
NL20□TC4R7	4.7				29	0.11	950
NL20□TC5R6	5.6				26	0.13	880
NL20□TC6R8	6.8				24	0.15	810
NL20□TC8R2	8.2				22	0.18	750
NL20□TC100	10				19	0.21	690
NL20□TC120	12				17	0.25	630
NL20□TC150	15				16	0.30	580
NL20□TC180	18				14	0.36	530
NL20□TC220	22				13	0.43	480
NL20□TC270	27				11.5	0.52	440
NL20□TC330	33		10.5	0.62	400		
NL20□TC390	39		9.5	0.72	370		
NL20□TC470	47		8.5	0.85	340		
NL20□TC560	56		7.8	1.00	310		
NL20□TC680	68		7	1.2	290		
NL20□TC820	82		6.4	1.4	270		
NL20□TC101	100		6	1.6	250		
NL20□TC121	120		5.4	1.9	230		
NL20□TC151	150		4.8	2.2	210		
NL20□TC181	180		4.4	2.8	190		
NL20□TC221	220		3.9	3.4	170		
NL20□TC271	270		3.6	4.2	155		
NL20□TC331	330		3.2	4.9	140		
NL20□TC391	390		2.9	5.8	130		
NL20□TC471	470		2.6	7	120		
NL20□TC451	560	2.4	8.5	110			
NL20□TC681	680	2.2	10	100			
NL20□TC821	820	2	13	90			
NL20□TC102	1000	1.8	15	85			
		20	0.796	0.796	6	1.6	250
NL20□TC121	120				5.4	1.9	230
NL20□TC151	150				4.8	2.2	210
NL20□TC181	180				4.4	2.8	190
NL20□TC221	220				3.9	3.4	170
NL20□TC271	270				3.6	4.2	155
NL20□TC331	330				3.2	4.9	140
NL20□TC391	390				2.9	5.8	130
NL20□TC471	470				2.6	7	120
NL20□TC451	560				2.4	8.5	110
NL20□TC681	680				2.2	10	100
NL20□TC821	820				2	13	90
NL20□TC102	1000	1.8	15	85			

**ORDERING PROCEDURE EXAMPLE**

