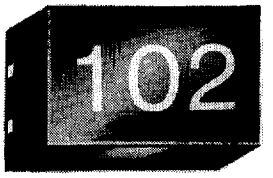
Molded Chip Wirewound Inductors

NIN Series

FEATURES



- EIA SIZES, A (1210), B (1812), C (1008) AND NEW D (0805)
- EXCELLENT HIGH Q AND HIGH SRF CHARACTERISTICS
- BOTH FLOW AND REFLOW SOLDERING APPLICABLE
- HIGH INDUCTANCE AVAILABLE IN SMALL SIZE
- SHIELDED TYPE AVAILABLE ON SIZE A (1210) AND C (1008)
- EMBOSSED PLASTIC TAPE PACKAGE FOR AUTOMATIC PICK-PLACE

AVAILABLE TYPE AND RANGE

EIA SIZE	SIZE CODE	SIZE (L x W x H mm)	NIC TYPE	INDUCTANCE RANGE	STYLE	PAGE
0805	D	2.0 x 1.25 x 1.25	NIN-FD	0.82 ~4.7 µH	Standard	168
			NIN-ND	8.2 nH ~ 1.0 µH	High Frequency	167
1008	C	2.5 x 2.0 x 1.6	NIN-FC	0.22 ~ 22 µH	Standard	170
			NIN-SC	27 ~ 100 µH	Shielded	171
			NIN-NC	10µH ~ 0.47 µH	High Frequency	169
			NIN-PC	1.0 ~ 33 µH	High Current	171
1210	A	3.2 x 2.5 x 2.2	NIN-FA	0.22 ~ 220 µH	Standard	173
			NIN-SA	10 ~ 270 µH	Shielded	174
			NIN-NA	47nH ~ 8.2 µH	High Frequency	172
			NIN-PA	1.0 ~ 330 µH	High Current	174
1812	B	4.5 x 3.2 x 3.2	NIN-FB	100 ~ 1000 µH	Standard	168

SPECIFICATIONS

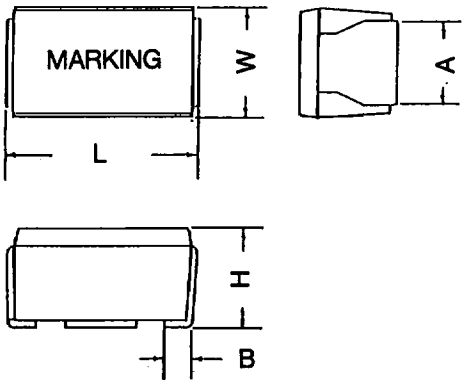
SIZES / SPECIFICATIONS	0805	1008	1210	1812
Inductance Range	8.2 nH ~ 4.7µH	10nH ~100µH	47nH ~ 270µH	100µH ~ 1000µH
Inductance Tolerances	± 10% (K), ± 5% (J)	± 20%(M), ±10%(K), ±5%(J)		± 10%(K), ±5%(J)
Operating Temperature Range	-40°C ~ +85°C			
Insulation Resistance	1,000 Megohm Min (@100Vdc, Termination to Case)			
Withstanding Voltage	250 Vdc for 1 minute (Termination to Case)			
Q-Factor, Self Resonant Frequency DC Resistance, Rated DC Current and Inductance Tolerance	See Individual Product Listings			

ENVIRONMENTAL CHARACTERISTICS

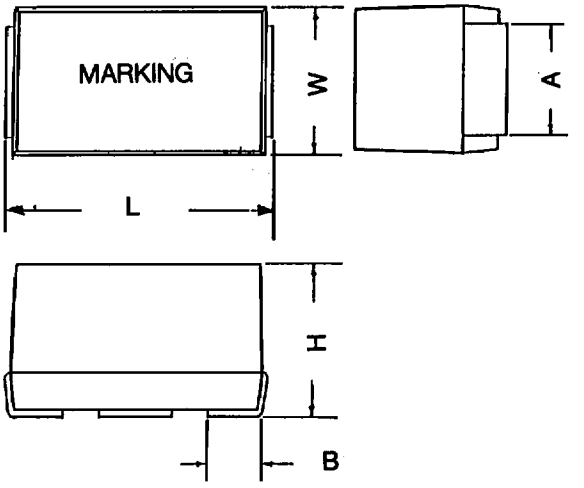
TEST	SPECIFICATION	TEST METHOD & CONDITION
Solderability	90% Min. Coverage	After 3 Sec. Dip in +230°C Solder Pot (Post Flux)
Humidity	(1) No Evidence of Damage	After 500 Hrs at 60°C and 90 - 95% RH
Soldering Effect	(2) Inductance Shall Be	After 5 Seconds at +260°C (5 Min. 120°C Pre-Heat)
Low Frequency Vibration	Within ±5% of Initial Value	After 2 Hrs per Axis, 10 ~55 Hz, 1.5 mm Ampl
Thermal Shock	(3) Q Factor Shall Be	After 100 Cycles (-40° to +85°C) 30 Min. Each
Low Temperature Storage	Within ±20% of Initial Value	After 500 Hrs at -40°C
High Temperature Load Life	(1) No Evidence of Damage (2) Inductance Shall Be	After 500 Hrs at +85°C with rated DC Current
Humidity Load Life	Within ±10% of Initial Value (3) Q Factor Shall Be Within ±20% of Initial Value	After 500 Hrs at 60°C with 90 - 95% RH with Rated DC Current

DIMENSIONS IN mm

SIZE A,C AND D



SIZE B



EIA SIZE	Size CODE	Dim. L	Dim. W	Dim. H	Dim. A	Dim. B
0805	D	$2.0^{+0.3}_{-0.2}$	1.25±0.3	1.25±0.3	1.0±0.1	0.4±0.2
1008	C	$2.5^{+0.3}_{-0.2}$	2.0±0.2	1.6±0.2	1.2±0.1	0.4±0.2
1210	A	3.2±0.3	2.5±0.2	2.2±0.2	1.9±0.1	0.6±0.2
1812	B	4.5±0.3	3.2±0.2	3.2±0.2	2.0±0.2	0.6±0.2

PART MARKING:

Inductance Tolerance	Marking for Tolerance	Example
±20%	M	2R2M
±10%	No Identification	470
±5%	J	270J

(1) 3 digits system in μH

(2) R indicates decimal point in μH Ex:2R7 = 2.7μH

(3) N indicates nanohenries (0.001 μH), Ex:10N= 0.01 μH

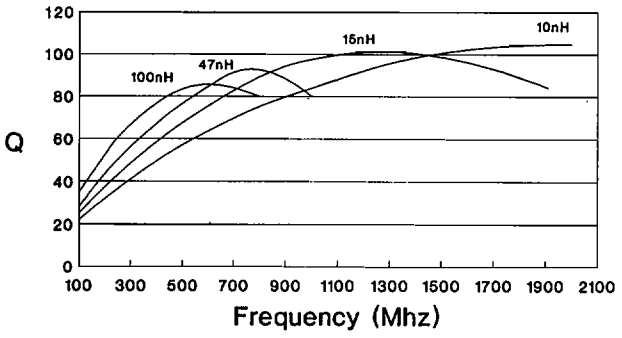
APPLICATION GUIDELINES:

1. Recommended soldering conditions : Flow (wave): 250°C for 5 seconds max. following a preheating of 120°C for 5 minutes.
   Reflow: 230°C for 10 seconds max. (preheating is also recommended)
2. It is recommended to use NIN inductors below 70% of the specified DC current when it shall be operated at or near the maximum operating temperature.
3. Avoid placing inductor over any metal pattern on the PCB, which may create mutual inductance problems.
4. For mounting, it is suggested to secure chip inductor by means of epoxy adhesive curable by ultraviolet.
5. Ultrasonic cleaning is not recommended. If it is necessary, the cleaning conditions must be examined so as not to create mechanical damage by unexpected resonant vibration. Please contact our engineering department.
6. An excessive mechanical force may effect the electrical and magnetic properties of chip inductors. Make sure not to use any stress greater than 2Kg when component is placed.

PART NUMBERING SYSTEM: NIN-FA R47 M TR

- TR: PACKAGING: TR = TAPE & REEL, B = BULK
- M: INDUCTANCE TOLERANCE CODE: M = ±20%, K = ±10%, J = ±5%
- R47: RATED INDUCTANCE IN μH (3 DIGITS, FIRST 2 NUMBERS ARE SIGNIFICANT, R STANDS FOR DECIMAL POINT)
- NIN-FA: SERIES-TYPE

Q vs Frequency
NIN-ND Series (0805 Size)
HIGH FREQUENCY TYPE



NIN-ND Series **D SIZE (0805)** **High Frequency Type**

NIC P/N	'L' Inductance (nH)	Tolerance (std)	Tolerance (opt)	'Q' Factor (min.)	L & Q Test Freq.	SRF Mhz (min.)	DC Resistance (ohms) Max.	Rated DC Current (mA) Max.
NIN-ND8N2KTR	8.2	± 10% (K)	—	8	100 Mhz	2500	0.13	540
NIN-ND10NKTR	10	± 10% (K)	—	12	100 Mhz	2500	0.15	540
NIN-ND12NKTR	12	± 10% (K)	—	12	100 Mhz	2500	0.20	535
NIN-ND15NKTR	15	± 10% (K)	—	15	100 Mhz	2500	0.20	535
NIN-ND18NKTR	18	± 10% (K)	—	15	100 Mhz	2000	0.24	510
NIN-ND22NKTR	22	± 10% (K)	—	15	100 Mhz	2000	0.24	495
NIN-ND27NKTR	27	± 10% (K)	—	18	100 Mhz	1800	0.29	460
NIN-ND33NxTR	33	± 10% (K)	± 5% (J)	18	100 Mhz	1500	0.28	430
NIN-ND39NxTR	39	± 10% (K)	± 5% (J)	18	100 Mhz	1500	0.33	410
NIN-ND47NxTR	47	± 10% (K)	± 5% (J)	18	100 Mhz	1000	0.38	390
NIN-ND56NxTR	56	± 10% (K)	± 5% (J)	18	100 Mhz	1000	0.43	380
NIN-ND68NxTR	68	± 10% (K)	± 5% (J)	18	100 Mhz	800	0.45	370
NIN-ND82NxTR	82	± 10% (K)	± 5% (J)	18	100 Mhz	800	0.53	350
NIN-NDR10xTR	100	± 10% (K)	± 5% (J)	10	25.2 Mhz	800	0.58	300
NIN-NDR12xTR	120	± 10% (K)	± 5% (J)	10	25.2 Mhz	600	0.74	280
NIN-NDR15xTR	150	± 10% (K)	± 5% (J)	10	25.2 Mhz	600	1.12	235
NIN-NDR18xTR	180	± 10% (K)	± 5% (J)	10	25.2 Mhz	600	1.23	210
NIN-NDR22xTR	220	± 10% (K)	± 5% (J)	10	25.2 Mhz	500	1.41	200
NIN-NDR33xTR	330	± 10% (K)	± 5% (J)	10	25.2 Mhz	200	1.67	185
NIN-NDR39xTR	390	± 10% (K)	± 5% (J)	10	25.2 Mhz	150	1.74	175
NIN-NDR47xTR	470	± 10% (K)	± 5% (J)	10	25.2 Mhz	150	1.97	165
NIN-NDR56xTR	560	± 10% (K)	± 5% (J)	10	25.2 Mhz	100	2.07	150
NIN-NDR68xTR	680	± 10% (K)	± 5% (J)	10	25.2 Mhz	100	2.32	150
NIN-NDR82xTR	820	± 10% (K)	± 5% (J)	10	25.2 Mhz	80	2.60	140
NIN-ND1R0xTR	1000	± 10% (K)	± 5% (J)	8	7.96 Mhz	80	2.98	130

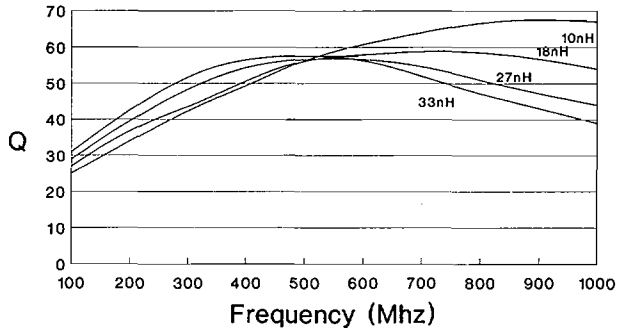
NIN-FD Series **D Size (0805)** **Standard Type**

NIC P/N	'L' Inductance (uH)	Tolerance (std)	Tolerance (opt)	'Q' Factor (min.)	L & Q Test Freq.	SRF Mhz (min.)	DC Resistance (ohms) Max.	Rated DC Current (mA) Max.
NIN-FDR82KTR	0.82	± 10%	—	8	25.2 Mhz	370	1.36	190
NIN-FD1R0KTR	1.0	± 10%	—	15	7.96 Mhz	300	1.56	160
NIN-FD1R2KTR	1.2	± 10%	—	15	7.96 Mhz	200	1.60	155
NIN-FD1R5KTR	1.5	± 10%	—	15	7.96 Mhz	100	1.85	155
NIN-FD1R8KTR	1.8	± 10%	—	15	7.96 Mhz	80	1.95	145
NIN-FD2R2KTR	2.2	± 10%	—	15	7.96 Mhz	70	2.27	145
NIN-FD2R7KTR	2.7	± 10%	—	15	7.96 Mhz	60	2.53	140
NIN-FD3R3KTR	3.3	± 10%	—	15	7.96 Mhz	50	2.84	140
NIN-FD3R9KTR	3.9	± 10%	—	15	7.96 Mhz	40	2.92	130
NIN-FD4R7KTR	4.7	± 10%	—	15	7.96 Mhz	40	3.38	120

NIN-FB Series **B Size (1812)** **Standard Type**

NIC P/N	'L' Inductance (uH)	Tolerance (std)	Tolerance (opt)	'Q' Factor (min.)	L & Q Test Freq.	SRF Mhz (min.)	DC Resistance (ohms) Max.	Rated DC Current (mA) Max.
NIN-FB101xTR	100	± 10%(K)	± 5%(J)	40	2.52 Mhz	6.7	8.8	105
NIN-FB121xTR	120	± 10%(K)	± 5%(J)	40	1.5 Mhz	6.1	10	100
NIN-FB151xTR	150	± 10%(K)	± 5%(J)	40	1.5 Mhz	5.5	11	95
NIN-FB181xTR	180	± 10%(K)	± 5%(J)	40	1.5 Mhz	5.1	13	85
NIN-FB221xTR	220	± 10%(K)	± 5%(J)	40	0.796 Mhz	4.5	13	85
NIN-FB271xTR	270	± 10%(K)	± 5%(J)	40	0.796 Mhz	4.1	14	80
NIN-FB331xTR	330	± 10%(K)	± 5%(J)	40	0.796 Mhz	3.7	16	75
NIN-FB391xTR	390	± 10%(K)	± 5%(J)	40	0.796 Mhz	3.3	19	70
NIN-FB471xTR	470	± 10%(K)	± 5%(J)	30	0.796 Mhz	3.3	31	55
NIN-FB561xTR	560	± 10%(K)	± 5%(J)	30	0.796 Mhz	2.7	35	50
NIN-FB681xTR	680	± 10%(K)	± 5%(J)	30	0.796 Mhz	2.5	39	50
NIN-FB821xTR	820	± 10%(K)	± 5%(J)	30	0.796 Mhz	2.4	45	45
NIN-FB102xTR	1000	± 10%(K)	± 5%(J)	30	0.796 Mhz	2.1	53	40

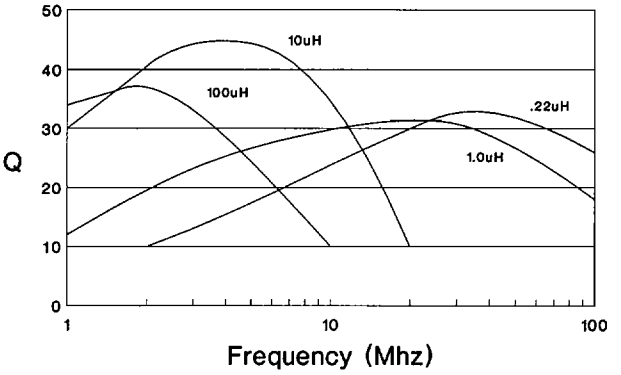
Q vs Frequency
NIN-NC Series (1008 size)
High Frequency Type



NIN-NC Series C Size (1008) High Frequency Type

NIC P/N	'L' Inductance (nH)	Tolerance (std)	Tolerance (opt)	'Q' Factor (min.)	L & Q Test Freq.	SRF Mhz (min.)	DC Resistance (ohms) Max.	Rated DC Current (mA) Max.
NIN-NC10NKTR	10	± 10% (K)	—	10	100 Mhz	2500	0.32	280
NIN-NC12NKTR	12	± 10% (K)	—	10	100 Mhz	2200	0.34	270
NIN-NC15NKTR	15	± 10% (K)	—	10	100 Mhz	1800	0.38	255
NIN-NC18NKTR	18	± 10% (K)	—	10	100 Mhz	1550	0.40	250
NIN-NC22NKTR	22	± 10% (K)	—	15	100 Mhz	1350	0.43	240
NIN-NC27NKTR	27	± 10% (K)	—	15	100 Mhz	1150	0.47	230
NIN-NC33NxTR	33	± 10% (K)	± 5% (J)	15	100 Mhz	1000	0.51	220
NIN-NC39NxTR	39	± 10% (K)	± 5% (J)	15	100 Mhz	890	0.55	215
NIN-NC47NxTR	47	± 10% (K)	± 5% (J)	15	100 Mhz	770	0.59	205
NIN-NC56NxTR	56	± 10% (K)	± 5% (J)	15	100 Mhz	670	0.63	200
NIN-NC68NxTR	68	± 10% (K)	± 5% (J)	15	100 Mhz	590	0.68	190
NIN-NC82NxTR	82	± 10% (K)	± 5% (J)	15	100 Mhz	520	0.73	185
NIN-NCR10xTR	100	± 10% (K)	± 5% (J)	10	25.2 Mhz	460	0.80	175
NIN-NCR12xTR	120	± 10% (K)	± 5% (J)	10	25.2 Mhz	400	0.87	170
NIN-NCR15xTR	150	± 10% (K)	± 5% (J)	10	25.2 Mhz	340	0.98	160
NIN-NCR18xTR	180	± 10% (K)	± 5% (J)	10	25.2 Mhz	300	1.05	155
NIN-NCR22xTR	220	± 10% (K)	± 5% (J)	10	25.2 Mhz	260	1.15	145
NIN-NCR27xTR	270	± 10% (K)	± 5% (J)	10	25.2 Mhz	230	1.25	140
NIN-NCR33xTR	330	± 10% (K)	± 5% (J)	10	25.2 Mhz	200	1.37	135
NIN-NCR39xTR	390	± 10% (K)	± 5% (J)	10	25.2 Mhz	180	1.47	130
NIN-NCR47xTR	470	± 10% (K)	± 5% (J)	10	25.2 Mhz	160	1.58	125
NIN-NCR56xTR	560	± 10% (K)	± 5% (J)	10	25.2 Mhz	145	1.70	120
NIN-NCR68xTR	680	± 10% (K)	± 5% (J)	10	25.2 Mhz	130	1.85	110
NIN-NCR82xTR	820	± 10% (K)	± 5% (J)	10	25.2 Mhz	90	2.10	100

Q vs Frequency
NIN-FC Series (1008 size)



NIN-FC Series **C Size (1008)** **Standard Type**

NIC P/N	'L' Inductance (uH)	Tolerance (std)	Tolerance (opt)	'Q' Factor (min.)	L & Q Test Freq.	SRF Mhz (min.)	DC Resistance (ohms) Max.	Rated DC Current (mA) Max.
NIN-FC R22xTR	0.22	± 20% (M)	± 10% (K)	25	2.52 Mhz	230	0.70	190
NIN-FC R27xTR	0.27	± 20% (M)	± 10% (K)	25	2.52 Mhz	210	0.75	180
NIN-FC R33xTR	0.33	± 20% (M)	± 10% (K)	25	2.52 Mhz	190	0.85	170
NIN-FC R39xTR	0.39	± 20% (M)	± 10% (K)	25	2.52 Mhz	175	0.95	160
NIN-FC R47xTR	0.47	± 20% (M)	± 10% (K)	25	2.52 Mhz	160	1.00	155
NIN-FC R56xTR	0.56	± 20% (M)	± 10% (K)	25	2.52 Mhz	150	1.10	150
NIN-FC R68xTR	0.68	± 20% (M)	± 10% (K)	25	2.52 Mhz	135	1.25	140
NIN-FC R82xTR	0.82	± 20% (M)	± 10% (K)	25	2.52 Mhz	125	1.4	130
NIN-FC1R0 xTR	1.0	± 20% (M)	± 10% (K)	25	7.96 Mhz	115	0.65	195
NIN-FC1R2 xTR	1.2	± 20% (M)	± 10% (K)	25	7.96 Mhz	100	0.75	180
NIN-FC1R5 xTR	1.5	± 20% (M)	± 10% (K)	25	7.96 Mhz	90	0.85	170
NIN-FC1R8 xTR	1.8	± 20% (M)	± 10% (K)	25	7.96 Mhz	85	0.95	160
NIN-FC2R2 xTR	2.2	± 20% (M)	± 10% (K)	25	7.96 Mhz	80	1.05	155
NIN-FC2R7 xTR	2.7	± 20% (M)	± 10% (K)	25	7.96 Mhz	75	1.20	145
NIN-FC3R3 xTR	3.3	± 20% (M)	± 10% (K)	25	7.96 Mhz	65	1.30	135
NIN-FC3R9 xTR	3.9	± 20% (M)	± 10% (K)	25	7.96 Mhz	60	1.40	130
NIN-FC4R7 xTR	4.7	± 20% (M)	± 10% (K)	25	7.96 Mhz	55	1.55	125
NIN-FC5R6 xTR	5.6	± 20% (M)	± 10% (K)	25	7.96 Mhz	50	1.75	120
NIN-FC6R8 xTR	6.8	± 20% (M)	± 10% (K)	25	7.96 Mhz	45	1.95	115
NIN-FC8R2 xTR	8.2	± 20% (M)	± 10% (K)	25	7.96 Mhz	40	2.2	105
NIN-FC100 xTR	10	± 10% (K)	± 5% (J)	25	2.52 Mhz	32	3.7	80
NIN-FC120 xTR	12	± 10% (K)	± 5% (J)	25	2.52 Mhz	30	4.1	75
NIN-FC150 xTR	15	± 10% (K)	± 5% (J)	25	2.52 Mhz	28	5.0	70
NIN-FC180 xTR	18	± 10% (K)	± 5% (J)	25	2.52 Mhz	25	5.4	65
NIN-FC220 xTR	22	± 10% (K)	± 5% (J)	25	2.52 Mhz	22	6.0	60
NIN-FC270 xTR	27	± 10% (K)	± 5% (J)	20	2.52 Mhz	21	6.3	115
NIN-FC330 xTR	33	± 10% (K)	± 5% (J)	20	2.52 Mhz	20	7.1	110
NIN-FC390 xTR	39	± 10% (K)	± 5% (J)	20	2.52 Mhz	18	9.5	90
NIN-FC470 xTR	47	± 10% (K)	± 5% (J)	20	2.52 Mhz	17	11.0	80
NIN-FC560 xTR	56	± 10% (K)	± 5% (J)	20	2.52 Mhz	16	12.1	75
NIN-FC680 xTR	68	± 10% (K)	± 5% (J)	20	2.52 Mhz	15	16.6	70
NIN-FC820 xTR	82	± 10% (K)	± 5% (J)	20	2.52 Mhz	13	19.0	65
NIN-FC101 xTR	100	± 10% (K)	± 5% (J)	20	0.796 Mhz	12	21.0	60

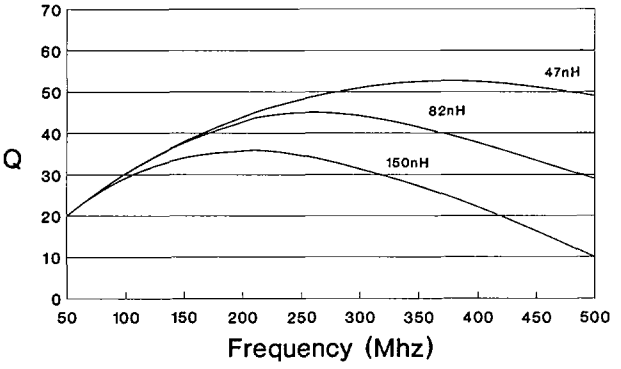
NIN-PC Series C Size (1008) High Current Type

NIC P/N	'L' Inductance (uH)	Tolerance (std)	Tolerance (opt)	'Q' Factor (min.)	L & Q Test Freq.	SRF Mhz (min.)	DC Resistance (ohms) Max.	Rated DC Current (mA) Max.
NIN-PC1R0MTR	1.0	± 20%	—	10	7.96 mhz	95	0.45	475
NIN-PC1R5MTR	1.5	± 20%	—	10	7.96 mhz	85	0.55	435
NIN-PC2R2MTR	2.2	± 20%	—	10	7.96 mhz	65	0.65	390
NIN-PC3R3MTR	3.3	± 20%	—	8	7.96 mhz	55	0.85	340
NIN-PC4R7MTR	4.7	± 20%	—	8	7.96 mhz	43	1.2	285
NIN-PC6R8KTR	6.8	± 10%	—	8	7.96 mhz	39	1.3	275
NIN-PC100KTR	10	± 10%	—	20	2.52 mhz	32	2.2	210
NIN-PC120KTR	12	± 10%	—	20	2.52 mhz	25	2.7	195
NIN-PC150KTR	15	± 10%	—	20	2.52 mhz	21	3.2	175
NIN-PC220KTR	22	± 10%	—	20	2.52 mhz	18	4.0	160
NIN-PC330KTR	33	± 10%	—	20	2.52 mhz	16	6.5	120

NIN-SC Series C Size (1008) Shielded Type

NIC P/N	'L' Inductance (uH)	Tolerance (std)	Tolerance (opt)	'Q' Factor (min.)	L & Q Test Freq.	SRF Mhz (min.)	DC Resistance (ohms) Max.	Rated DC Current (mA) Max.
NIN-SC270KTR	27	± 10%	—	40	2.52 mhz	20	4.5	18
NIN-SC330KTR	33	± 10%	—	40	2.52 mhz	18	5.2	14
NIN-SC390KTR	39	± 10%	—	40	2.52 mhz	15	5.7	13
NIN-SC470KTR	47	± 10%	—	40	2.52 mhz	14	6.6	12
NIN-SC560KTR	56	± 10%	—	40	2.52 mhz	13	7.1	10
NIN-SC680KTR	68	± 10%	—	25	2.52 mhz	13	6.5	17
NIN-SC820KTR	82	± 10%	—	25	2.52 mhz	13	7.4	14
NIN-SC101KTR	100	± 10%	—	25	0.796 mhz	12	8.4	10

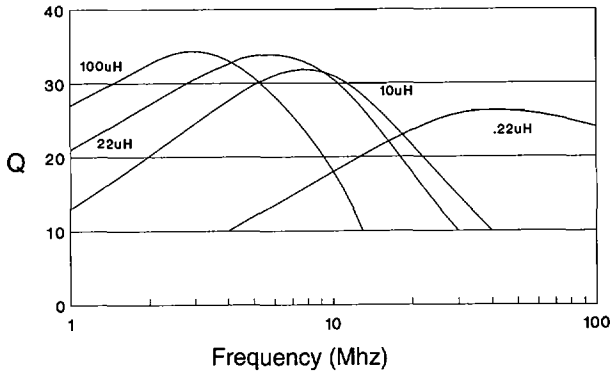
Q vs Frequency
NIN-NA Series (1210 Size)



NIN-NA Series **A Size (1210)** **High Frequency**

NIC P/N	'L' Inductance (uH)	Tolerance (std)	Tolerance (opt)	'Q' Factor (min.)	L & Q Test Freq.	SRF Mhz (min.)	DC Resistance (ohms) Max.	Rated DC Current (mA) Max.
NIN-NA47NxTR	0.047	± 20% (M)	± 10% (K)	10	100 Mhz	680	0.20	450
NIN-NA56NxTR	0.056	± 20% (M)	± 10% (K)	10	100 Mhz	600	0.22	420
NIN-NA68NxTR	0.068	± 20% (M)	± 10% (K)	10	100 Mhz	540	0.25	400
NIN-NA82NxTR	0.082	± 20% (M)	± 10% (K)	10	100 Mhz	500	0.27	380
NIN-NAR10xTR	0.10	± 20% (M)	± 10% (K)	10	100 Mhz	450	0.30	360
NIN-NAR12xTR	0.12	± 20% (M)	± 10% (K)	10	25.2 Mhz	400	0.67	240
NIN-NAR15xTR	0.15	± 20% (M)	± 10% (K)	10	25.2 Mhz	350	0.72	230
NIN-NAR18xTR	0.18	± 20% (M)	± 10% (K)	10	25.2 Mhz	320	0.81	220
NIN-NAR22xTR	0.22	± 10% (K)	± 5% (J)	10	25.2 Mhz	280	0.90	210
NIN-NAR27xTR	0.27	± 10% (K)	± 5% (J)	10	25.2 Mhz	250	1.0	200
NIN-NAR33xTR	0.33	± 10% (K)	± 5% (J)	10	25.2 Mhz	220	1.1	190
NIN-NAR39xTR	0.39	± 10% (K)	± 5% (J)	10	25.2 Mhz	200	1.2	180
NIN-NAR47xTR	0.47	± 10% (K	± 5% (J)	10	25.2 Mhz	180	1.4	175
NIN-NAR56xTR	0.56	± 10% (K)	± 5% (J)	10	25.2 Mhz	160	1.5	170
NIN-NAR68xTR	0.68	± 10% (K)	± 5% (J)	10	25.2 Mhz	150	1.7	155
NIN-NAR82xTR	0.82	± 10% (K)	± 5% (J)	10	25.2 Mhz	135	1.9	145
NIN-NA1R0JTR	1.0	± 5% (J)	—	13	7.96 Mhz	120	2.1	125
NIN-NA1R0JTR	1.2	± 5% (J)	—	13	7.96 Mhz	110	2.3	120
NIN-NA1R5JTR	1.5	± 5% (J)	—	13	7.96 Mhz	95	2.7	115
NIN-NA1R8JTR	1.8	± 5% (J)	—	13	7.96 Mhz	85	3.0	110
NIN-NA2R2JTR	2.2	± 5% (J)	—	13	7.96 Mhz	80	3.2	110
NIN-NA2R7JTR	2.7	± 5% (J)	—	13	7.96 Mhz	70	3.6	105
NIN-NA3R3JTR	3.3	± 5% (J)	—	13	7.96 Mhz	62	4.2	100
NIN-NA3R9JTR	3.9	± 5% (J)	—	13	7.96 Mhz	57	4.4	95
NIN-NA4R7JTR	4.7	± 5% (J)	—	13	7.96 Mhz	52	7.7	70
NIN-NA5R6JTR	5.6	± 5% (J)	—	13	7.96 Mhz	46	8.7	65
NIN-NA6R8JTR	6.8	± 5% (J)	—	13	7.96 Mhz	42	10	60
NIN-NA8R2JTR	8.2	± 5% (J)	—	13	7.96 Mhz	38	11	60

Q vs Frequency
NIN-FA Series (1210 Size)



NIN-FA Series A Size (1210) Standard Type

NIC P/N	'L' Inductance (uH)	Tolerance (std)	Tolerance (opt)	'Q' Factor (min.)	L & Q Test Freq.	SRF Mhz (min.)	DC Resistance (ohms) Max.	Rated DC Current (mA) Max.
NIN-FAR22 xTR	0.22	± 20% (M)	± 10% (K)	25	25.2 Mhz	230	0.29	360
NIN-FAR27 xTR	0.27	± 20% (M)	± 10% (K)	25	25.2 Mhz	210	0.32	345
NIN-FAR33 xTR	0.33	± 20% (M)	± 10% (K)	25	25.2 Mhz	190	0.35	330
NIN-FAR39 xTR	0.39	± 20% (M)	± 10% (K)	25	25.2 Mhz	175	0.39	305
NIN-FAR47 xTR	0.47	± 20% (M)	± 10% (K)	25	25.2 Mhz	160	0.44	290
NIN-FAR56 xTR	0.56	± 20% (M)	± 10% (K)	25	25.2 Mhz	150	0.49	275
NIN-FAR68 xTR	0.68	± 20% (M)	± 10% (K)	25	25.2 Mhz	135	0.55	260
NIN-FAR82 xTR	0.82	± 20% (M)	± 10% (K)	25	25.2 Mhz	125	0.61	245
NIN-FA1R0 xTR	1.0	± 20% (M)	± 10% (K)*	30	7.96 Mhz	115	0.69	230
NIN-FA1R2 xTR	1.2	± 20% (M)	± 10% (K)*	30	7.96 Mhz	100	0.75	215
NIN-FA1R5 xTR	1.5	± 20% (M)	± 10% (K)*	30	7.96 Mhz	90	0.75	210
NIN-FA1R8 xTR	1.8	± 20% (M)	± 10% (K)*	30	7.96 Mhz	85	0.82	200
NIN-FA2R2 xTR	2.2	± 20% (M)	± 10% (K)*	30	7.96 Mhz	80	0.95	190
NIN-FA2R7 xTR	2.7	± 20% (M)	± 10% (K)*	30	7.96 Mhz	75	1.1	180
NIN-FA3R3 xTR	3.3	± 20% (M)	± 10% (K)*	30	7.96 Mhz	65	1.2	180
NIN-FA3R9 xTR	3.9	± 20% (M)	± 10% (K)*	30	7.96 Mhz	60	1.3	175
NIN-FA4R7 xTR	4.7	± 20% (M)	± 10% (K)*	30	7.96 Mhz	55	1.5	165
NIN-FA5R6 xTR	5.6	± 20% (M)	± 10% (K)*	30	7.96 Mhz	50	1.6	160
NIN-FA6R8 xTR	6.8	± 20% (M)	± 10% (K)*	30	7.96 Mhz	45	1.8	150
NIN-FA8R2 xTR	8.2	± 20% (M)	± 5% (J)	30	2.52 Mhz	40	2.0	140
NIN-FA100 xTR	10	± 10% (K)	± 5% (J)	30	2.52 Mhz	36	2.1	140
NIN-FA120 xTR	12	± 10% (K)	± 5% (J)	30	2.52 Mhz	33	2.5	125
NIN-FA150 xTR	15	± 10% (K)	± 5% (J)	30	2.52 Mhz	30	2.8	120
NIN-FA180 xTR	18	± 10% (K)	± 5% (J)	30	2.52 Mhz	27	3.3	110
NIN-FA220 xTR	22	± 10% (K)	± 5% (J)	30	2.52 Mhz	25	3.7	105
NIN-FA270 xTR	27	± 10% (K)	± 5% (J)	30	2.52 Mhz	22	5.0	90
NIN-FA330 xTR	33	± 10% (K)	± 5% (J)	30	2.52 Mhz	20	5.6	85
NIN-FA390 xTR	39	± 10% (K)	± 5% (J)	30	2.52 Mhz	20	6.4	80
NIN-FA470 xTR	47	± 10% (K)	± 5% (J)	30	2.52 Mhz	15	7.0	75
NIN-FA560 xTR	56	± 10% (K)	± 5% (J)	30	2.52 Mhz	15	8.0	70
NIN-FA680 xTR	68	± 10% (K)	± 5% (J)	30	2.52 Mhz	15	9.0	65
NIN-FA820 xTR	82	± 10% (K)	± 5% (J)	30	2.52 Mhz	11	10	60
NIN-FA101 xTR	100	± 10% (K)	± 5% (J)	20	0.79 Mhz	10	10	60
NIN-FA121 xTR	120	± 10% (K)	± 5% (J)	20	0.79 Mhz	10	11	55
NIN-FA151 xTR	150	± 10% (K)	± 5% (J)	20	0.79 Mhz	8	15	50
NIN-FA181 xTR	180	± 10% (K)	± 5% (J)	20	0.79 Mhz	7	17	50
NIN-FA221 xTR	220	± 10% (K)	± 5% (J)	20	0.79 Mhz	7	21	45

* ± 5% (J) Tolerance Available On Special Order

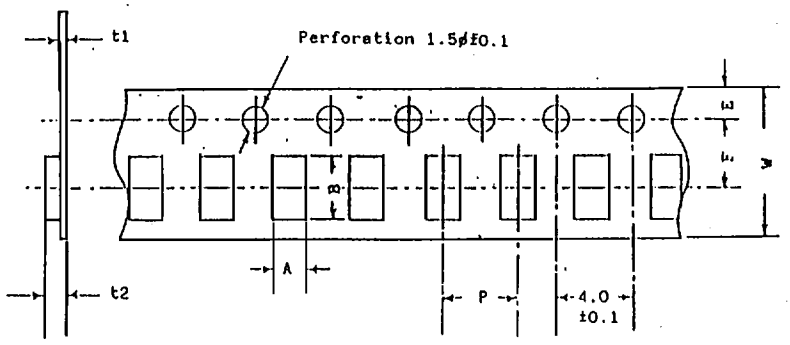
NIN-PA Series A Size (1210) High Current Type

NIC P/N	'L' Inductance (uH)	Tolerance (std)	Tolerance (opt)	'Q' Factor (min.)	L & Q Test Freq.	SRF Mhz (min.)	DC Resistance (ohms) Max.	Rated DC Current (mA) Max.
NIN-PA1R0MTR	1.0	± 20% (M)	—	7	7.96 Mhz	150	0.15	600
NIN-PA1R5MTR	1.5	± 20% (M)	—	7	7.96 Mhz	110	0.18	550
NIN-PA2R2MTR	2.2	± 20% (M)	—	7	7.96 Mhz	80	0.23	500
NIN-PA3R3MTR	3.3	± 20% (M)	—	7	7.96 Mhz	58	0.28	400
NIN-PA4R7MTR	4.7	± 20% (M)	—	7	7.96 Mhz	46	0.34	350
NIN-PA6R8MTR	6.8	± 20% (M)	—	7	7.96 Mhz	38	0.42	300
NIN-PA100KTR	10	± 10% (K)	—	15	2.52 Mhz	23	0.50	240
NIN-PA120KTR	12	± 10% (K)	—	15	2.52 Mhz	21	0.60	230
NIN-PA150KTR	15	± 10% (K)	—	15	2.52 Mhz	18	0.74	220
NIN-PA180KTR	18	± 10% (K)	—	15	2.52 Mhz	17	0.90	205
NIN-PA220KTR	22	± 10% (K)	—	15	2.52 Mhz	15	1.15	185
NIN-PA270KTR	27	± 10% (K)	—	15	2.52 Mhz	13	1.45	165
NIN-PA330KTR	33	± 10% (K)	—	15	2.52 Mhz	12	1.65	155
NIN-PA390KTR	39	± 10% (K)	—	15	2.52 Mhz	11	1.90	145
NIN-PA470KTR	47	± 10% (K)	—	15	2.52 Mhz	9.5	2.25	135
NIN-PA560KTR	56	± 10% (K)	—	15	2.52 Mhz	8.5	3.30	110
NIN-PA680KTR	68	± 10% (K)	—	15	2.52 Mhz	7.5	3.70	105
NIN-PA820KTR	82	± 10% (K)	—	15	2.52 Mhz	7.0	4.20	100
NIN-PA101KTR	100	± 10% (K)	—	20	0.796 Mhz	6.5	5.0	90
NIN-PA121KTR	120	± 10% (K)	—	20	0.796 Mhz	6.0	7.0	75
NIN-PA151KTR	150	± 10% (K)	—	20	0.796 Mhz	5.5	8.0	70
NIN-PA181KTR	180	± 10% (K)	—	20	0.796 Mhz	5.0	9.5	65
NIN-PA221KTR	220	± 10% (K)	—	20	0.796 Mhz	4.0	11.0	60
NIN-PA271KTR	270	± 10% (K)	—	20	0.796 Mhz	3.5	14.5	55
NIN-PA331KTR	330	± 10% (K)	—	20	0.796 Mhz	3.0	16.0	50

NIN-SA Series A Size (1210) Shielded Type

NIC P/N	'L' Inductance (uH)	Tolerance (std)	Tolerance (opt)	'Q' Factor (min.)	'Q' Test Freq.	SRF Mhz (min.)	DC Resistance (ohms) Max.	Rated DC Current (mA) Max.
NIN-SA100KTR	10 @1Mhz	± 10% (K)	—	40	5.0 Mhz	30	1.8	18
NIN-SA120KTR	12 @1Mhz	± 10% (K)	—	40	5.0 Mhz	28	2.0	17
NIN-SA150KTR	15 @1Mhz	± 10% (K)	—	40	5.0 Mhz	25	2.2	15
NIN-SA180KTR	18 @1Mhz	± 10% (K)	—	40	5.0 Mhz	23	2.5	13
NIN-SA220KTR	22 @1Mhz	± 10% (K)	—	40	5.0 Mhz	20	2.8	12
NIN-SA270KTR	27 @1Mhz	± 10% (K)	—	40	5.0 Mhz	18	3.2	10
NIN-SA330KTR	33 @1Mhz	± 10% (K)	—	40	5.0 Mhz	17	3.5	10
NIN-SA390KTR	39 @1Mhz	± 10% (K)	—	40	5.0 Mhz	15	3.8	9
NIN-SA470KTR	47 @1Mhz	± 10% (K)	—	40	5.0 Mhz	14	4.0	8
NIN-SA560KTR	56 @1Mhz	± 10% (K)	—	40	5.0 Mhz	13	4.5	7
NIN-SA680KTR	68 @1Mhz	± 10% (K)	—	40	1.5 Mhz	12	5.0	6
NIN-SA820KTR	82 @1Mhz	± 10% (K)	—	40	1.5 Mhz	11	6.0	6
NIN-SA101KTR	100 @1Mhz	± 10% (K)	—	40	1.5 Mhz	10	7.0	5
NIN-SA121KTR	120 @1Mhz	± 10% (K)	—	40	1.5 Mhz	9	8.0	5
NIN-SA151KTR	150 @100Khz	± 10% (K)	—	40	1.5 Mhz	5	9.0	5
NIN-SA181KTR	180 @100Khz	± 10% (K)	—	40	1.5 Mhz	5	11.0	5
NIN-SA221KTR	270 @100Khz	± 10% (K)	—	40	1.5 Mhz	4	12.0	5
NIN-SA271KTR	270 @100Khz	± 10% (K)	—	40	1.5 Mhz	4	14.0	5

PACKAGING SPECIFICATIONS

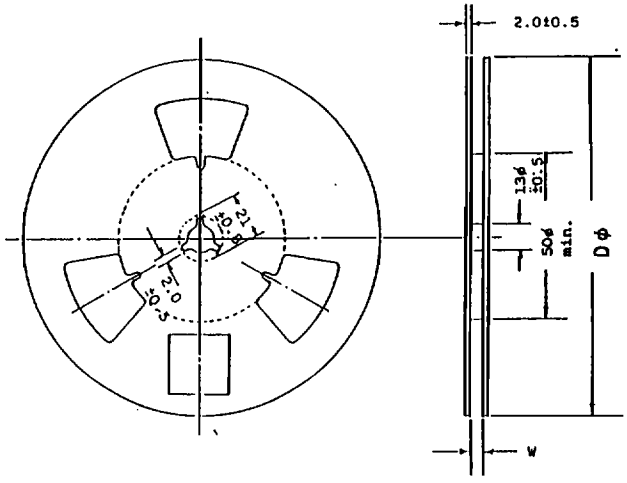


CARRIER TAPE DIMENSIONS IN mm

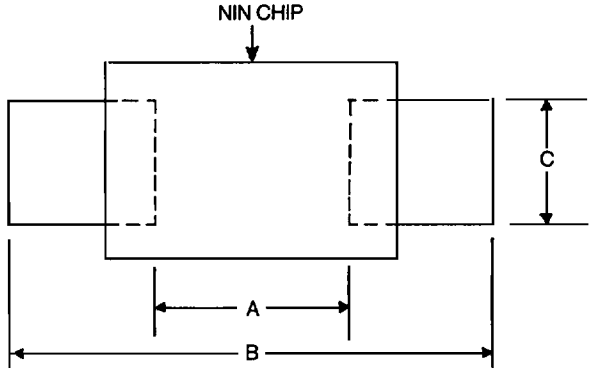
Type	Size	W ±0.3	A ±0.2	B ±0.2	P ±0.1	E ±0.1	F ±0.1	t1	t2
FD/ND	D	8.0	1.45	2.25	4.0	1.75	3.5	0.25	2.0
FC/NC/PC/SC	C	8.0	2.4	2.9	4.0	1.75	3.5	0.3	1.85
FA/NA/PA/SA	A	8.0	2.8	3.6	4.0	1.75	3.5	0.3	2.3
FB	B	12.0	3.6	4.9	8.0	1.75	5.5	0.3	3.4

Reel Dimensions in mm

Type	Size	Dφ±2	W±1.5	Qty/Reel
FD/ND	D	178	9.0	3000 pcs.
FC/NC/PC/SC	C	178	10.0	2000 pcs
FA/NA/PA/SA	A	178	10.0	2000 pcs
FB	B	178	14.0	500 pcs



Recommended land patterns for flow and reflow soldering



DIMENSIONS (mm)

Type	Size	A	B	C
FD/ND	D	1.0~1.2	3.0~3.8	0.9~1.3
FC/NC/PC/SC	C	1.4~1.5	3.5~4.0	1.2~1.6
FA/NA/PA/SA	A	1.6~2.0	4.0~4.6	1.9~2.4
FB	B	2.4~2.6	5.5~6.0	2.0~3.0