

TDK Leadless Inductors

Wound Chip Inductors

NL AND NLF (MAGNETIC SHIELDED) SERIES

These revolutionary, highly reliable wire 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.

FEATURES

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

PRODUCT IDENTIFICATION

Non-magnetic shield type

NL 45 32 32 T - ○○○ □ - △
(1) (2) (3) (4) (5) (6) (7) (8)

Magnetic shielded type

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

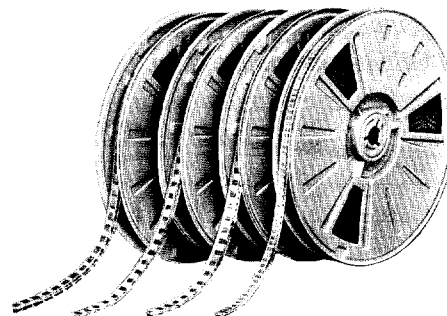
- (1) Product symbol (5) Tape and reel
(2) Length (6) Inductance
(3) Width (7) Inductance tolerance
(4) Height (8) TDK internal No.

STANDARD SPECIFICATIONS

Temperature rise	20°C [36°F] max. [against ambient temperature]
Ambient temperature	80°C [176°F] max.
Operating temperature	-20 to +100°C [-4 to +212°F]* ¹ including self-temperature rise.
Storage temperature	-40 to +100°C [-40 to +212°F]* ²
Terminal tensile strength	1 kg min. (0.5 kg for the NL252018 and NL322522)
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.
Resistance to soldering heat	260°C [500°F], 10 seconds
Resistance to solvent	Conforms to MIL-STD-202E

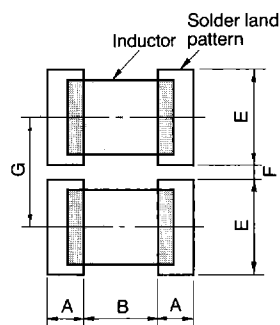
*1 -20 to +80°C [-4 to +176°F] for NLF453232

*2 -40 to +80°C [-40 to +176°F] for NLF453232

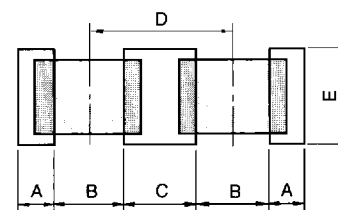


PC BOARD PATTERN

Parallel



Series



Dimensions in mm [inches]

Type	A	B	C	D	E	F	G
NL252018	1.2 [.047]	1.5 [.059]	2.5 [.098]	4 [.157]	1.5 [.059]	1.5 [.059]	3 [.118]
NL322522	1 [.039]	2 [.079]	3 [.118]	5 [.197]	2 [.079]	1.5 [.059]	3.5 [.138]
NL453232	1.5 [.059]	3 [.118]	3 [.118]	6 [.236]	2.8 [.110]	1.8 [.071]	4.6 [.181]
NL565050	2 [.079]	4 [.157]	4 [.157]	8 [.315]	4.5 [.177]	2.3 [.091]	6.8 [.268]
NLF453232	1.5 [.059]	3 [.118]	3 [.118]	6 [.236]	2.8 [.110]	1.8 [.071]	4.6 [.181]

TDK Leadless Inductors

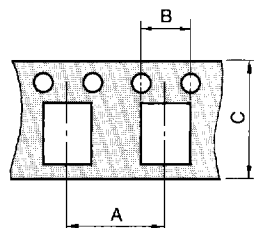
Wound Chip Inductors

PACKAGING

Packaging quantity

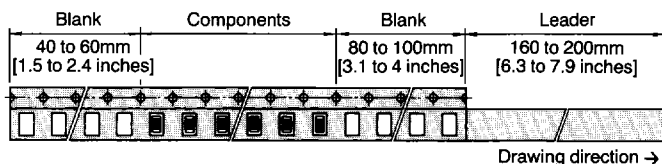
Type	NL252018 NL322522	NL453232 NLF453232	NL565050
Pcs./reel	2000	500	400

Tape dimensions (EIAJ RC-1009)



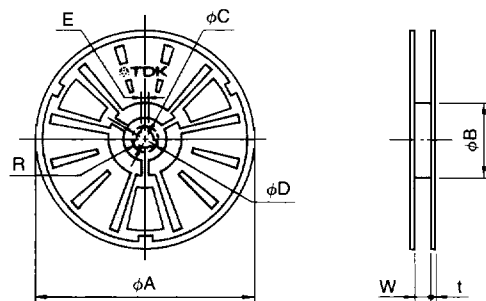
Type	A	B	C
NL252018	4 [.157]	4 [.157]	8 [.315]
NL322522	4 [.157]	4 [.157]	8 [.315]
NL453232	8 [.315]	4 [.157]	12 [.472]
NL565050	8 [.315]	4 [.157]	12 [.472]
NLF453232	8 [.315]	4 [.157]	12 [.472]

• The storage temperature for packaging is 0 to 60°C [32 to 140°F]



• The pitch holes shift only within $\pm 0.3\text{mm}$ [.012 inches] for cumulative 10 pitches.

Reel dimensions

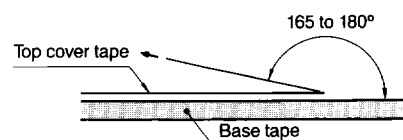
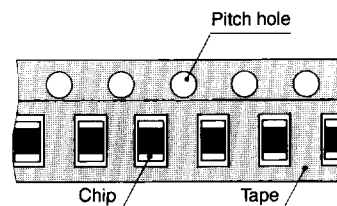
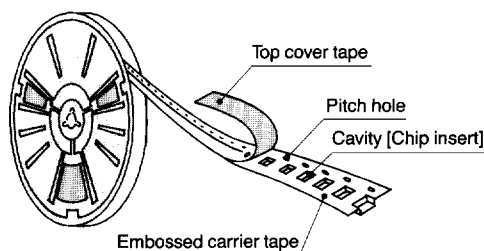


Dimensions in mm [inches]	
A	178 ± 2.0 [7.008 $\pm$.079]
B	50 [1.969] min.
C	13.0 ± 0.5 [.512 $\pm$.020]
D	21.0 ± 0.8 [.827 $\pm$.031]
E	2.0 ± 0.5 [.079 $\pm$.020]
R	R1.0 [.039]
W	$14.0^* \pm 0.5$ [.551 $\pm$.020]
t	2.0 ± 0.5 [.079 $\pm$.020]

*NL252018 and NL322522: 10.0 [.394]

• Available 330mm [12.992 inches] O.D. reels.

Taping figure and drawing direction



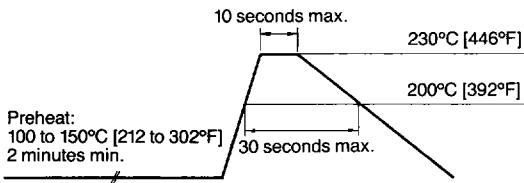
• The force for tearing off cover tape is 10 to 60 grams in the arrow direction.

TDK Leadless Inductors

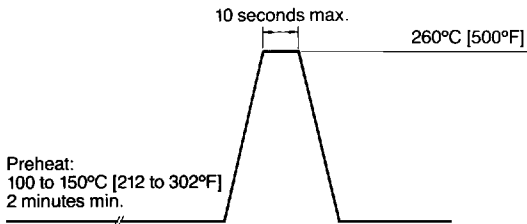
Wound Chip Inductors

RECOMMENDED SOLDERING CONDITIONS

Reflow soldering



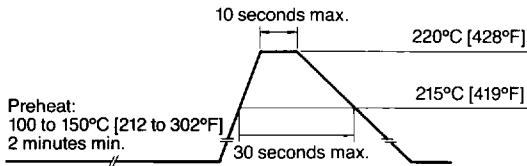
Flow soldering



Iron soldering

5 seconds max. at 250°C [482°F], 30W max.

Vapor-phasing



CLEANING

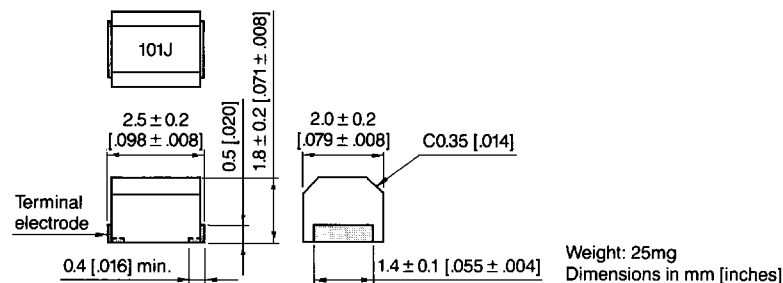
Using rosin-based flux is recommended. It is also recommended that cleaning will be done within two minutes using a chlorine-based solvent. Do not use acid or alkali solvents.

TDK Leadless Inductors

Wound Chip Inductors

NL252018 TYPE

SHAPES AND DIMENSIONS



ELECTRICAL CHARACTERISTICS

Part No.	Inductance (μH)	Q min.	Test frequency L, Q (MHz)	Self-resonant frequency (MHz) min.	DC resistance (Ω) max.	Rated current (mA) max.
NL252018T-010M	0.010 ± 20%	15	100	2150	0.26	530
NL252018T-012M	0.012 ± 20%	15	100	2050	0.27	500
NL252018T-015M	0.015 ± 20%	15	100	1850	0.29	480
NL252018T-018M	0.018 ± 20%	15	100	1650	0.31	450
NL252018T-022M	0.022 ± 20%	15	100	1550	0.37	420
NL252018T-027M	0.027 ± 20%	15	100	1400	0.40	410
NL252018T-033M	0.033 ± 20%	20	100	1250	0.42	400
NL252018T-039M	0.039 ± 20%	20	100	1100	0.45	380
NL252018T-047M	0.047 ± 20%	20	100	1050	0.50	360
NL252018T-056M	0.056 ± 20%	20	100	950	0.60	340
NL252018T-068M	0.068 ± 20%	20	100	900	0.65	320
NL252018T-082M	0.082 ± 20%	20	100	850	0.75	300
NL252018T-R10M	0.10 ± 20%	20	100	750	0.80	280
NL252018T-R12K	0.12 ± 10%	30	25.2	700	0.30	550
NL252018T-R15K	0.15 ± 10%	30	25.2	550	0.35	500
NL252018T-R18K	0.18 ± 10%	30	25.2	500	0.40	460
NL252018T-R22K	0.22 ± 10%	30	25.2	450	0.50	430
NL252018T-R27K	0.27 ± 10%	30	25.2	425	0.55	420
NL252018T-R33K	0.33 ± 10%	30	25.2	400	0.60	400
NL252018T-R39K	0.39 ± 10%	30	25.2	375	0.65	375
NL252018T-R47K	0.47 ± 10%	30	25.2	350	0.68	350
NL252018T-R56K	0.56 ± 10%	30	25.2	325	0.75	325
NL252018T-R68K	0.68 ± 10%	30	25.2	300	0.85	300
NL252018T-R82K	0.82 ± 10%	30	25.2	260	1.00	260
NL252018T-1R0J	1.0 ± 5%	30	7.96	245	1.10	245
NL252018T-1R2J	1.2 ± 5%	30	7.96	230	1.20	230
NL252018T-1R5J	1.5 ± 5%	30	7.96	182	1.30	220
NL252018T-1R8J	1.8 ± 5%	30	7.96	135	1.45	210
NL252018T-2R2J	2.2 ± 5%	30	7.96	105	1.55	200
NL252018T-2R7J	2.7 ± 5%	30	7.96	70	1.70	195
NL252018T-3R3J	3.3 ± 5%	30	7.96	55	1.90	185
NL252018T-3R9J	3.9 ± 5%	30	7.96	48	2.10	180
NL252018T-4R7J	4.7 ± 5%	30	7.96	43	2.30	175
NL252018T-5R6J	5.6 ± 5%	25	7.96	42	2.50	170

• Inductance tolerance is only standard. Please contact with us to get the further information.

• Test equipment: L, Q: YHP4194A IMPEDANCE ANALYZER (16093B + TDK TF-1)

SRF: NETWORK ANALYZER 8754A HP. (COPT. H-26)

Rdc: DIGITAL MILLIOHM METER VP-2941A NATIONAL

TDK Leadless Inductors

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ELECTRICAL CHARACTERISTICS

Part No.	Inductance (μ H)	Q min.	Test frequency L, Q (MHz)	Self-resonant frequency (MHz) min.	DC resistance (Ω) max.	Rated current (mA) max.
NL252018T-6R8J	6.8 $\pm$ 5%	25	7.96	39	2.70	165
NL252018T-8R2J	8.2 $\pm$ 5%	25	7.96	36	3.05	160
NL252018T-100J	10 $\pm$ 5%	25	2.52	33	3.50	155
NL252018T-120J	12 $\pm$ 5%	25	2.52	30	3.80	150
NL252018T-150J	15 $\pm$ 5%	25	2.52	26	4.40	140
NL252018T-180J	18 $\pm$ 5%	25	2.52	24	4.80	130
NL252018T-220J	22 $\pm$ 5%	25	2.52	22	5.50	125
NL252018T-270J	27 $\pm$ 5%	25	2.52	21	6.30	115
NL252018T-330J	33 $\pm$ 5%	25	2.52	20	7.10	110
NL252018T-390J	39 $\pm$ 5%	20	2.52	18	9.50	90
NL252018T-470J	47 $\pm$ 5%	20	2.52	17	11.10	80
NL252018T-560J	56 $\pm$ 5%	20	2.52	16	12.10	75
NL252018T-680J	68 $\pm$ 5%	20	2.52	15	16.60	70
NL252018T-820J	82 $\pm$ 5%	20	2.52	13	19.00	65
NL252018T-101J	100 $\pm$ 5%	15	0.796	12	21.00	60

• Inductance tolerance is only standard. Please contact with us to get the further information.

• Test equipment: L, Q: YHP4194A IMPEDANCE ANALYZER (16093B + TDK TF-1)

SRF: NETWORK ANALYZER 8754A HP. (COPT. H-26)

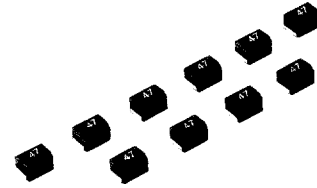
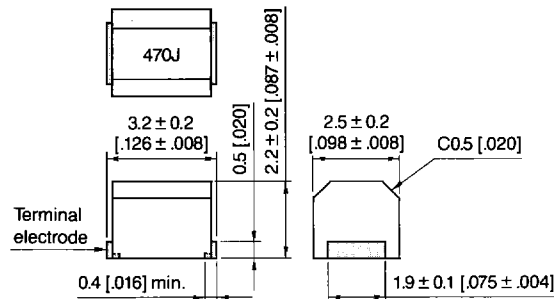
Rdc: DIGITAL MILLIOHM METER VP-2941A NATIONAL

TDK Leadless Inductors

Wound Chip Inductors

NL322522 TYPE

SHAPES AND DIMENSIONS



ELECTRICAL CHARACTERISTICS

Part No.	Inductance (μH)	Q min.	L, Q test frequency (MHz)	Self-resonant frequency (MHz) min.	DC resistance (Ω) max.	Rated current (mA) max.
NL322522T-010 □ *1	0.010 ± 10%	15	100	2500	0.13	450
NL322522T-012 □	0.012 ± 10%	17	100	2300	0.14	450
NL322522T-015 □	0.015 ± 10%	19	100	2100	0.16	450
NL322522T-018 □	0.018 ± 10%	21	100	1900	0.18	450
NL322522T-022 □	0.022 ± 10%	23	100	1700	0.20	450
NL322522T-027 □	0.027 ± 10%	23	100	1500	0.22	450
NL322522T-033 □	0.033 ± 10% or 5%	25	100	1400	0.24	450
NL322522T-039 □	0.039 ± 10% or 5%	25	100	1300	0.27	450
NL322522T-047 □	0.047 ± 10% or 5%	26	100	1200	0.30	450
NL322522T-056 □	0.056 ± 10% or 5%	26	100	1100	0.33	450
NL322522T-068 □	0.068 ± 10% or 5%	27	100	1000	0.36	450
NL322522T-082 □	0.082 ± 10% or 5%	27	100	900	0.40	450
NL322522T-R10 □	0.10 ± 10% or 5%	28	100	700	0.44	450
NL322522T-R12 □-3 *2	0.12 ± 10% or 5%	30	25.2	500	0.22	450
NL322522T-R15 □-3	0.15 ± 10% or 5%	30	25.2	450	0.25	450
NL322522T-R18 □-3	0.18 ± 10% or 5%	30	25.2	400	0.28	450
NL322522T-R22 □-3	0.22 ± 10% or 5%	30	25.2	350	0.32	450
NL322522T-R27 □-3	0.27 ± 10% or 5%	30	25.2	320	0.36	450
NL322522T-R33 □-3	0.33 ± 10% or 5%	30	25.2	300	0.40	450
NL322522T-R39 □-3	0.39 ± 10% or 5%	30	25.2	250	0.45	450
NL322522T-R47 □-3	0.47 ± 10% or 5%	30	25.2	220	0.50	450
NL322522T-R56 □-3	0.56 ± 10% or 5%	30	25.2	180	0.55	450
NL322522T-R68 □-3	0.68 ± 10% or 5%	30	25.2	160	0.60	450
NL322522T-R82 □-3	0.82 ± 10% or 5%	30	25.2	140	0.65	450
NL322522T-1R0J-3	1.0 ± 5%	30	7.96	120	0.70	400
NL322522T-1R2J-3	1.2 ± 5%	30	7.96	100	0.75	390
NL322522T-1R5J-3	1.5 ± 5%	30	7.96	85	0.85	370
NL322522T-1R8J-3	1.8 ± 5%	30	7.96	80	0.90	350
NL322522T-2R2J-3	2.2 ± 5%	30	7.96	75	1.0	320
NL322522T-2R7J-3	2.7 ± 5%	30	7.96	70	1.1	290
NL322522T-3R3J-3	3.3 ± 5%	30	7.96	60	1.2	260
NL322522T-3R9J-3	3.9 ± 5%	30	7.96	55	1.3	250
NL322522T-4R7J-3	4.7 ± 5%	30	7.96	50	1.5	220
NL322522T-5R6J-3	5.6 ± 5%	30	7.96	47	1.6	200

*1. □: Please specify the inductance tolerance, K (±10%) or J (±5%). Inductance tolerance is only standard. Please contact us to get further informations.

*2. Refer to these low-inductance products (final digit as -3, for example, NL322522T-R12 □-3), in order to get more testing accuracy we changed the measuring equipment YH4194A RF impedance analyzer or equivalent from YHP4340A Q meter. As a result, the specified inductance values in this table can be read accurately.

• Test equipment

L, Q: YHP 4340A Q-METER and YHP 4191A RF IMPEDANCE ANALYZER (16092A, EL; 2.1cm) for 25MHz min.

SRF: HP 8754A NETWORK ANALYZER (OPT. H-26)

Rdc: NATIONAL VP-2941A DIGITAL MILLIOHM METER

TDK Leadless Inductors

Wound Chip Inductors

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (μ H)	Q min.	L, Q test frequency (MHz)	Self-resonant frequency (MHz) min.	DC resistance (Ω) max.	Rated current (mA) max.
NL322522T-6R8J-3	6.8 $\pm$ 5%	30	7.96	43	1.8	180
NL322522T-8R2J-3	8.2 $\pm$ 5%	30	7.96	40	2.0	170
NL322522T-100J-3	10 $\pm$ 5%	30	2.52	36	2.1	150
NL322522T-120J-3	12 $\pm$ 5%	30	2.52	33	2.5	140
NL322522T-150J-3	15 $\pm$ 5%	30	2.52	30	2.8	130
NL322522T-180J-3	18 $\pm$ 5%	30	2.52	27	3.3	120
NL322522T-220J-3	22 $\pm$ 5%	30	2.52	25	3.7	110
NL322522T-270J-3	27 $\pm$ 5%	30	2.52	20	5.0	80
NL322522T-330J-3	33 $\pm$ 5%	30	2.52	17	5.6	70
NL322522T-390J-3	39 $\pm$ 5%	30	2.52	16	6.4	65
NL322522T-470J-3	47 $\pm$ 5%	30	2.52	15	7.0	60
NL322522T-560J-3	56 $\pm$ 5%	30	2.52	13	8.0	55
NL322522T-680J-3	68 $\pm$ 5%	30	2.52	12	9.0	50
NL322522T-820J-3	82 $\pm$ 5%	30	2.52	11	10.0	45
NL322522T-101J-3	100 $\pm$ 5%	20	0.796	10	10.0	40
NL322522T-121J-3	120 $\pm$ 5%	20	0.796	10	11.0	70
NL322522T-151J-3	150 $\pm$ 5%	20	0.796	8	15.0	65
NL322522T-181J-3	180 $\pm$ 5%	20	0.796	7	17.0	60
NL322522T-221J-3	220 $\pm$ 5%	20	0.796	7	21.0	50

• Inductance tolerance is only standard. Please contact us to get further informations.

• Refer to these low-inductance products (final digit as -3, for example, NL322522T-R12□-3), in order to get more testing accuracy we changed the measuring equipment YH4194A RF impedance analyzer or equivalent from YHP4340A Q meter. As a result, the specified inductance values in this table can be read accurately.

• Test equipment

L, Q: YHP 4340A Q-METER

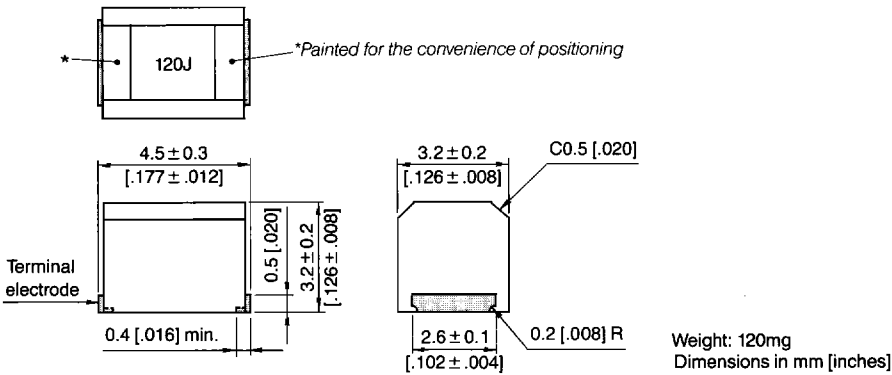
SRF: HP 8754A NETWORK ANALYZER (OPT. H-26)

Rdc: NATIONAL VP-2941A DIGITAL MILLIOHM METER

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Wound Chip Inductors

NL453232 TYPE SHAPES AND DIMENSIONS



ELECTRICAL CHARACTERISTICS

Part No.	Inductance (μH)	Q min.	L, Q test frequency (MHz)	Self-resonant frequency (MHz) min.	DC resistance (Ω) max.	Rated current (mA) max.
NL453232T-271J-3	270 ± 5%	40	0.796	6	12.00	92
NL453232T-331J-3	330 ± 5%	40	0.796	5	14.00	85
NL453232T-391J-3	390 ± 5%	40	0.796	5	16.00	80
NL453232T-471J-3	470 ± 5%	40	0.796	4	26.00	62
NL453232T-561J-3	560 ± 5%	30	0.796	4	30.00	50
NL453232T-681J-3	680 ± 5%	30	0.796	3	30.00	50
NL453232T-821J-3	820 ± 5%	30	0.796	3	35.00	30
NL453232T-102J-3	1000 ± 5%	30	0.252	3	40.00	30

• Test equipment:

L, Q: YHP 4194A IMPEDANCE GAIN PHASE ANALYZER (Terminal adapter 16093B)

RF: NETWORK ANALYZER 8505A HP. (BNC $Z_{in} = Z_{out} = 50\Omega$)

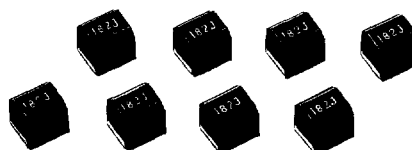
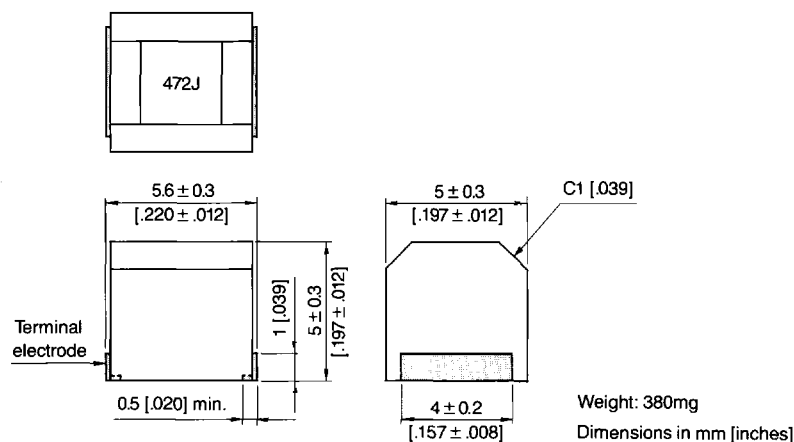
Rdc: DIGITAL MILLIOHM METER VP-2941A NATIONAL

TDK Leadless Inductors

Wound Chip Inductors

NL565050 TYPE

SHAPES AND DIMENSIONS



ELECTRICAL CHARACTERISTICS

Part No.	Inductance (mH)	Q min.	L, Q test frequency (MHz)	Self-resonant frequency (MHz) min.	DC resistance (Ω) max.	Rated current (mA) max.
NL565050T-122J	1.2 ± 5%	30	0.252	1.5	17	75
NL565050T-152J	1.5 ± 5%	30	0.252	1.4	20	70
NL565050T-182J	1.8 ± 5%	30	0.252	1.3	30	60
NL565050T-222J	2.2 ± 5%	30	0.252	1.2	35	55
NL565050T-272J	2.7 ± 5%	30	0.252	1.1	55	45
NL565050T-332J	3.3 ± 5%	30	0.252	1.0	60	40
NL565050T-392J	3.9 ± 5%	30	0.252	1.0	70	38
NL565050T-472J	4.7 ± 5%	30	0.252	0.9	78	36
NL565050T-562J	5.6 ± 5%	30	0.252	0.8	85	33
NL565050T-682J	6.8 ± 5%	30	0.252	0.7	110	30
NL565050T-822J	8.2 ± 5%	30	0.252	0.6	125	28
NL565050T-103J	10 ± 5%	20	0.0796	0.5	150	25

• Inductance tolerance is only standard. Please contact us to get further informations.

• Test equipment:

L, Q: YHP 4194A IMPEDANCE GAIN PHASE ANALYZER (Terminal adapter 16093B)

SRF: NETWORK ANALYZER 8505A HP. (BNC $Z_{in} = Z_{out} = 50\Omega$)

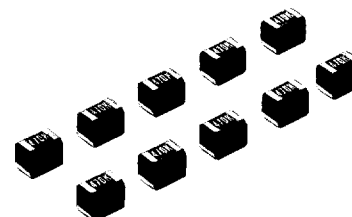
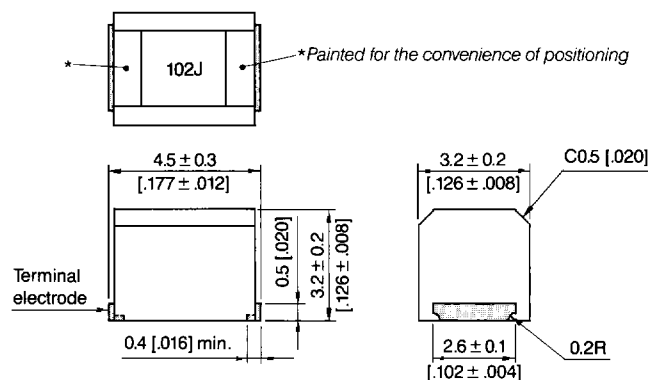
Rdc: DIGITAL MILLIOHM METER VP-2941A NATIONAL

TDK Leadless Inductors

Wound Chip Inductors

NLF453232 TYPE (MAGNETIC SHIELDED)

SHAPES AND DIMENSIONS



Weight: 180mg
Dimensions in mm [inches]

ELECTRICAL CHARACTERISTICS

Part No.	Inductance (μH)	Q min.	L, Q test frequency (MHz)	Self-resonant frequency (MHz) min.	DC resistance (Ω) max.	Rated current (mA) max.
NLF453232T-1R0M-3	1.0 ± 20%	30	7.96	140	0.35	150
NLF453232T-1R2M-3	1.2 ± 20%	30	7.96	120	0.38	145
NLF453232T-1R5M-3	1.5 ± 20%	30	7.96	100	0.42	140
NLF453232T-1R8M-3	1.8 ± 20%	30	7.96	90	0.48	120
NLF453232T-2R2M-3	2.2 ± 20%	30	7.96	80	0.50	110
NLF453232T-2R7M-3	2.7 ± 20%	30	7.96	70	0.55	105
NLF453232T-3R3M-3	3.3 ± 20%	30	7.96	65	0.60	100
NLF453232T-3R9M-3	3.9 ± 20%	30	7.96	60	0.66	90
NLF453232T-4R7M-3	4.7 ± 20%	30	7.96	55	0.71	85
NLF453232T-5R6M-3	5.6 ± 20%	30	7.96	45	0.75	80
NLF453232T-6R8M-3	6.8 ± 20%	30	7.96	40	0.90	70
NLF453232T-8R2M-3	8.2 ± 20%	30	7.96	35	1.00	65
NLF453232T-100K-3	10 ± 10%	50	2.52	30	1.10	60
NLF453232T-120K-3	12 ± 10%	50	2.52	27	1.20	58
NLF453232T-150K-3	15 ± 10%	50	2.52	24	1.30	55
NLF453232T-180K-3	18 ± 10%	50	2.52	22	1.45	52
NLF453232T-220K-3	22 ± 10%	50	2.52	20	1.60	48
NLF453232T-270K-3	27 ± 10%	50	2.52	17	1.90	44
NLF453232T-330K-3	33 ± 10%	50	2.52	15	2.00	42
NLF453232T-390K-3	39 ± 10%	50	2.52	13	2.20	40
NLF453232T-470K-3	47 ± 10%	50	2.52	12	2.40	38
NLF453232T-560K-3	56 ± 10%	50	2.52	11	2.65	36
NLF453232T-680K-3	68 ± 10%	50	2.52	10	3.00	33
NLF453232T-820K-3	82 ± 10%	50	2.52	10	3.30	31
NLF453232T-101K-3	100 ± 10%	50	0.796	9	3.80	29
NLF453232T-121K-3	120 ± 10%	50	0.796	8	4.50	27
NLF453232T-151K-3	150 ± 10%	50	0.796	7	5.70	26
NLF453232T-181K-3	180 ± 10%	40	0.796	6	6.30	24
NLF453232T-221K-3	220 ± 10%	40	0.796	5.5	6.90	23
NLF453232T-271K-3	270 ± 10%	40	0.796	5	7.60	23
NLF453232T-331K-3	330 ± 10%	40	0.796	4.5	9.00	20
NLF453232T-391K-3	390 ± 10%	40	0.796	4	9.50	19
NLF453232T-471K-3	470 ± 10%	40	0.796	3.8	10.50	18
NLF453232T-561K-3	560 ± 10%	40	0.796	3.6	12.00	17
NLF453232T-681K-3	680 ± 10%	40	0.796	3.4	13.50	16
NLF453232T-821K-3	820 ± 10%	40	0.796	3	16.00	15
NLF453232T-102K-3	1000 ± 10%	40	0.252	2.5	18.00	14

• Inductance tolerance is only standard. Please contact us to get further informations.

• Test equipment L, Q: YHP 4194A IMPEDANCE GAIN PHASE ANALYZER (Terminal adapter 16093B) SRF: NETWORK ANALYZER 8505A HP (BNC Z_{in} = Z_{out} = 50Ω)

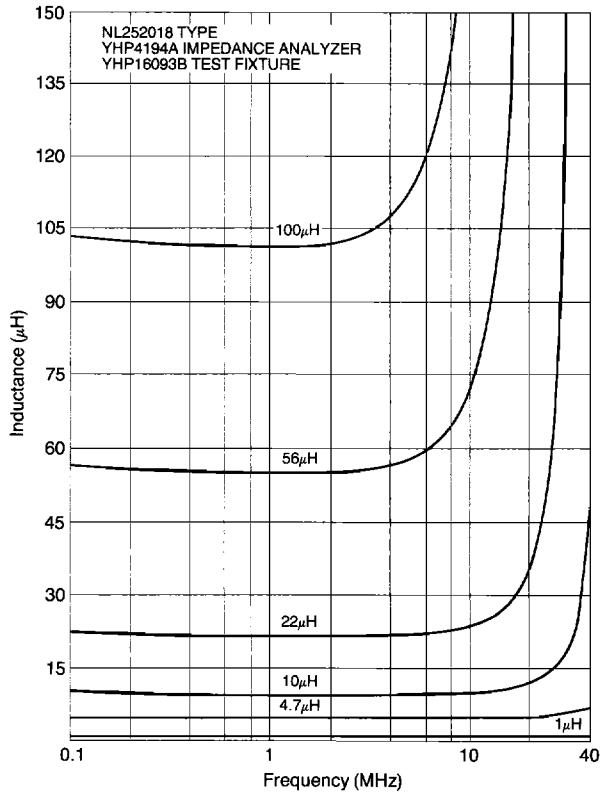
TDK Leadless Inductors

Wound Chip Inductors

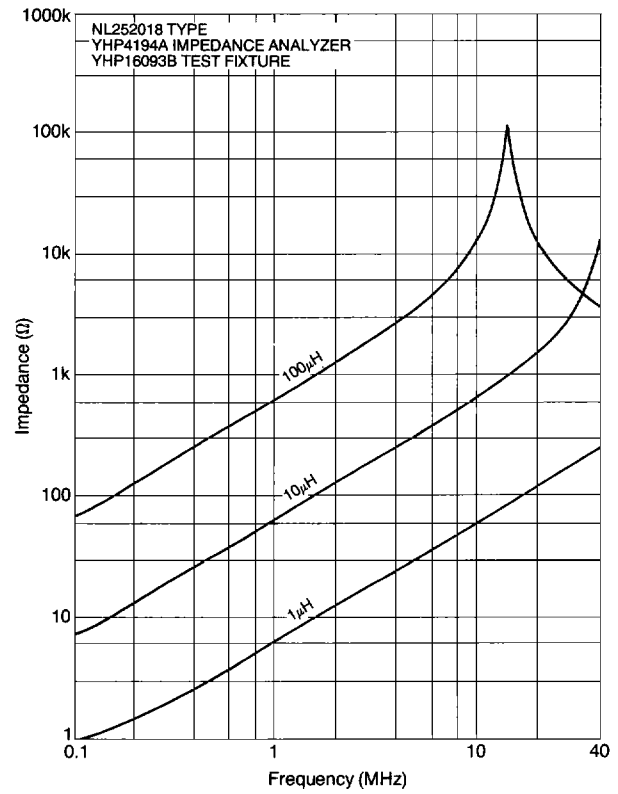
TYPICAL ELECTRICAL CHARACTERISTICS

NL252018 TYPE

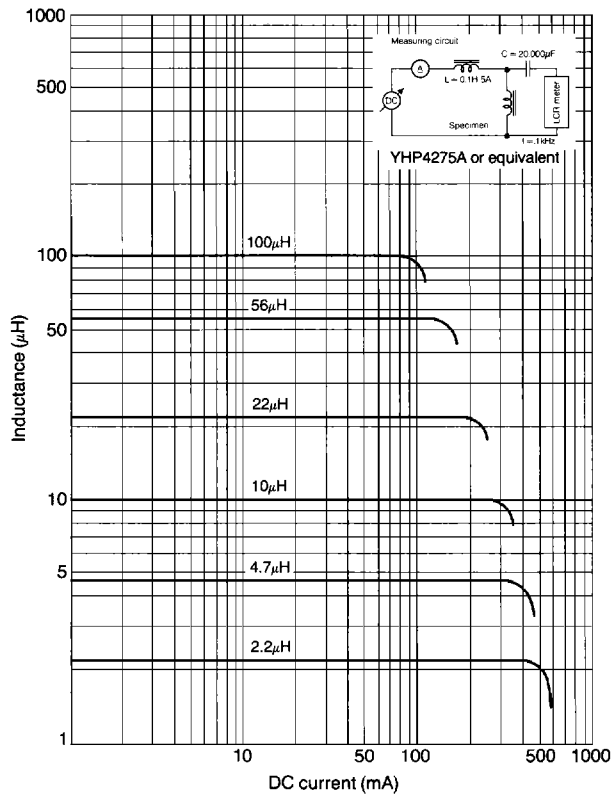
Inductance change vs. frequency characteristics



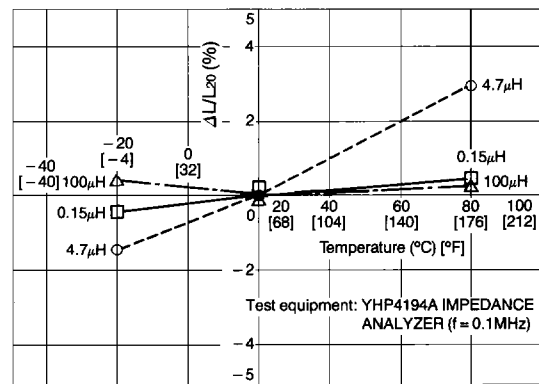
Impedance change vs. frequency characteristics



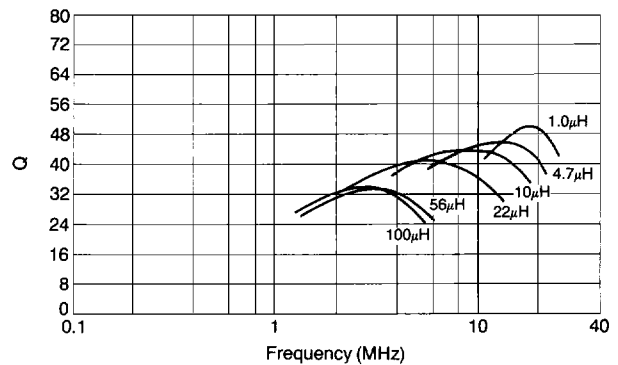
Inductance change vs. DC superposition characteristics



Inductance change vs. temperature characteristics



Q vs. frequency characteristics



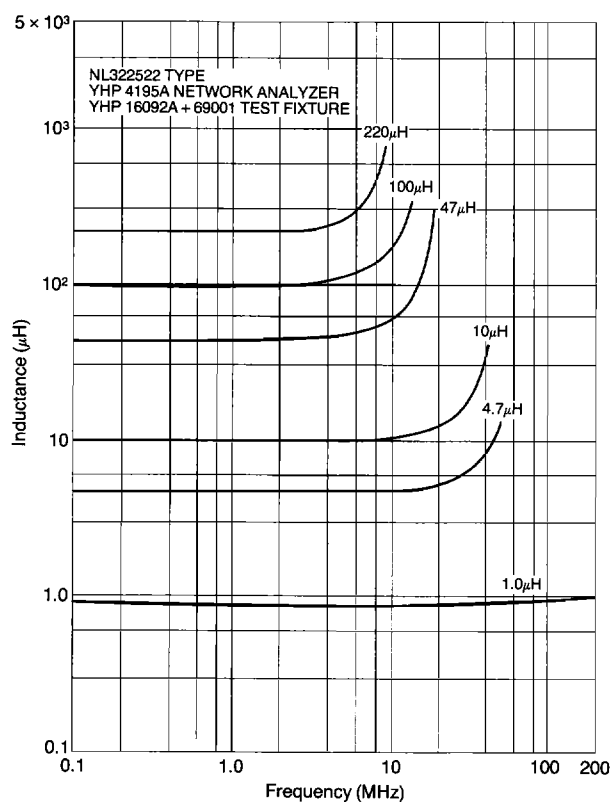
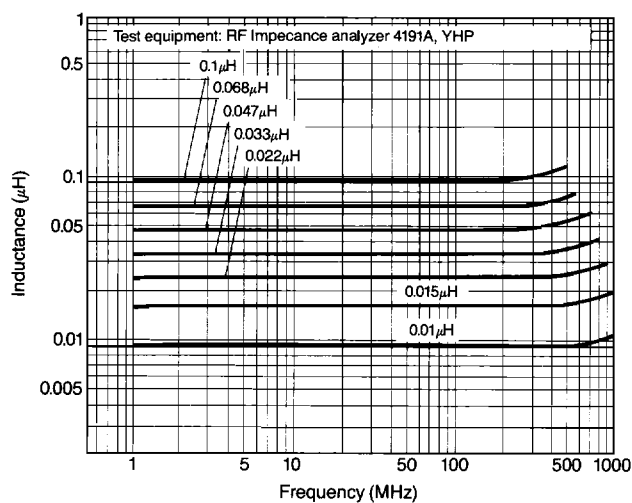
TDK Leadless Inductors

Wound Chip Inductors

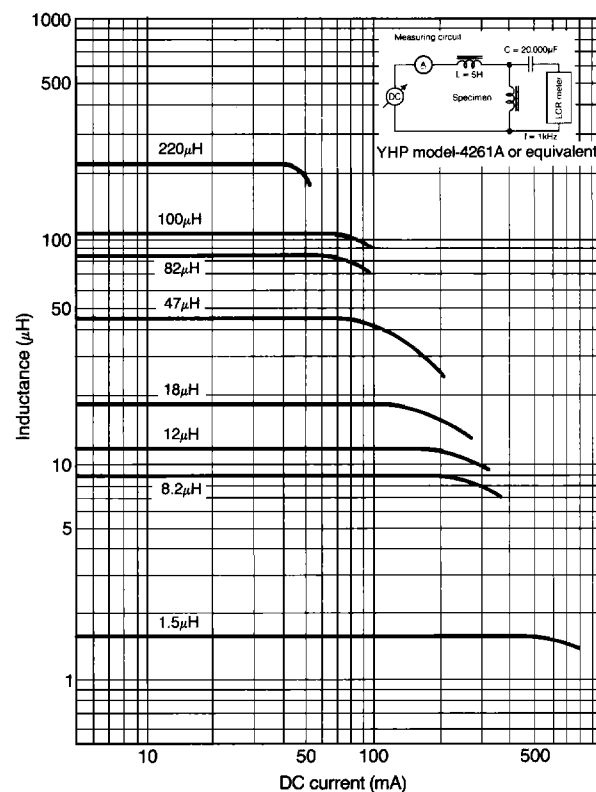
TYPICAL ELECTRICAL CHARACTERISTICS

NL322522 TYPE

Inductance vs. frequency characteristics



Inductance change vs. DC superposition characteristics

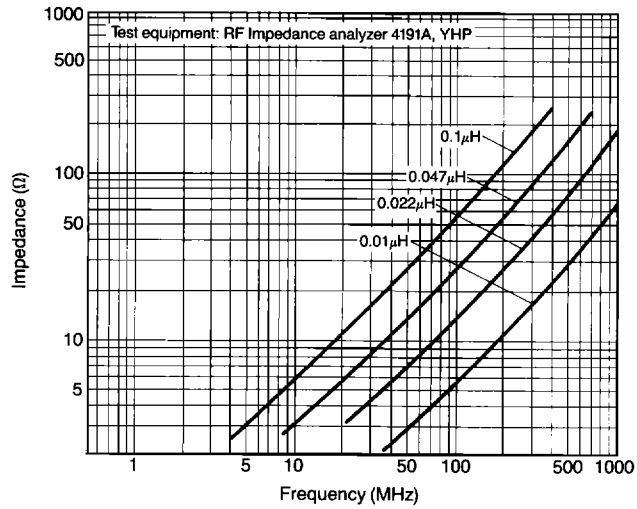


TDK Leadless Inductors

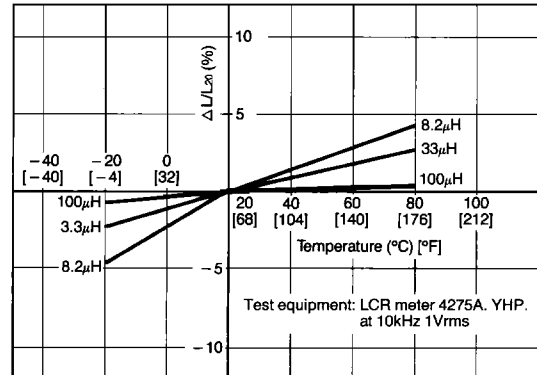
Wound Chip Inductors

TYPICAL ELECTRICAL CHARACTERISTICS NL322522 TYPE

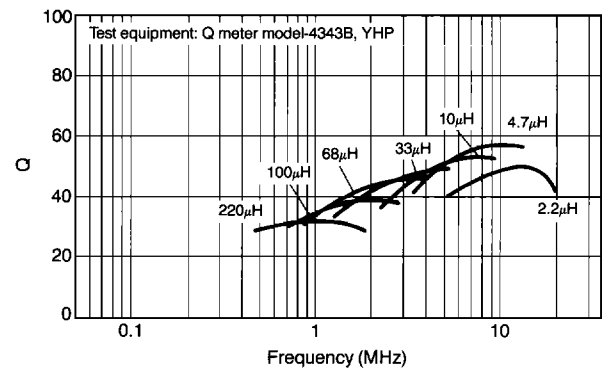
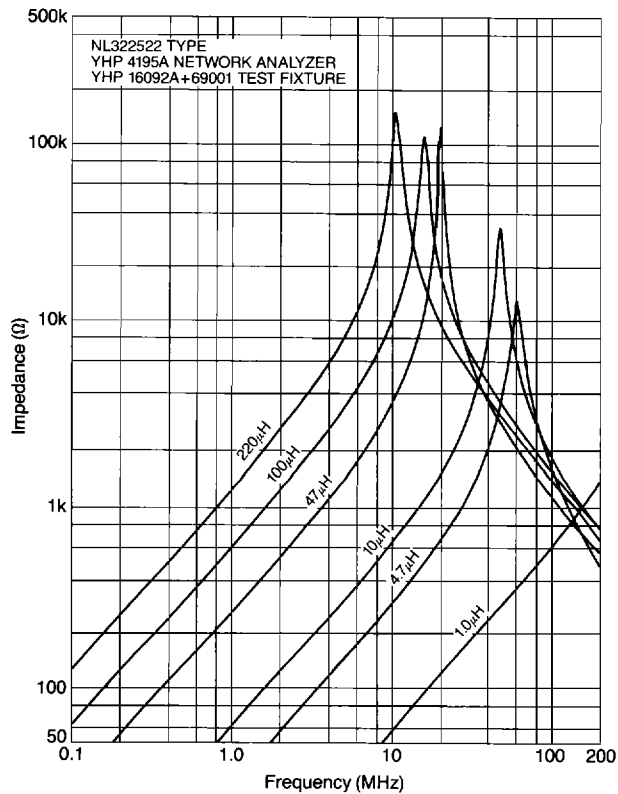
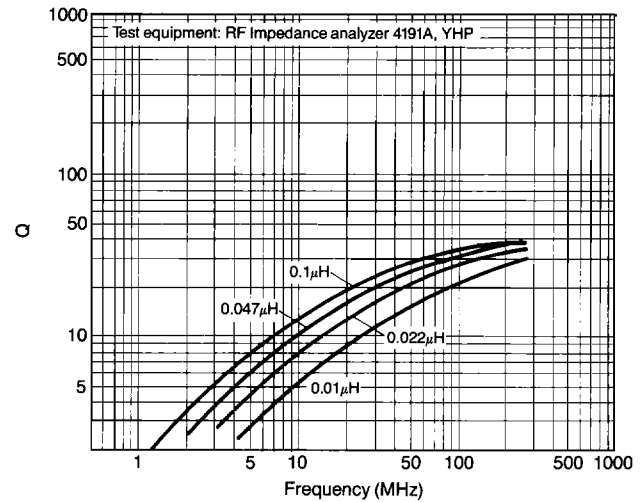
Impedance change vs. frequency characteristics



Inductance change vs. temperature characteristics



Q vs. frequency characteristics



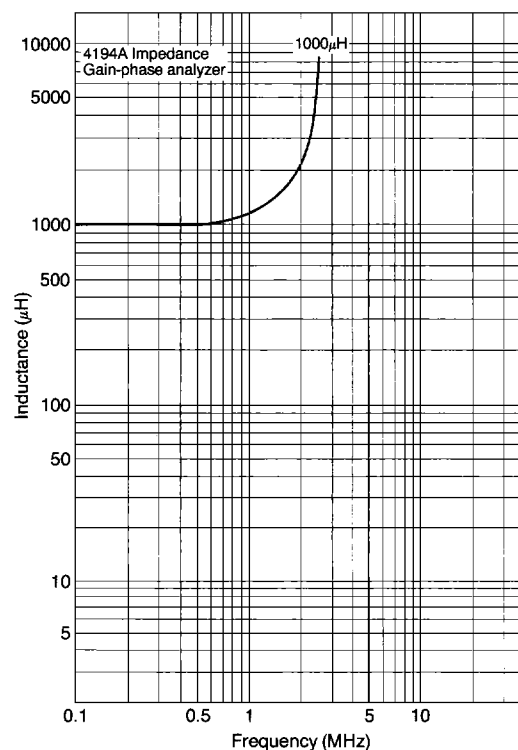
TDK Leadless Inductors

Wound Chip Inductors

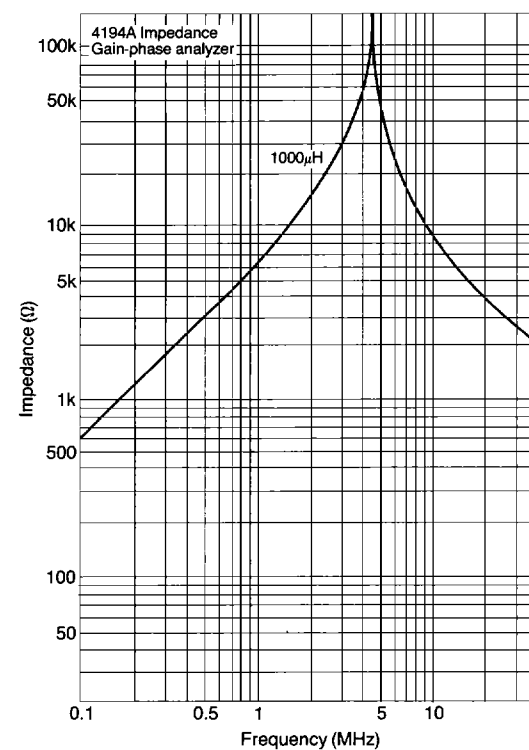
TYPICAL ELECTRICAL CHARACTERISTICS

NL453232 TYPE

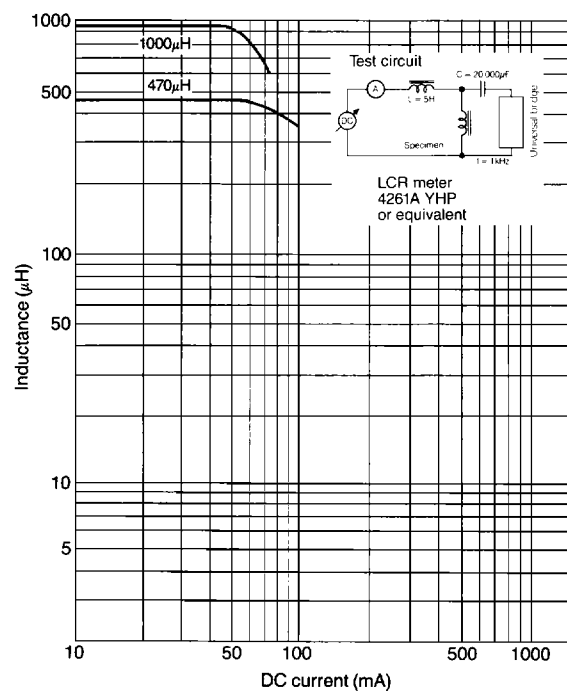
Inductance vs. frequency characteristics



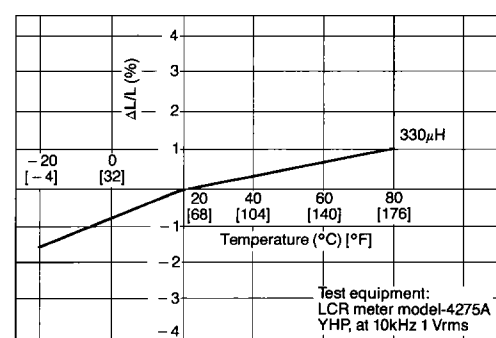
Impedance vs. frequency characteristics



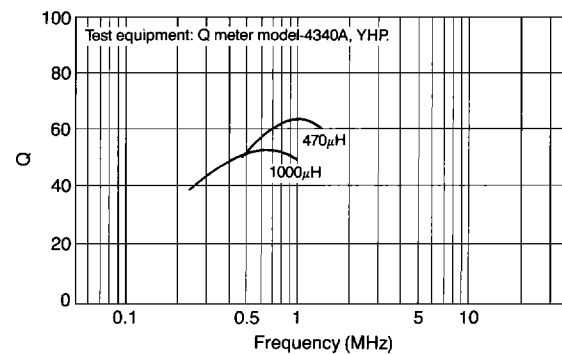
Inductance change vs. DC superposition characteristics



Inductance change vs. temperature characteristics



Q vs. frequency characteristics



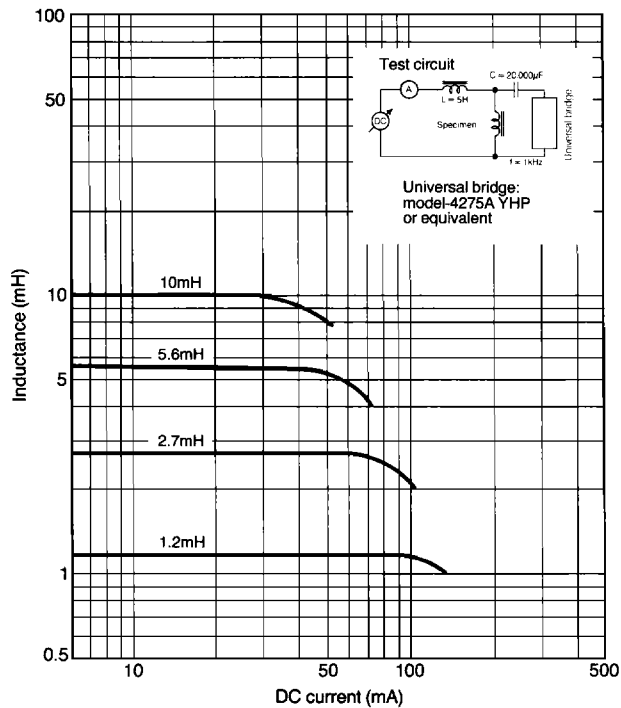
TDK Leadless Inductors

Wound Chip Inductors

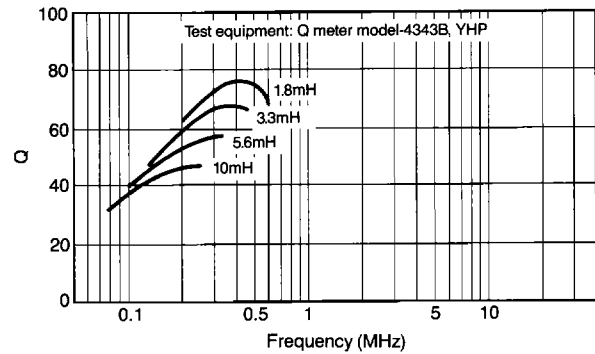
TYPICAL ELECTRICAL CHARACTERISTICS

NL565050 TYPE

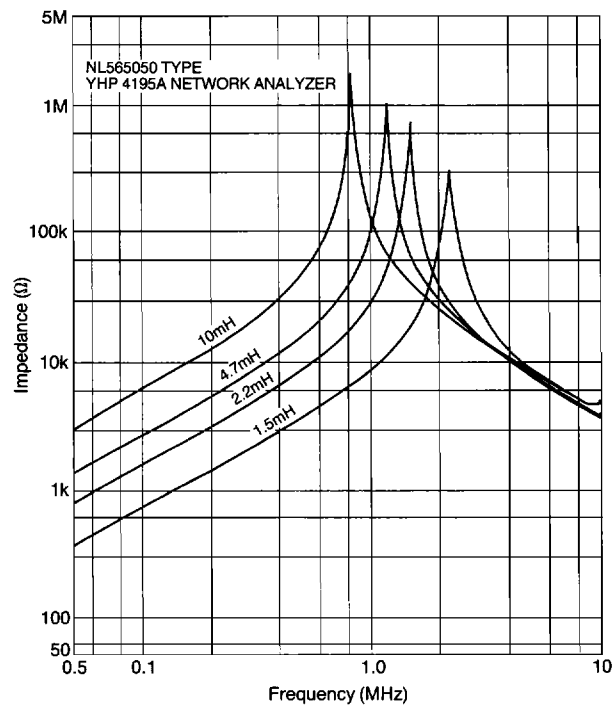
Inductance change vs. DC superposition characteristics



Q vs. frequency characteristics



Impedance change vs. frequency characteristics



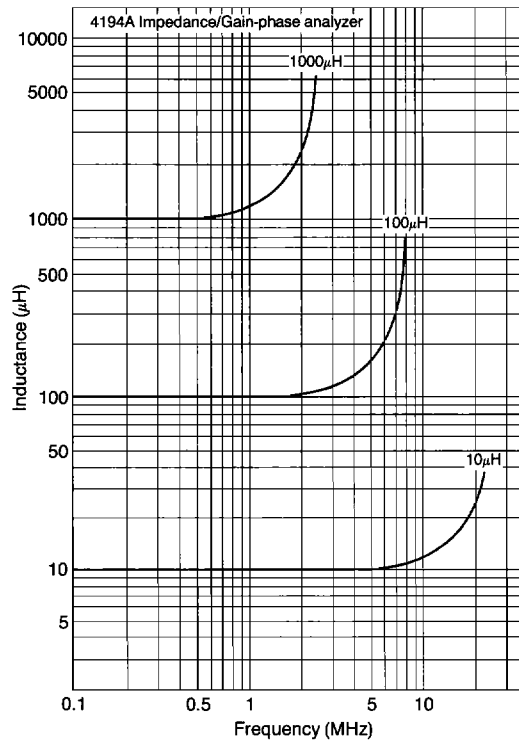
TDK Leadless Inductors

Wound Chip Inductors

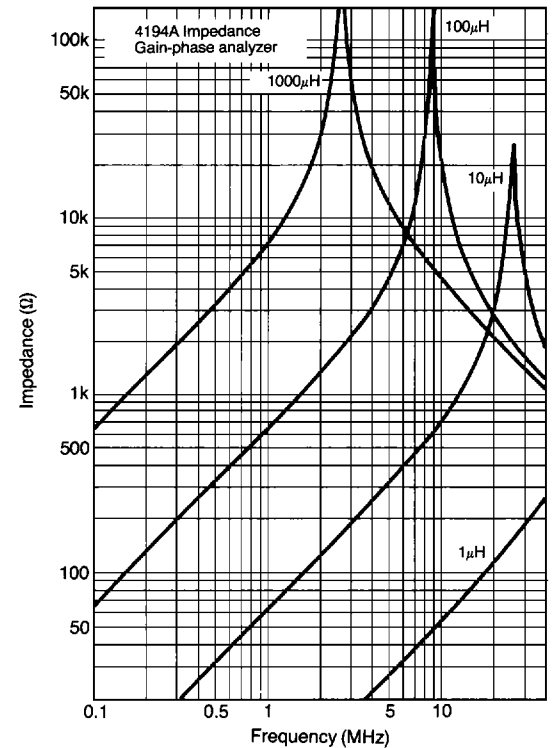
TYPICAL ELECTRICAL CHARACTERISTICS

NLF453232 TYPE

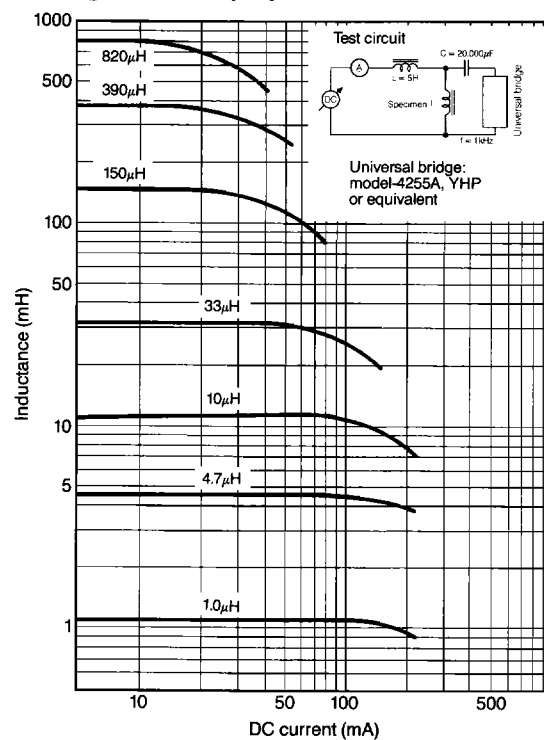
Inductance vs. frequency characteristics



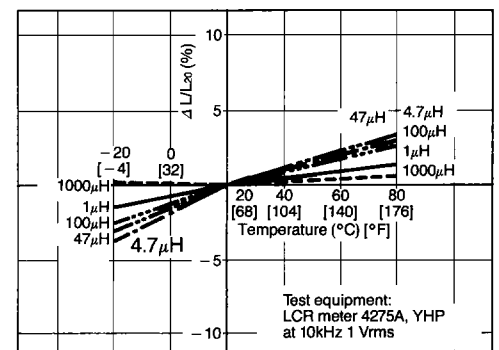
Impedance vs. frequency characteristics



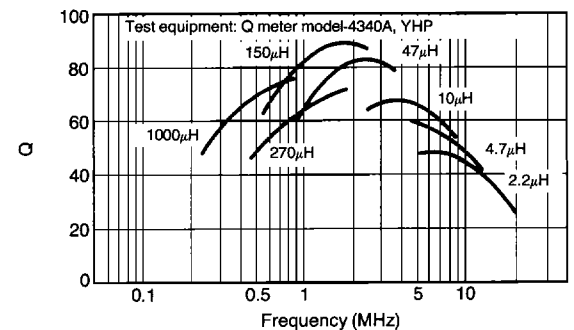
Inductance change vs. DC superposition characteristics



Inductance change vs. temperature characteristics



Q vs. frequency characteristics



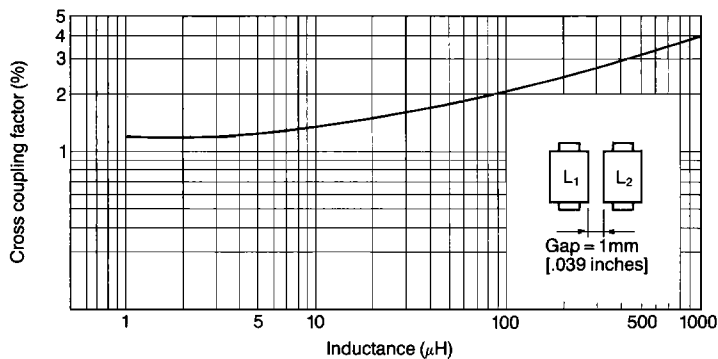
TDK Leadless Inductors

Wound Chip Inductors

TYPICAL ELECTRICAL CHARACTERISTICS

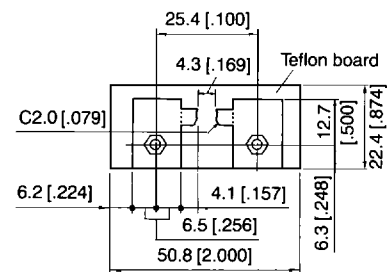
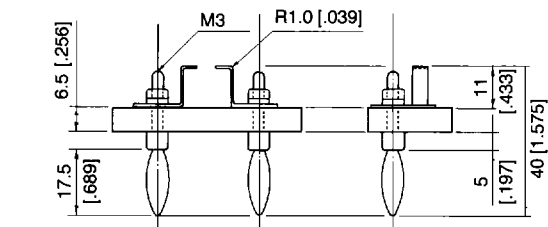
NLF453232 TYPE

Coupling factor

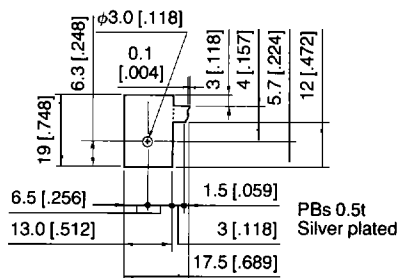


Measurement conditions: MIL-C-15305E
#4, 8, 8, 4
Cross coupling factor (%) = $M \div (\sqrt{L_1 \cdot L_2}) \times 100$
 $M = (L_{11} - L_{12}) \div 4$
 $L_{11} = L_1 + L_2 + 2M$
 $L_{12} = L_1 + L_2 - 2M$
Test equipment: LCR METER 4275A, YHP
LCZ METER 4276A, YHP
Test frequency: $L \leq 1 \mu\text{H}$ at 100kHz
 $1 \mu\text{H} < L \leq 100 \mu\text{H}$ at 10kHz
 $100 \mu\text{H} < L$ at 1kHz

Measuring jig for Q-meter



Depending upon the measuring jig is 0.8pF



Dimensions in mm [inches]