

SMD Wire Wound Chip Inductors / NLT TYPE (For Power Line)

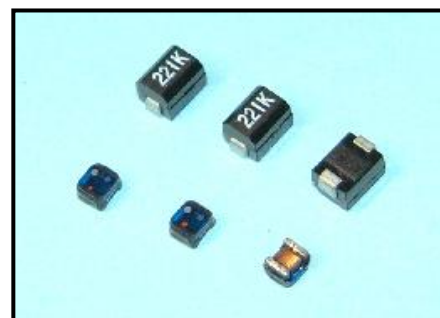
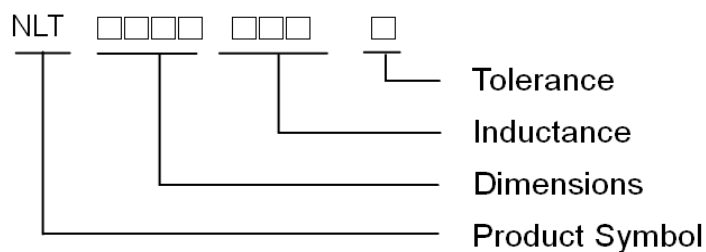
Features:

- 1.Utilizing a miniaturized winding structure.
- 2.These products provide low DC resistance and high current.
- 3.Precision inductance tolerance is available.
- 4.RoHS compliant.

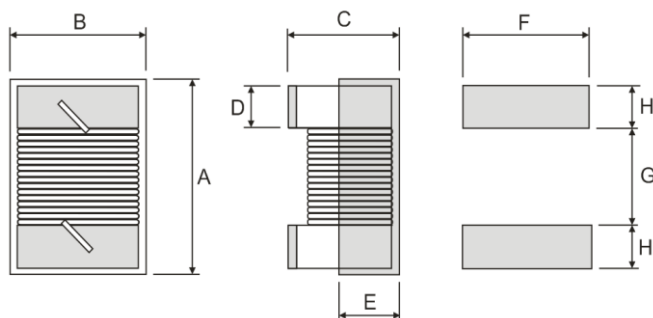
Applications:

- 1.Personal computers,Hard disk drives.
- 2.xDSL modem and Cable modem.
- 3.Digital camera and other electronic equipment.

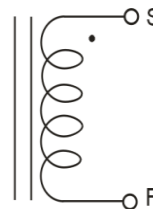
Product Identification :



Shape and Dimension



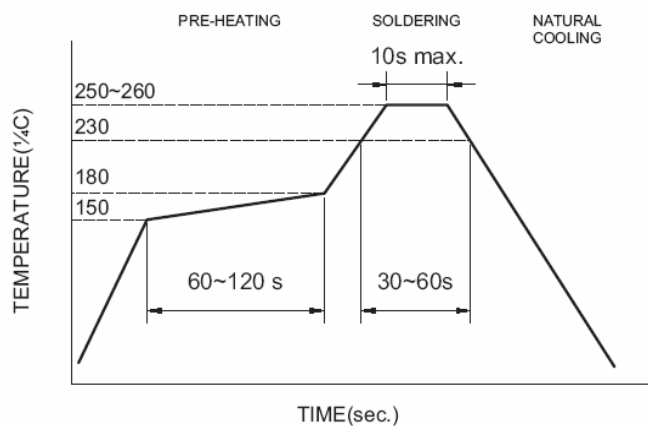
Schematic



Dimensions in mm

TYPE	A(max)	B(max)	C(max)	D(ref)	E(ref)	F(mm)	G(mm)	H(mm)
NLT0603	1.80	1.20	1.02	0.33	0.45	1.02	0.64	0.64
NLT1008	2.90	2.54	2.03	0.50	1.30	2.54	1.27	1.02
NLT1210	3.60	2.90	2.40	0.50	1.10	2.70	2.00	1.20

Recommended Reflow



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Electrical Characteristics (NLT0603 TYPE)

Part No.	Inductance (uH)	L/Q Test (MHZ)	Q Min.	SRF (MHZ)Min.	DCR (Ω)Max.	IDC (mA)Max.	Tolerance (±%)	Color Code
NLT0603-R47□	0.47	7.9/7.9	15/ 7.9	640	0.45	1400	5,10	Black
NLT0603-R56□	0.56	7.9/7.9	15	630	0.44	1400	5,10	Brown
NLT0603-R68□	0.68	7.9/7.9	15	510	0.52	1340	5,10	Red
NLT0603-R78□	0.78	7.9/7.9	15	465	0.63	1300	5,10	Orange
NLT0603-R82□	0.82	7.9/7.9	15	440	0.69	1200	5,10	Yellow
NLT0603-1R0□	1	7.9/7.9	15	320	0.81	1100	5,10	Green
NLT0603-1R2□	1.2	7.9/7.9	15	270	0.87	1000	5,10	Blue
NLT0603-1R5□	1.5	7.9/7.9	15	230	0.96	920	5,10	Violet
NLT0603-1R8□	1.8	7.9/7.9	15	210	1.1	900	5,10	Gray
NLT0603-2R2□	2.2	7.9/7.9	15	115	1.2	740	5,10	White
NLT0603-2R7□	2.7	7.9/7.9	15	100	1.38	700	5,10	Black
NLT0603-3R3□	3.3	7.9/7.9	15	84	1.5	680	5,10	Brown
NLT0603-3R9□	3.9	7.9/7.9	15	75	1.6	600	5,10	Red
NLT0603-4R7□	4.7	7.9/7.9	15	67	2.1	580	5,10	Orange
NLT0603-5R6□	5.6	7.9/7.9	15	55	2.37	540	5,10	Yellow
NLT0603-6R8□	6.8	7.9/7.9	15	48	3.1	500	5,10	Green
NLT0603-7R8□	7.8	7.9/7.9	15	40	3.35	460	5,10	Blue
NLT0603-8R2□	8.2	7.9/7.9	15	38	3.5	440	5,10	Violet
NLT0603-100□	10	2.5/2.5	12	32	4.46	400	5,10	Gray

Electrical Characteristics (NLT1008 TYPE)

Part No.	Inductance (uH)	L/Q Test (MHZ)	Q Typ.	SRF (MHZ)Min.	DCR (Ω)Max.	IDC (mA)Max.	Tolerance (±%)	Color Code		
NLT1008-R10□	0.1	25/25	35	1500	0.05	2700	5,10	Brown	Red	Brown
NLT1008-R22□	0.22	25/25	35	800	0.15	2400	5,10	Red	Red	Brown
NLT1008-R47□	0.47	25/25	35	460	0.2	1800	10	Yellow	Violet	Brown
NLT1008-R82□	0.82	25/25	35	360	0.35	1200	5,10	Gray	Red	Brown
NLT1008-1R0□	1	7.9/7.9	32	340	0.34	1200	10	Brown	Black	Red
NLT1008-1R1□	1.1	7.9/7.9	25	300	0.34	1100	10	Brown	Brown	Red
NLT1008-1R2□	1.2	7.9/7.9	25	300	0.25	1100	5,10	Brown	Red	Red
NLT1008-1R5□	1.5	7.9/7.9	32	230	0.42	1000	5,10	Brown	Green	Red
NLT1008-1R8□	1.8	7.9/7.9	27	180	0.45	800	5,10	Brown	Gray	Red
NLT1008-2R2□	2.2	7.9/7.9	27	140	0.5	900	5,10	Red	Red	Red
NLT1008-2R7□	2.7	7.9/7.9	27	130	0.55	900	5,10	Red	Violet	Red
NLT1008-3R3□	3.3	7.9/7.9	27	125	0.6	900	5,10	Orgnge	Orgnge	Red
NLT1008-3R9□	3.9	7.9/7.9	27	100	0.8	800	5,10	Orgnge	White	Red
NLT1008-4R7□	4.7	7.9/7.9	30	90	0.9	720	5,10	Yellow	Violet	Red
NLT1008-5R6□	5.6	7.9/7.9	27	60	1	720	5,10	Green	Blue	Red
NLT1008-6R8□	6.8	7.9/7.9	27	60	1.05	670	5,10	Blue	Gray	Red
NLT1008-8R2□	8.2	7.9/7.9	25	55	1.2	640	5,10	Gray	Red	Red
NLT1008-100□	10	2.5/2.5	23	55	1.55	540	5,10	Brown	Black	Orange
NLT1008-120□	12	2.5/2.5	23	36	2.1	460	5,10	Brown	Red	Orange
NLT1008-150□	15	2.5/2.5	23	36	2.38	460	5,10	Brown	Green	Orange
NLT1008-180□	18	2.5/2.5	23	32	2.5	410	5,10	Brown	Gray	Orange
NLT1008-220□	22	2.5/2.5	23	29	2.92	400	5,10	Red	Red	Orange
NLT1008-270□	27	2.5/2.5	23	22	3.7	300	10	Red	Violet	Orange

SMD Wire Wound Chip Inductors / NLT TYPE (For Power Line)

Electrical Characteristics (NLT1008 TYPE)

Part No.	Inductance (uH)	L/Q Test (MHZ)	Q Typ.	SRF (MHZ)Min.	DCR (Ω)Max.	IDC (mA)Max.	Tolerance (±%)	Color Code		
NLT1008-330□	33	2.5/2.5	23	21	4.1	300	5,10	Orgnge	Orgnge	Orange
NLT1008-390□	39	2.5/2.5	18	15	5.5	270	5,10	Orgnge	White	Orange
NLT1008-470□	47	2.5/2.5	23	17	7.8	220	5,10	Yellow	Violet	Orange
NLT1008-680□	68	2.5/2.5	20	9	11.5	180	5,10	Blue	Gray	Orange
NLT1008-101□	100	1/1	13	4	13.2	170	5,10	Brown	Black	Yellow
NLT1008-151□	150	1/1	13	3	22.5	160	5,10	Brown	Green	Yellow
NLT1008-221□	220	1/1	13	3	26.5	100	5,10	Red	Red	Yellow
NLT1008-271□	270	1/1	13	2	32	95	5,10	Red	Violet	Yellow
NLT1008-331□	330	1/1	13	2	32.5	90	5,10	Orgnge	Orgnge	Yellow

Electrical Characteristics (NLT1210 TYPE)

Part No.	Inductance (uH)	L/Q Test (MHZ)	Q Min.	SRF (MHZ)Min.	DCR (Ω)Max.	Isat (mA) Max.	Irms (mA) Typ.	Tolerance (±%)	Color Code		
NLT1210-R27□	0.27	25/25	40	500	0.080	3900	3400	5,10	Red	Violet	Brown
NLT1210-R33□	0.33	25/25	40	500	0.090	3400	2600	10	Orange	Orange	Brown
NLT1210-R68□	0.68	25/25	40	450	0.120	2500	2300	5,10	Blue	Gray	Brown
NLT1210-R91□	0.91	25/25	45	410	0.165	2100	1600	5,10	White	Brown	Brown
NLT1210-1R0□	1	7.9/7.9	35	340	0.125	2400	1750	5,10	Brown	Black	Red
NLT1210-1R2□	1.2	7.9/7.9	35	280	0.135	2400	1650	10	Brown	Red	Red
NLT1210-1R5□	1.5	7.9/7.9	30	160	0.145	2100	1750	10	Brown	Green	Red
NLT1210-2R2□	2.2	7.9/7.9	30	100	0.170	1800	1450	5,10	Red	Red	Red
NLT1210-2R5□	2.5	7.9/7.9	30	80	0.190	1700	1400	5,10	Red	Green	Red
NLT1210-2R7□	2.7	7.9/7.9	30	75	0.185	1500	1300	5,10	Red	Violet	Red
NLT1210-4R7□	4.7	7.9/7.9	28	55	0.300	1300	1100	5,10	Yellow	Violet	Red
NLT1210-5R6□	5.6	7.9/7.9	28	50	0.350	1100	1000	5,10	Green	Blue	Red
NLT1210-6R8□	6.8	7.9/7.9	28	45	0.370	1100	1000	5,10	Blue	Gray	Red
NLT1210-8R2□	8.2	7.9/7.9	28	45	0.470	940	900	5,10	Gray	Red	Red
NLT1210-100□	10	2.5/2.5	22	47	0.500	990	800	5,10	Brown	Black	Orange
NLT1210-120□	12	2.5/2.5	22	42	0.680	770	700	5,10	Brown	Red	Orange
NLT1210-150□	15	2.5/2.5	22	34	0.720	740	660	5,10	Brown	Green	Orange
NLT1210-180□	18	2.5/2.5	22	28	0.950	630	600	5,10	Brown	Gray	Orange
NLT1210-220□	22	2.5/2.5	22	25	1.100	640	550	5,10	Red	Red	Orange
NLT1210-270□	27	2.5/2.5	20	18	1.250	600	510	5,10	Red	Violet	Orange
NLT1210-330□	33	2.5/2.5	20	13	1.370	490	420	5,10	Orange	Orange	Orange
NLT1210-390□	39	2.5/2.5	20	13	1.850	400	400	5,10	Orange	White	Orange
NLT1210-470□	47	2.5/2.5	20	12	1.880	470	410	5,10	Yellow	Violet	Orange
NLT1210-560□	56	2.5/2.5	22	10	2.750	360	340	5,10	Green	Blue	Orange
NLT1210-680□	68	2.5/2.5	22	10	3.000	380	330	5,10	Blue	Gray	Orange
NLT1210-820□	82	2.5/2.5	22	10	4.100	300	280	5,10	Gray	Red	Orange
NLT1210-101□	100	1.0/1.0	15	8	4.682	310	260	5,10	Brown	Black	Yellow
NLT1210-121□	120	1.0/1.0	15	7	5.800	220	240	5,10	Brown	Red	Yellow
NLT1210-151□	150	1.0/1.0	13	7	6.102	260	230	5,10	Brown	Green	Yellow
NLT1210-181□	180	1.0/1.0	13	3	7.100	250	210	5,10	Brown	Gray	Yellow
NLT1210-221□	220	1.0/1.0	13	3	7.650	220	190	5,10	Red	Red	Yellow
NLT1210-271□	270	1.0/1.0	13	3	12.520	150	170	5,10	Red	Violet	Yellow

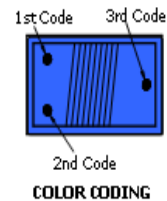
SMD Wire Wound Chip Inductors / NLT TYPE (For Power Line)

.Electrical Characteristics (NLT1210 TYPE)

Part No.	Inductance (uH)	L/Q Test (MHZ)	Q Min.	SRF (MHZ)Min.	DCR (Ω)Max.	Isat (mA) Max.	Irms (mA) Typ.	Tolerance (±%)	Color Code		
NLT1210-331□	330	1.0/1.0	13	3	12.62	170	160	5,10	Orange	Orange	Yellow
NLT1210-391□	390	1.0/1.0	13	3	23.00	120	140	5,10	Orange	White	Yellow
NLT1210-471□	470	1.0/1.0	13	3	25.00	135	130	5,10	Yellow	Violet	Yellow
NLT1210-501□	500	1.0/1.0	13	2	25.90	100	95	5,10	Green	Black	Yellow
NLT1210-561□	560	1.0/1.0	13	2	27.00	100	95	5,10	Green	Blue	Yellow
NLT1210-681□	680	1.0/1.0	13	2	31.00	100	95	5,10	Blue	Gray	Yellow
NLT1210-102□	1000	1.0/1.0	10	2	46.00	95	95	5,10	Brown	Black	Red

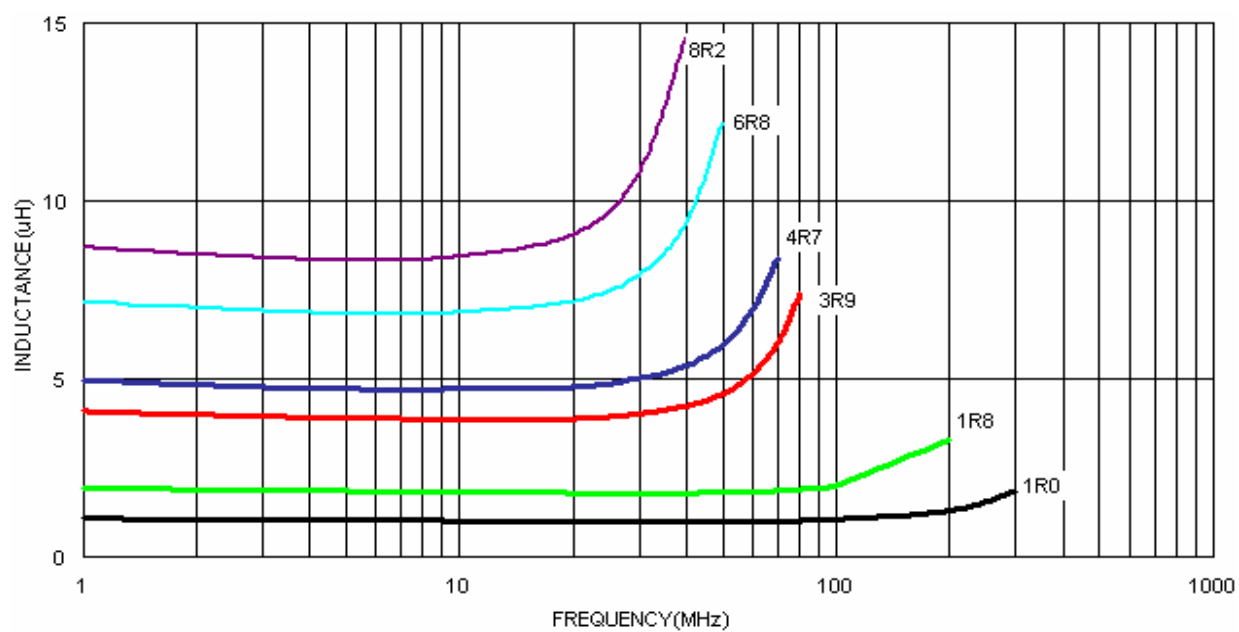
NOTE.

- When ordering, please specify tolerance and packaging codes.
Tolerance : J = ±5% , K = ±10%
Packaging : Clear tape and reel { standard }.
- L , Q : Agilent/HP E4991A+ Agilent/HP16197A
(The electrical specification test by the smallest gap position) or HP16193A
- SRF : Agilent/HP E4991A+ Agilent/HP 16197A
(The electrical specification test by the smallest gap position) or HP16193A
- Rdc : DIGITAL MILLIOHM METER Chroma 16502, or equivalent.
- Isat: Idc obtained when Inductance drop 35% from its value without current.
- Irms for 40°C rise from 25°C ambient.
- Operating temperature range from -25°C to 85°C.

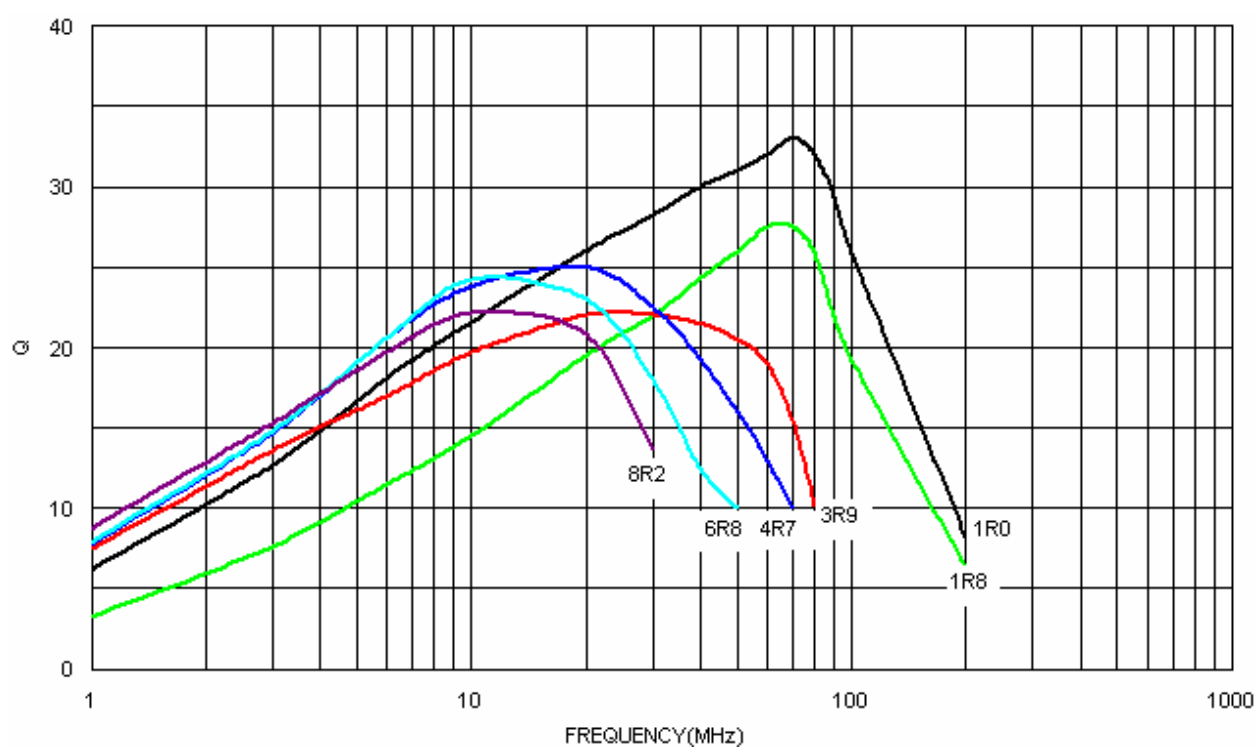


SMD Wire Wound Chip Inductors / NLT TYPE (For Power Line)

Inductance VS Frequency (NLT0603 Series)

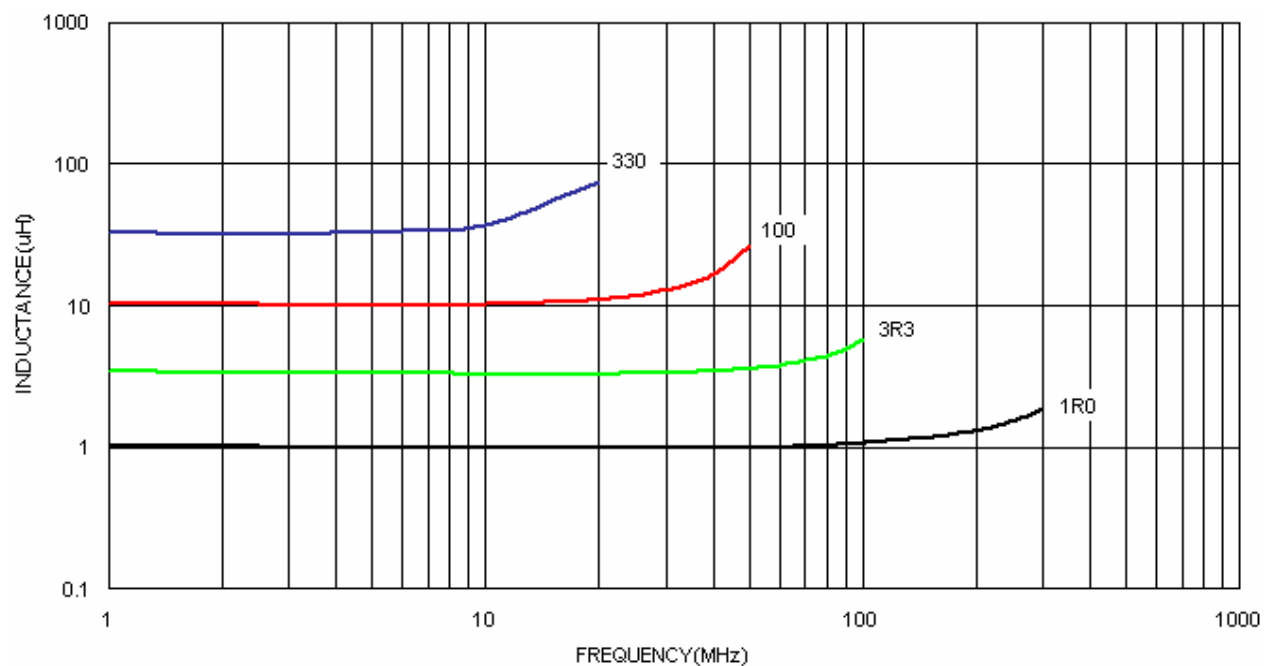


Q VS Frequency (NLT0603 Series)

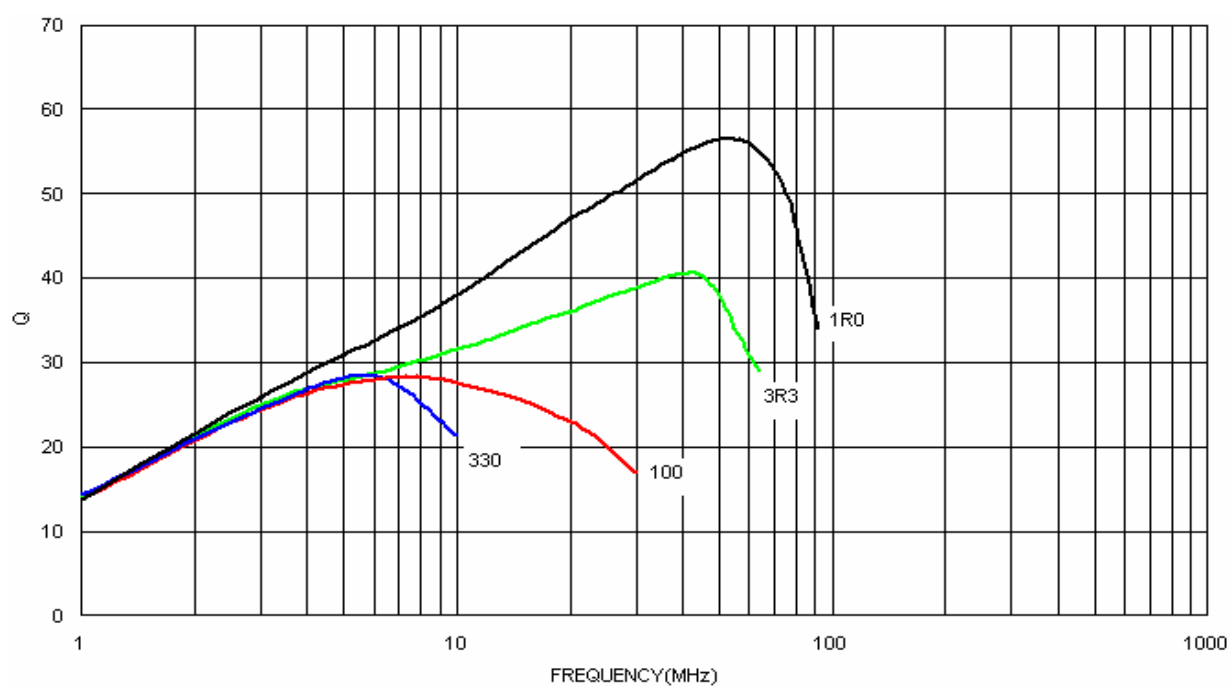


SMD Wire Wound Chip Inductors / NLT TYPE (For Power Line)

 . Inductance VS Frequency (NLT1008 Series)



 . Q VS Frequency (NLT1008 Series)



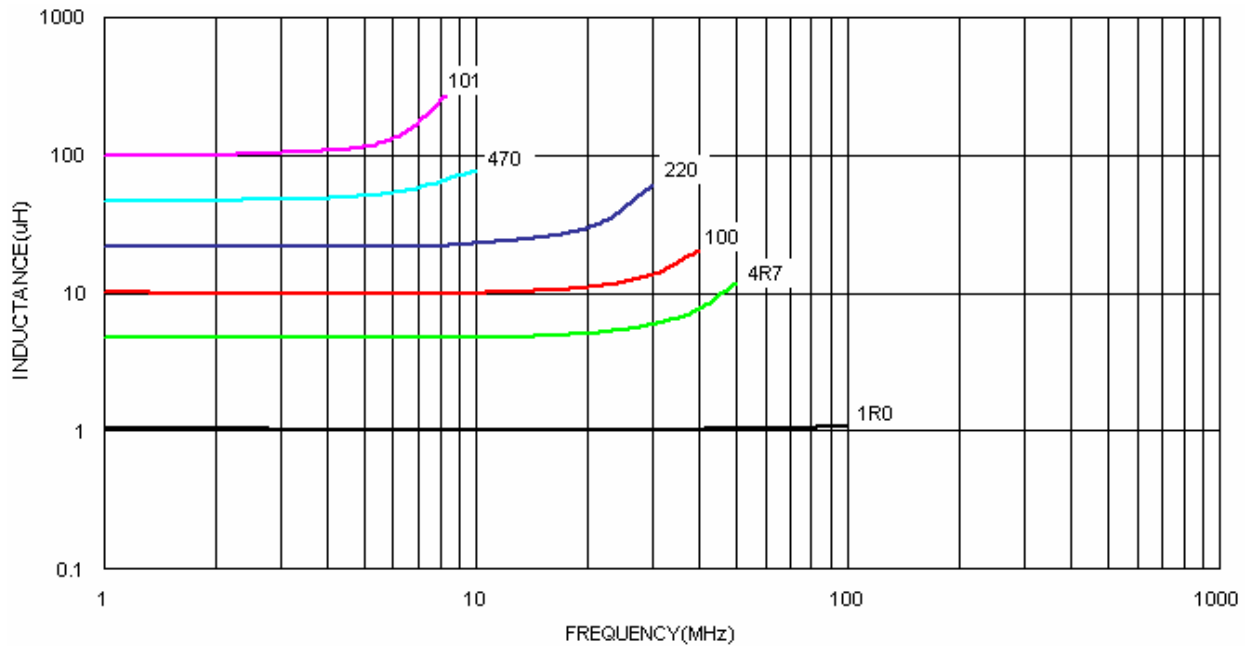


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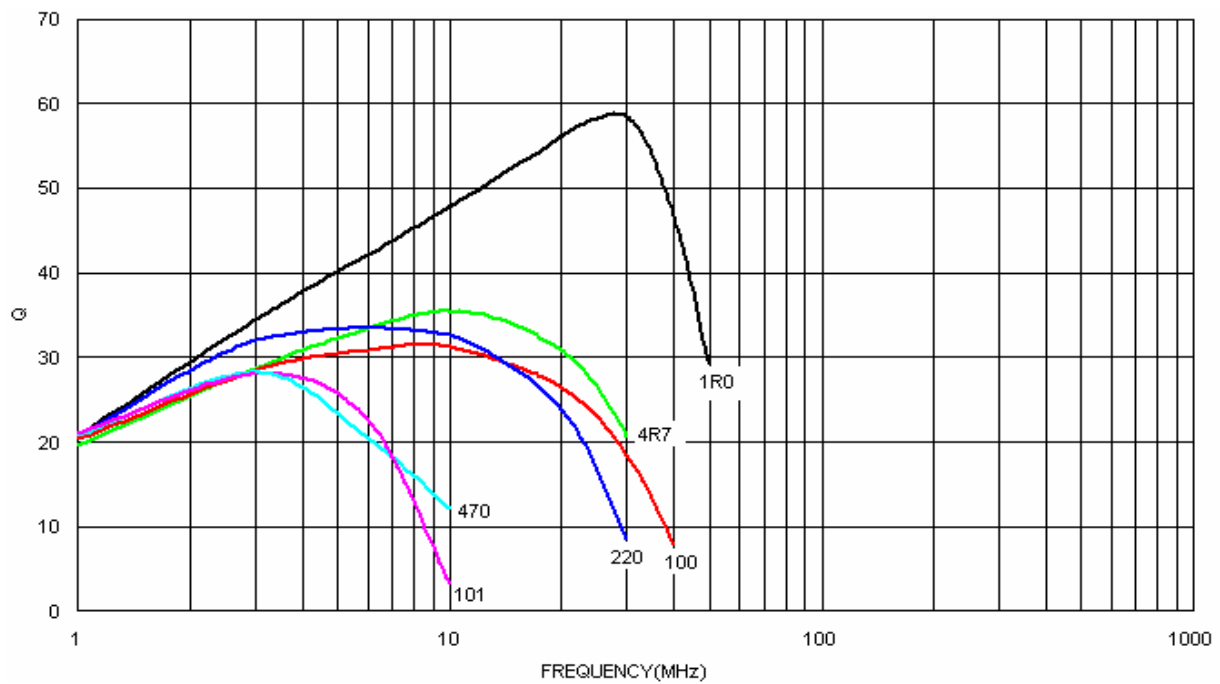


SMD Wire Wound Chip Inductors / NLT TYPE (For Power Line)

Inductance VS Frequency (NLT1210 Series)



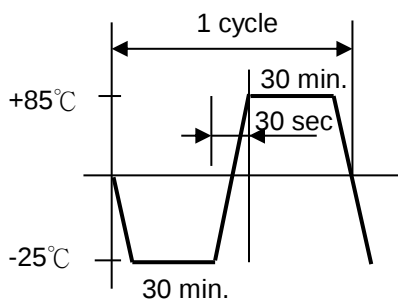
Q VS Frequency (NLT1210 Series)



SMD Wire Wound Chip Inductors / NLT TYPE (For Power Line)

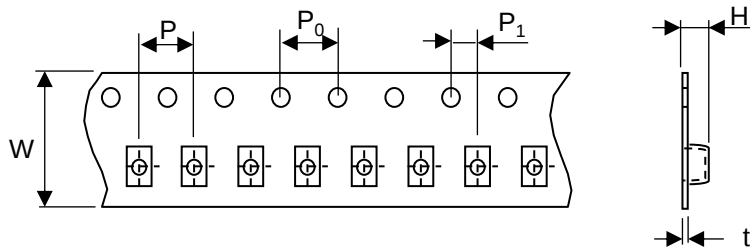
. Reliability and Test Conditions(可靠性測試條件)

Environmental Performance

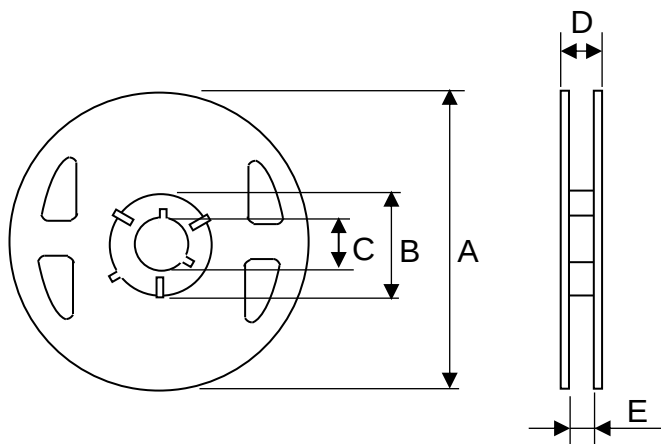
Item	Specification	Test Method
Solderability	The metalized area must have 90% minimum solder coverage.	Dip pads in flux and dip in solder pot(96.5 Sn/3.5 Ag solder) at 255° C ±5°C.
Resistance to soldering heat	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Inductors shall be reflowed onto a PC board using 96.5 Sn/3.5 Ag solder paste. Solder process shall be at a maximum temperature of 260°C. For 96.5 Sn/3.5 Ag solder paste:>217°C for 90 seconds
Vibration	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Solder specimen inductor on the test printed circuit board. Apply vibrations in each of the x,y and z directions for 2 hours for a total of 6 hours. Frequency : 10~50 Hz Amplitude : 1.5mm
High temperature resistance	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Inductors shall be subjected to temperature 85±2°C for 500±12 hours. Measure the test items after leaving the inductors at room temperature and humidity for 2 hours.
Static Humidity	Inductors must not have a shorted or open winding.	Inductors shall be subjected to temperature 85±2°C and 90 to 95%RH. for ten 24-hours. Measure the test items after leaving the inductors at room temperature and humidity for 2 hours.
Component adhesion(push test)	Inductors shall be subjected to 0.9Kg	Inductors shall be reflow soldered (255°C ±5°C for 10 seconds) to a tinned copper substrate. A force gauge shall be applied to the side of the component. The device must withstand the stated force without a failure of the termination.
Low temperature storage	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Inductors shall be subjected to temperature -25±2°C for 48±12 hours. Measure the test items after leaving the inductors at room temperature and humidity for 1 to 2 hours.
Resistance to solvent	There must be no case deformation, change in dimensions, or obliteration of marking.	Inductors must withstand 6 minutes of alcohol or water.
Thermal shock	There must be no case deformation or change in dimensions. Inductance must not change more than the stated tolerance.	Inductors shall be subjected to 10 cycles to the following temperature cycle:  Measure the test items after leaving the inductors at room temperature and humidity for 2 hours.

SMD Wire Wound Chip Inductors / NLT TYPE (For Power Line)

.Packing Specifications



TYPE	Packaging Quantity		Tape Dimension(mm)					
	Pcs / Reel	Inner box	W	P	P ₀	P ₁	H	T
NLT0603	4000	20000	8	4	4	2	NA	0.23
NLT1008	2000	10000	8	4	4	2	NA	0.23
NLT1210	2000	10000	8	4	4	2	NA	0.23



TYPE	Reel Dimension(mm)				
	A	B	C	D	E
NLT0603	180	60	13	14.4	8.4
NLT1008	180	60	13	14.4	8.4
NLT1210	180	60	13	14.4	8.4