

INDUCTORS

Leadless

NL SERIES



These revolutionary, high reliability leadless (wound chip) inductors have been developed in response to the trend toward higher density mounting of parts in electronic circuits. Since metal terminals are used as the electrodes and the body is molded of heat resistant resin, these inductors offer many superior features.

The NLC series is designed to eliminate EMI in power lines and have rated current in the range from 60 to 1800mA. NLC series has only half as much DC resistance and twice as much DC current.

Features

- Leaching resistant terminations due to metal tab electrodes.
- Coils encapsulated in heat-proof resin make highly accurate dimensions and resistance to mechanical shock or pressure.
- High resistance to heat and humidity.
- Matched parts on tape and reel.

Product Identification

Non-magnetic shield type

NL 45 32 32 T - □□□ □
 (1) (2) (3) (4) (5) (6) (7)

Magnetic shield type

NLF 45 32 32 T - □□□ □
 (1) (2) (3) (4) (5) (6) (7)

Non-magnetic shield type for large current circuits

NLC 45 32 32 T - □□□ □
 (1) (2) (3) (4) (5) (6) (7)

(1) Product symbol

(2) Length

(3) Width

(4) Height

(5) Tape and reel

(6) Inductance

(7) Inductance tolerance

Contact factory for special tolerances.

Marking

Inductance (and Tolerance)

Packaging

Tape and Reel:

NL1008, NL1210, NLC1210—2,000 pieces per reel

NL1812, NLF1812, NLC1812—500 pieces per reel

NL2220, NLC2220—400 pieces per reel

Applications

- Telecommunications
- Measuring and medical equipment
- Computer and peripherals

Inductance Range

Type	Inductance (μH)	Rated current (mA) max.
NL1008	0.01 to 100	
NL1210	0.01 to 470	
NL1812	270 to 1000	
NL2220	1200 to 10000	
NLF1812	1.00 to 1000	
NLC1008	1.0 to 33	475 to 120
NLC1210	1.0 to 330	850 to 60
NLC1812	1.0 to 330	1050 to 90
NLC2220	1.0 to 1000	1800 to 85

Standard Specifications

Characteristics	Type	NL1008T NL1210T NL1812T	NL1812T NL2220T NLF1812T	NLF1812T
	Storage Temperature		-40 to +100°C [-40 to +212°F]	-40 to +100°C [-40 to +212°F]
Operating Temperature		-20 to +100°C [-4 to +212°F]	-20 to +100°C [-4 to +212°F]	-20 to +80°C [-4 to +176°F] Including temperature rise in stable conditions.
Temperature Rise		20°C [36°F] max.	20°C [36°F] max.	20°C [36°F] max.
Ambient Temperature		80°C [176°F] max.	80°C [176°F] max.	80°C [176°F] max.
Terminal Strength		0.5kg min.	1kg min.	1kg min.
Resistance to Soldering Heat		260°C [500°F], 10 seconds		
Resistance to Solvent		Conform to MIL-STD-202E		
Current Rating		Value obtained when current flows and the temperature has risen to 20°C [36°F] or when DC current flows and the initial value of inductance has fallen by 10%, whichever is smaller.		

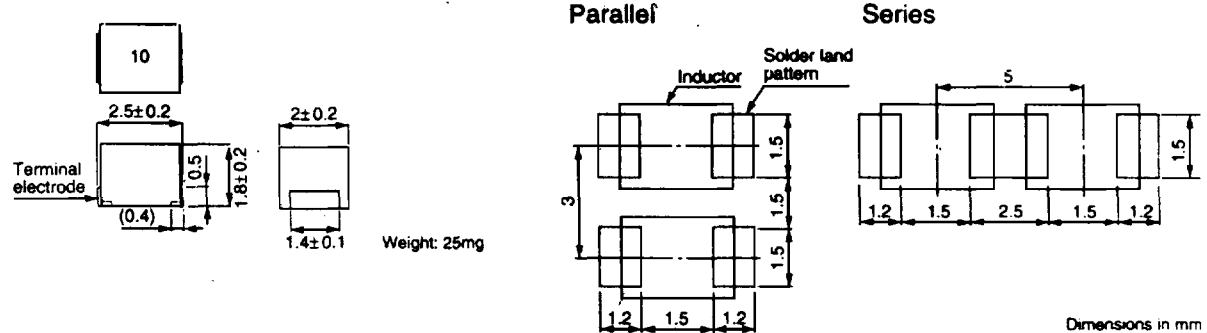
INDUCTORS

Leadless

NL SERIES

NL1008 TYPE

Shapes and Dimensions/Recommended PC Board Patterns



Electrical Characteristics

Distributor Part Number	TDK Manufacturing Part Number	Inductance (μH)	Q Min.	L,Q Test Freq. (MHz)	SRF (MHz) Min.	DC Resistance (Ω) Max.	Rated DC Current (mA) Max.
NL1008-010J	NL252018T-010J	0.010±5%	15	100	2150	0.26	530
NL1008-012J	NL252018T-012J	0.012±5%	15	100	2050	0.27	500
NL1008-015J	NL252018T-015J	0.015±5%	15	100	1850	0.29	480
NL1008-018J	NL252018T-018J	0.018±5%	15	100	1650	0.31	450
NL1008-022J	NL252018T-022J	0.022±5%	15	100	1550	0.37	420
NL1008-027J	NL252018T-027J	0.027±5%	15	100	1400	0.40	410
NL1008-033J	NL252018T-033J	0.033±5%	20	100	1250	0.42	400
NL1008-039J	NL252018T-039J	0.039±5%	20	100	1100	0.45	380
NL1008-047J	NL252018T-047J	0.047±5%	20	100	1050	0.50	360
NL1008-056J	NL252018T-056J	0.056±5%	20	100	950	0.60	340
NL1008-068J	NL252018T-068J	0.068±5%	20	100	900	0.65	320
NL1008-082J	NL252018T-082J	0.082±5%	20	100	850	0.75	300
NL1008-R10J	NL252018T-R10J	0.10±5%	20	100	750	0.80	280
NL1008-R12J	NL252018T-R12J	0.12±5%	30	25.2	700	0.30	550
NL1008-R15J	NL252018T-R15J	0.15±5%	30	25.2	550	0.35	500
NL1008-R18J	NL252018T-R18J	0.18±5%	30	25.2	500	0.40	460
NL1008-R22J	NL252018T-R22J	0.22±5%	30	25.2	450	0.50	430
NL1008-R27J	NL252018T-R27J	0.27±5%	30	25.2	425	0.55	420
NL1008-R33J	NL252018T-R33J	0.33±5%	30	25.2	400	0.60	400

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Leadless

NL SERIES

NL1008 TYPE (Continued)

Electrical Characteristics

Case Part Number	TDK Manufacturing Part Number	Inductance (μ H)	Q Min.	L,Q Test Freq. (MHz)	SRF (MHz) Min.	DC Resistance (Ω) Max.	Rated DC Current (mA) Max.
NL1008-R39J	NL252018T-R39J	0.39 \pm 5%	30	25.2	375	0.65	375
NL1008-R47J	NL252018T-R47J	0.47 \pm 5%	30	25.2	350	0.68	350
NL1008-R56J	NL252018T-R56J	0.56 \pm 5%	30	25.2	325	0.75	325
NL1008-R68J	NL252018T-R68J	0.68 \pm 5%	30	25.2	300	0.85	300
NL1008-R82J	NL252018T-R82J	0.82 \pm 5%	30	25.2	260	1.00	260
NL1008-1R0J	NL252018T-1R0J	1.0 \pm 5%	30	7.96	245	1.10	245
NL1008-1R2J	NL252018T-1R2J	1.2 \pm 5%	30	7.96	230	1.20	230
NL1008-1R5J	NL252018T-1R5J	1.5 \pm 5%	30	7.96	182	1.30	220
NL1008-1R8J	NL252018T-1R8J	1.8 \pm 5%	30	7.96	135	1.45	210
NL1008-2R2J	NL252018T-2R2J	2.2 \pm 5%	30	7.96	105	1.55	200
NL1008-2R7J	NL252018T-2R7J	2.7 \pm 5%	30	7.96	70	1.70	195
NL1008-3R3J	NL252018T-3R3J	3.3 \pm 5%	30	7.96	55	1.90	185
NL1008-3R9J	NL252018T-3R9J	3.9 \pm 5%	30	7.96	48	2.10	180
NL1008-4R7J	NL252018T-4R7J	4.7 \pm 5%	30	7.96	43	2.30	175
NL1008-5R6J	NL252018T-5R6J	5.6 \pm 5%	25	7.96	42	2.50	170
NL1008-6R8J	NL252018T-6R8J	6.8 \pm 5%	25	7.96	39	2.70	165
NL1008-8R2J	NL252018T-8R2J	8.2 \pm 5%	25	7.96	36	3.05	160
NL1008-100J	NL252018T-100J	10 \pm 5%	25	2.52	33	3.50	155
NL1008-120J	NL252018T-120J	12 \pm 5%	25	2.52	30	3.80	150
NL1008-150J	NL252018T-150J	15 \pm 5%	25	2.52	26	4.40	140
NL1008-180J	NL252018T-180J	18 \pm 5%	25	2.52	24	4.80	130
NL1008-220J	NL252018T-220J	22 \pm 5%	25	2.52	22	5.50	125
NL1008-270J	NL252018T-270J	27 \pm 5%	25	2.52	21	6.30	115
NL1008-330J	NL252018T-330J	33 \pm 5%	25	2.52	20	7.10	110
NL1008-390J	NL252018T-390J	39 \pm 5%	20	2.52	18	9.50	90
NL1008-470J	NL252018T-470J	47 \pm 5%	20	2.52	17	11.10	80
NL1008-560J	NL252018T-560J	56 \pm 5%	20	2.52	16	12.10	75
NL1008-680J	NL252018T-680J	68 \pm 5%	20	2.52	15	16.60	70
NL1008-820J	NL252018T-820J	82 \pm 5%	20	2.52	13	19.00	66
NL1008-101J	NL252018T-101J	100 \pm 5%	15	0.796	12	21.00	60

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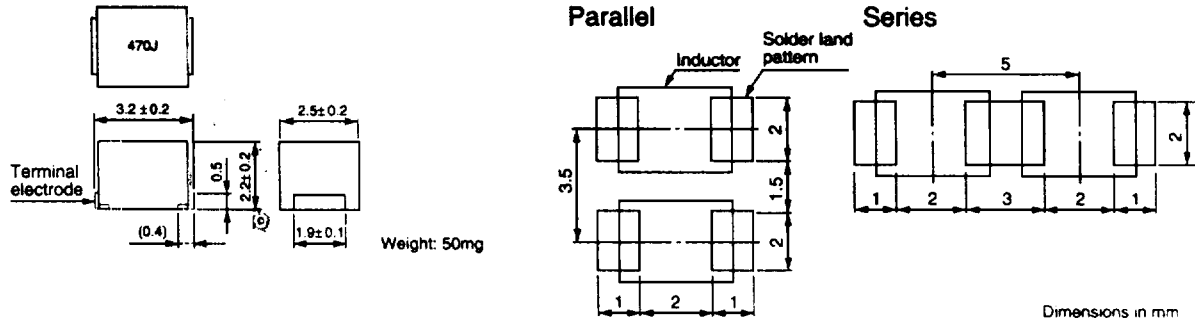
INDUCTORS

Leadless

NL SERIES

NL1210 TYPE

Shapes and Dimensions/Recommended PC Board Patterns



Electrical Characteristics

Distributor Part Number	TDK Manufacturing Part Number	Inductance (μ H)	Q Min.	L,Q Test Freq. (MHz)	SRF (MHz) Min.	DC Resistance (Ω) Max.	Rated DC Current (mA) Max.
NL1210-010J	NL322522T-010J	0.010 \pm 5%	15	100	2500	0.13	450
NL1210-012J	NL322522T-012J	0.012 \pm 5%	17	100	2300	0.14	450
NL1210-015J	NL322522T-015J	0.015 \pm 5%	19	100	2100	0.16	450
NL1210-018J	NL322522T-018J	0.018 \pm 5%	21	100	1900	0.18	450
NL1210-022J	NL322522T-022J	0.022 \pm 5%	23	100	1700	0.20	450
NL1210-027J	NL322522T-027J	0.027 \pm 5%	23	100	1500	0.22	450
NL1210-033J	NL322522T-033J	0.033 \pm 5%	25	100	1400	0.24	450
NL1210-039J	NL322522T-039J	0.039 \pm 5%	25	100	1300	0.27	450
NL1210-047J	NL322522T-047J	0.047 \pm 5%	26	100	1200	0.30	450
NL1210-056J	NL322522T-056J	0.056 \pm 5%	26	100	1100	0.33	450
NL1210-068J	NL322522T-068J	0.068 \pm 5%	27	100	1000	0.36	450
NL1210-082J	NL322522T-082J	0.082 \pm 5%	27	100	900	0.40	450
NL1210-R10J	NL322522T-R10J	0.10 \pm 5%	28	100	700	0.44	450
NL1210-R12J	NL322522T-R12J	0.12 \pm 5%	30	25.2	500	0.22	450
NL1210-R15J	NL322522T-R15J	0.15 \pm 5%	30	25.2	450	0.25	450
NL1210-R18J	NL322522T-R18J	0.18 \pm 5%	30	25.2	400	0.28	450
NL1210-R22J	NL322522T-R22J	0.22 \pm 5%	30	25.2	350	0.32	450
NL1210-R27J	NL322522T-R27J	0.27 \pm 5%	30	25.2	320	0.36	450
NL1210-R33J	NL322522T-R33J	0.33 \pm 5%	30	25.2	300	0.40	450
NL1210-R39J	NL322522T-R39J	0.39 \pm 5%	30	25.2	250	0.45	450
NL1210-R47J	NL322522T-R47J	0.47 \pm 5%	30	25.2	220	0.50	450
NL1210-R56J	NL322522T-R56J	0.56 \pm 5%	30	25.2	180	0.55	450
NL1210-R68J	NL322522T-R68J	0.68 \pm 5%	30	25.2	160	0.60	450

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NL SERIES

NL1210 TYPE (Continued)

Electrical Characteristics

Part Number	Inductance (µH)	Q Min.	LQ Test Freq. MHz	SRF kHz Min.	DC Resistance (Ω) Max.	Rated DC Current (mA) Max.
NL1210-R82J	0.82±5%	30	25.2	140	0.65	450
NL1210-1R0J	1.0±5%	30	7.96	120	0.70	400
NL1210-1R2J	1.2±5%	30	7.96	100	0.75	390
NL1210-1R5J	1.5±5%	30	7.96	85	0.85	370
NL1210-1R8J	1.8±5%	30	7.96	80	0.90	350
NL1210-2R2J	2.2±5%	30	7.96	75	1.0	320
NL1210-2R7J	2.7±5%	30	7.96	70	1.1	290
NL1210-3R3J	3.3±5%	30	7.96	60	1.2	260
NL1210-3R9J	3.9±5%	30	7.96	55	1.3	250
NL1210-4R7J	4.7±5%	30	7.96	50	1.5	220
NL1210-5R6J	5.6±5%	30	7.96	45	1.6	200
NL1210-6R8J	6.8±5%	30	7.96	40	1.8	180
NL1210-8R2J	8.2±5%	30	7.96	35	2.0	170
NL1210-100J	10±5%	30	2.52	30	2.1	150
NL1210-120J	12±5%	30	2.52	20	2.5	140
NL1210-150J	15±5%	30	2.52	20	2.8	130
NL1210-180J	18±5%	30	2.52	20	3.3	120
NL1210-220J	22±5%	30	2.52	20	3.7	110
NL1210-270J	27±5%	30	2.52	20	5.0	80
NL1210-330J	33±5%	30	2.52	17	5.6	70
NL1210-390J	39±5%	30	2.52	16	6.4	65
NL1210-470J	47±5%	30	2.52	15	7.0	60
NL1210-560J	56±5%	30	2.52	13	8.0	55
NL1210-680J	68±5%	30	2.52	12	9.0	50
NL1210-820J	82±5%	30	2.52	11	10.0	45
NL1210-101J	100±5%	20	0.796	10	10.0	40
NL1210-121J	120±5%	20	0.796	10	11.0	70
NL1210-151J	150±5%	20	0.796	8	15.0	65
NL1210-181J	180±5%	20	0.796	7	17.0	60
NL1210-221J	220±5%	20	0.796	7	21.0	50
NL1210-271J	270±5%	20	0.796	6	28.0	45
NL1210-331J	330±5%	20	0.796	5	34.0	40
NL1210-391J	390±5%	20	0.796	5	42.0	35
NL1210-471J	470±5%	20	0.796	4	40.0	25

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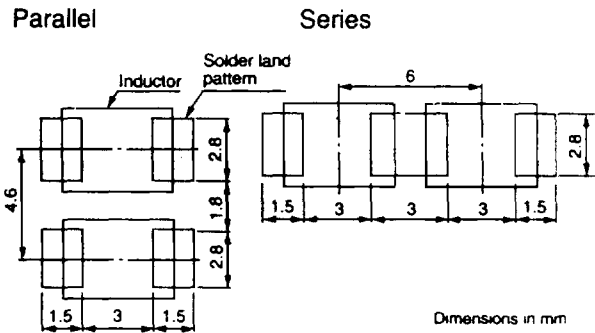
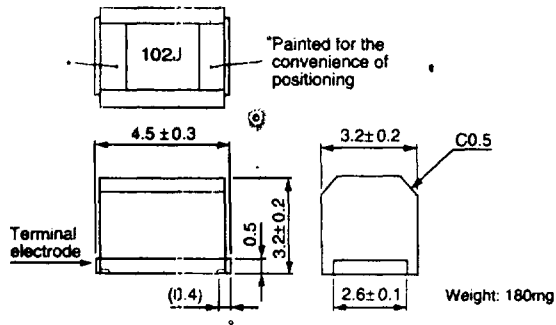
INDUCTORS

Leadless

NL SERIES

NL1812 TYPE

Shapes and Dimensions/Recommended PC Board Patterns



INDUCTORS

Electrical Characteristics

Distributor Part Number	TDK Manufacturing Part Number	Inductance (μ H)	Q Min.	L,Q Test Freq. (MHz)	SRF (MHz) Min.	DC Resistance (Ω) Max.	Rated DC Current (mA) Max.
NL1812-271J	NL453232T-271J	$270 \pm 5\%$	40	0.796	4.0	12.0	92
NL1812-331J	NL453232T-331J	$330 \pm 5\%$	40	0.796	3.5	14.0	85
NL1812-391J	NL453232T-391J	$390 \pm 5\%$	40	0.796	3.0	16.0	80
NL1812-471J	NL453232T-471J	$470 \pm 5\%$	40	0.796	3.0	26.0	62
NL1812-561J	NL453232T-561J	$560 \pm 5\%$	30	0.796	3.0	30.0	50
NL1812-681J	NL453232T-681J	$680 \pm 5\%$	30	0.796	3.0	30.0	50
NL1812-821J	NL453232T-821J	$820 \pm 5\%$	30	0.796	2.5	35.0	30
NL1812-102J	NL453232T-102J	$1000 \pm 5\%$	30	0.252	2.5	40.0	30

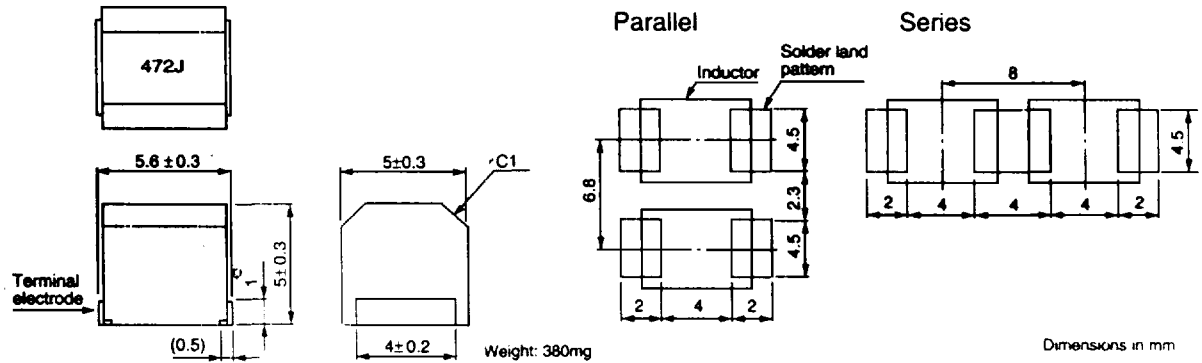
INDUCTORS

Leadless

NL SERIES

NL2220TYPE

Shapes and Dimensions/Recommended PC Board Patterns



Electrical Characteristics

Part Number	TDK Manufacturing Part Number	Inductance (μH)	Q Min.	LQ Test Freq. (MHz)	SRF (MHz) Min.	DC Resistance (Ω) Max.	Rated DC Current (mA) Max.
NL2220-122J	NL565050T-122J	1200±5%	30	0.252	1.5	17	75
NL2220-152J	NL565050T-152J	1500±5%	30	0.252	1.4	20	70
NL2220-182J	NL565050T-182J	1800±5%	30	0.252	1.3	30	60
NL2220-222J	NL565050T-222J	2200±5%	30	0.252	1.2	35	55
NL2220-272J	NL565050T-272J	2700±5%	30	0.252	1.1	55	45
NL2220-332J	NL565050T-332J	3300±5%	30	0.252	1.0	60	40
NL2220-392J	NL565050T-392J	3900±5%	30	0.252	1.0	70	38
NL2220-472J	NL565050T-472J	4700±5%	30	0.252	0.9	78	36
NL2220-562J	NL565050T-562J	5600±5%	30	0.252	0.8	85	33
NL2220-682J	NL565050T-682J	6800±5%	30	0.252	0.7	110	30
NL2220-822J	NL565050T-822J	8200±5%	30	0.252	0.6	125	28
NL2220-103J	NL565050T-103J	10000±5%	20	0.0796	0.5	150	25

INDUCTORS