Wirewound Chip Inductors

NIN-Z Series

FEATURES

- CERAMIC BODY, WIRE WOUND CHIP INDUCTOR
- SIZES K (0402) and J (0603)
- HIGH CURRENT AND LOW DCR
- REFLOW SOLDERING APPLICABLE
- TAPE & REEL PACKAGING FOR AUTOMATIC PICK-PLACE

RoHS Compliant
includes all homogeneous materials

*See Part Number System for Details

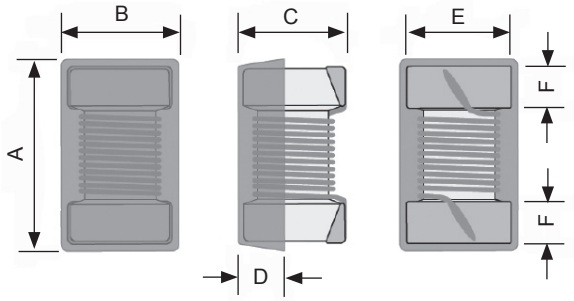
Specifications	Case Size Code	
	0402 (K)	0603 (J)
Inductance Range	1.0nH ~ 220nH	1.8nH ~ 390nH
Inductance Tolerance	±0.2nH (C), ±0.3nH (S), ±0.5nH (D), ±2% (G), ±3% (H), ±5% (J), ±10% (K)	
Operating Temperature Range	-40°C ~ +125°C (including self-heating)	

ENVIRONMENTAL CHARACTERISTICS

Test	Specifications	Test Method & Condition
Solderability	90% Min. Coverage	Flux: 25% Resin, 75% Ethanol (by weight) Solder: Sn/Ag3.0/Cu0.5, Solder Temp.: 245 ± 5°C, Immersion: 3 ± 0.5 sec.
Resistance to Soldering Heat	(1) No mechanical damage (2) Inductance change ±5% of initial value (3) Q factor within ±20% of initial value. Measure after chip is stablized at room temperature for 1 ~ 2 hours.	Device reflowed on pcb for 10 seconds at +260°C ± 5°C in solder Sn/Ag3.0/Cu0.5. Test time 6 min.
Humidity Resistance (no load)		After 1000 hours at +60°C ± 2°C and 90 ~ 95% RH
High Temperature Resistance (no load)		After 1000 +24/-0 hours at +125°C ± 2°C
Low Temperature Resistance (no load)		After 1000 +24/-0 hours at -40°C ± 2°C
High Temperature Load Life		After 1000 hrs at +125°C ± 2°C and rated current
Humidity Load Life		After 1000 hrs at +60°C ± 2°C, 90~95% RH and rated current

COMPONENT DIMENSIONS (mm):

Type	Case Size	A	B	C	D ref.	E	F
NIN-ZK	0402	1.10 ± 0.10	0.60 ± 0.10	0.60 ± 0.10	0.20	0.50 ± 0.10	0.15 ± 0.10
NIN-ZJ	0603	1.70 ± 0.20	1.10 ± 0.20	0.90 ± 0.20	0.38	0.76 ± 0.10	0.30 ± 0.10



PART NUMBER SYSTEM

NIN-Z K 22N J TR F

- F — Pb-free/RoHS compliant
- TR — Taped & Reeled
- J — Tolerance Code: ±0.2nH (C), ±0.3nH (S), ±0.5nH (D), ±2% (G), ±3% (H), ±5% (J) and ±10% (K)
- 22N — Inductance Value in Nanohenries (see standard values table for appropriate value codes)
- K — Case Code (K = 0402, J = 0603)
- NIN-Z — Series

NIN-ZK SERIES **K-SIZE (0402)** **STANDARD VALUES**

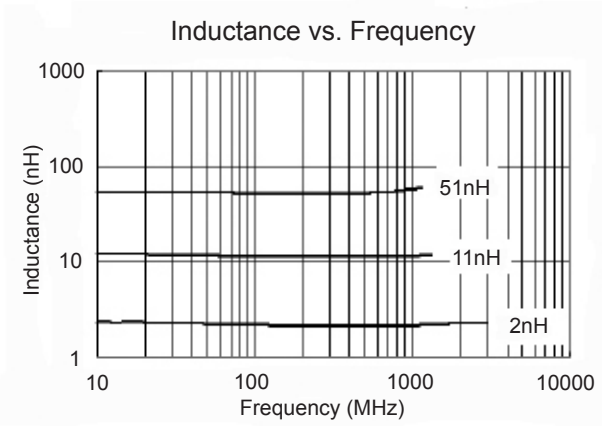
NIC P/N	INDUCTANCE VALUE (nH)	INDUCTANCE TOLERANCE	TEST FREQ. (MHz) L/Q	Q FACTOR	SRF (GHz) Typ.	DCR (ohms) Max.	Irms[1] (mA)
NIN-ZK1N0_TR2300F	1.0	C,S,D	250	20	16.0	0.030	2300
NIN-ZK2N0_TR2100F	2.0	C,S,D,J,K	250	24	15.2	0.038	2100
NIN-ZK2N2_TR2100F	2.2	C,S,D,J,K	250	25	15.1	0.038	2100
NIN-ZK2N4_TR2000F	2.4	S,D	250	23	14.0	0.042	2000
NIN-ZK2N7_TR1500F	2.7	C,S,D,J,K	250	24	13.0	0.056	1500
NIN-ZK3N3_TR1700F	3.3	C,S,D,J,K	250	28	12.8	0.045	1700
NIN-ZK3N6_TR1700F	3.6	C,S,D,J,K	250	28	11.7	0.045	1700
NIN-ZK3N9_TR1700F	3.9	C,S,D,J,K	250	28	9.50	0.045	1700
NIN-ZK4N3_TR1600F	4.3	S,D,J,K	250	27	7.15	0.050	1600
NIN-ZK4N7_TR1500F	4.7	S,D,J,K	250	23	6.85	0.075	1500
NIN-ZK5N1_TR1200F	5.1	S,D,J,K	250	20	6.80	0.100	1200
NIN-ZK5N6_TR1600F	5.6	S,D,J,K	250	29	6.50	0.048	1600
NIN-ZK6N2_TR1600F	6.2	S,D,J,K	250	29	5.80	0.050	1600
NIN-ZK6N8_TR1500F	6.8	G,H,J,K	250	28	5.80	0.070	1500
NIN-ZK7N5_TR1400F	7.5	G,H,J,K	250	26	5.40	0.080	1400
NIN-ZK8N2_TR1500F	8.2	G,H,J,K	250	28	5.40	0.065	1500
NIN-ZK8N7_TR1500F	8.7	G,H,J,K	250	29	5.00	0.070	1500
NIN-ZK9N0_TR1400F	9.0	G,H,J,K	250	27	5.00	0.080	1400
NIN-ZK9N5_TR1400F	9.5	G,H,J,K	250	28	4.70	0.075	1400
NIN-ZK10N_TR1300F	10	G,H,J,K	250	26	4.70	0.085	1300
NIN-ZK11N_TR1400F	11	G,H,J,K	250	29	4.70	0.070	1400
NIN-ZK12N_TR1200F	12	G,H,J,K	250	28	4.40	0.100	1200
NIN-ZK13N_TR870F	13	G,H,J,K	250	27	4.20	0.140	870
NIN-ZK15N_TR1100F	15	G,H,J,K	250	28	3.90	0.115	1100
NIN-ZK16N_TR850F	16	G,H,J,K	250	27	3.70	0.130	850
NIN-ZK17N_TR650F	17	G,H,J,K	250	26	3.70	0.230	650
NIN-ZK18N_TR900F	18	G,H,J,K	250	26	3.55	0.120	900
NIN-ZK19N_TR850F	19	G,H,J,K	250	26	3.50	0.145	850
NIN-ZK20N_TR780F	20	J,K	250	27	3.50	0.155	780
NIN-ZK21N_TR450F	21	G,H,J,K	250	25	1.70	0.460	450
NIN-ZK22N_TR800F	22	G,H,J,K	250	28	3.30	0.190	800
NIN-ZK23N_TR800F	23	G,H,J,K	250	28	3.30	0.160	800
NIN-ZK24N_TR700F	24	G,H,J,K	250	27	3.15	0.275	700
NIN-ZK25N_TR700F	25	G,H,J,K	250	26	3.15	0.260	700
NIN-ZK26N_TR700F	26	G,H,J,K	250	27	3.15	0.275	700
NIN-ZK27N_TR450F	27	G,H,J,K	250	27	3.20	0.330	450
NIN-ZK30N_TR450F	30	G,H,J,K	250	25	2.90	0.350	450
NIN-ZK33N_TR490F	33	G,H,J,K	250	28	2.80	0.330	490
NIN-ZK36N_TR480F	36	G,H,J,K	250	26	2.80	0.360	480
NIN-ZK37N_TR470F	37	G,H,J,K	250	26	2.70	0.480	470
NIN-ZK39N_TR450F	39	G,H,J,K	250	28	2.60	0.430	450
NIN-ZK40N_TR450F	40	G,H,J,K	250	28	2.60	0.520	450
NIN-ZK43N_TR450F	43	G,H,J,K	250	26	2.50	0.520	450
NIN-ZK47N_TR420F	47	G,H,J,K	250	28	2.40	0.580	420

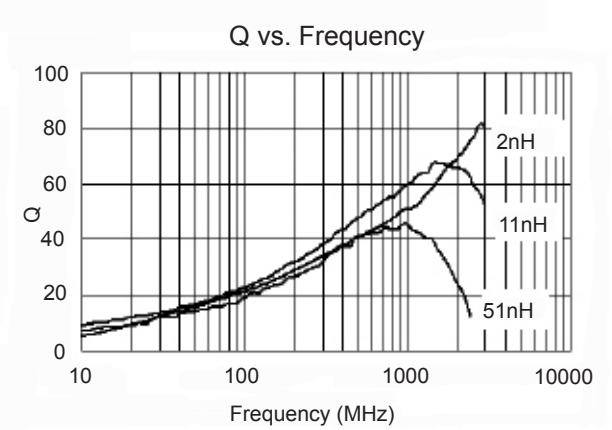
Specify required tolerance code in ordering part number: ±0.2nH (C), ±0.3nH (S), ±0.5nH (D), ±2% (G), ±3% (H), ±5% (J), ±10% (K)

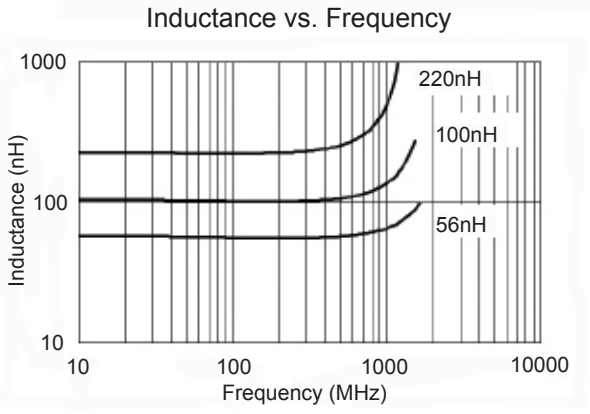
NIN-ZK SERIES **K-SIZE (0402)** **STANDARD VALUES**

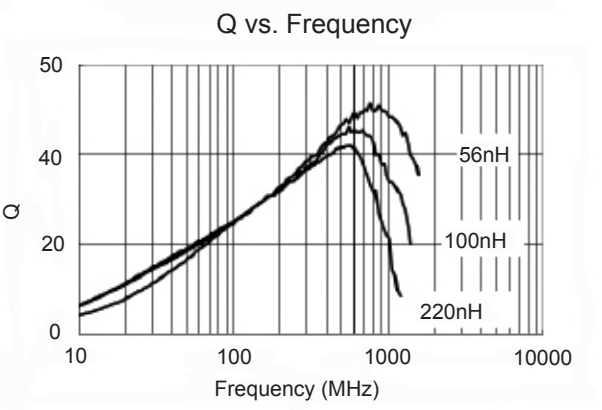
NIC P/N	INDUCTANCE VALUE (nH)	INDUCTANCE TOLERANCE	TEST FREQ. (MHz) L/Q	Q FACTOR	SRF (GHz) Typ.	DCR (ohms) Max.	Irms[1] (mA)
NIN-ZK51N_TR360F	51	G,H,J,K	250	26	2.30	0.7	360
NIN-ZK56N_TR330F	56	G,H,J,K	250	31	2.07	0.9	330
NIN-ZK68N_TR320F	68	G,H,J,K	250	31	1.84	1.0	320
NIN-ZK82N_TR315F	82	G,H,J,K	250	31	1.75	1.1	315
NIN-ZKR10_TR310F	100	G,H,J,K	250	30	1.58	1.2	310
NIN-ZKR12_TR310F	120	G,H,J,K	250	29	1.25	1.2	310
NIN-ZKR15_TR240F	150	G,H,J,K	100/250	29	1.14	2.0	240
NIN-ZKR18_TR240F	180	G,H,J,K	100/250	32	1.08	2.5	240
NIN-ZKR22_TR160F	220	G,H,J,K	100/250	32	0.96	3.5	160

Specify required tolerance code in ordering part number: ±0.2nH (C), ±0.3nH (S), ±0.5nH (D), ±2% (G), ±3% (H), ±5% (J), ±10% (K)









NIN-ZJ SERIES **J-SIZE (0603)** **STANDARD VALUES**

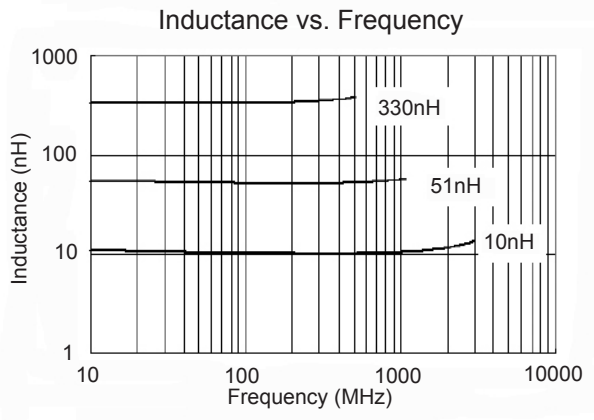
NIC P/N	INDUCTANCE VALUE (nH)	INDUCTANCE TOLERANCE	TEST FREQ. (MHz) L/Q	Q	SRF (GHz) Typ.	DCR (ohms) Max.	Irms[1] (mA)
NIN-ZJ1N8TR2100F	1.8	S,D,K	250/250	23	16	0.033	2100
NIN-ZJ2N2_TR900F	2.2	C,S,D,J,K	250/250	13	15	0.230	900
NIN-ZJ3N3_TR1900F	3.3	C,S,D,J,K	250/250	32	9.6	0.024	1900
NIN-ZJ3N6_TR1900F	3.6	C,S,D,J,K	250/250	40	9.7	0.031	1900
NIN-ZJ3N9_TR1600F	3.9	C,S,D,J,K	250/250	35	7.5	0.039	1600
NIN-ZJ4N3_TR1300F	4.3	C,S,D,J,K	250/250	30	7.5	0.080	1300
NIN-ZJ4N7_TR1100F	4.7	D,K	250/250	26	7.9	0.100	1100
NIN-ZJ5N1_TR1700F	5.1	C,S,D,J,K	250/250	40	8.9	0.036	1700
NIN-ZJ5N6_TR1700F	5.6	C,S,D,J,K	250/250	48	6.6	0.036	1700
NIN-ZJ6N0_TR1700F	6.0	C,S,D,J,K	250/250	49	6.0	0.036	1700
NIN-ZJ6N8_TR1400F	6.8	G,H,J,K	250/250	42	5.8	0.042	1400
NIN-ZJ7N2_TR1400F	7.2	G,H,J,K	250/250	43	5.4	0.070	1400
NIN-ZJ7N5_TR1300F	7.5	G,H,J,K	250/250	41	5.3	0.080	1300
NIN-ZJ8N2_TR1400F	8.2	G,H,J,K	250/250	46	5.9	0.054	1400
NIN-ZJ8N7_TR1400F	8.7	G,H,J,K	250/250	46	5.5	0.054	1400
NIN-ZJ9N1_TR1400F	9.1	G,H,J,K	250/250	40	5.1	0.058	1400
NIN-ZJ9N5_TR1400F	9.5	G,H,J,K	250/250	49	4.9	0.053	1400
NIN-ZJ10N_TR1400F	10	G,H,J,K	250/250	49	4.3	0.048	1400
NIN-ZJ11N_TR1400F	11	G,H,J,K	250/250	41	4.1	0.058	1400
NIN-ZJ12N_TR1100F	12	G,H,J,K	250/250	37	4.1	0.115	1100
NIN-ZJ15N_TR1200F	15	G,H,J,K	250/250	48	3.6	0.078	1200
NIN-ZJ16N_TR1100F	16	G,H,J,K	250/250	48	3.5	0.085	1100
NIN-ZJ18N_TR1200F	18	G,H,J,K	250/250	41	3.3	0.066	1200
NIN-ZJ22N_TR850F	22	G,H,J,K	250/250	44	3.15	0.140	850
NIN-ZJ23N_TR850F	23	G,H,J,K	250/250	40	3.00	0.190	850
NIN-ZJ24N_TR1100F	24	G,H,J,K	250/250	42	2.95	0.074	1100
NIN-ZJ27N_TR780F	27	G,H,J,K	250/250	44	2.80	0.200	780
NIN-ZJ30N_TR920F	30	G,H,J,K	250/250	49	2.80	0.160	920
NIN-ZJ33N_TR680F	33	G,H,J,K	250/250	45	2.70	0.220	680
NIN-ZJ36N_TR720F	36	G,H,J,K	250/250	44	2.50	0.225	720
NIN-ZJ39N_TR680F	39	G,H,J,K	250/250	44	2.45	0.250	680
NIN-ZJ43N_TR810F	43	G,H,J,K	250/250	45	2.45	0.225	810
NIN-ZJ47N_TR680F	47	G,H,J,K	200/250	47	2.30	0.240	680
NIN-ZJ51N_TR660F	51	G,H,J,K	200/250	45	2.30	0.280	660
NIN-ZJ56N_TR610F	56	G,H,J,K	200/250	45	2.20	0.300	610
NIN-ZJ68N_TR600F	68	G,H,J,K	200/250	46	2.00	0.330	600
NIN-ZJ72N_TR550F	72	G,H,J,K	150/250	46	1.90	0.420	550
NIN-ZJ75N_TR500F	75	G,H,J,K	150/250	46	1.90	0.520	500
NIN-ZJ82N_TR510F	82	G,H,J,K	150/250	45	1.80	0.460	510
NIN-ZJ91N_TR440F	91	G,H,J,K	150/250	45	1.65	0.580	440
NIN-ZJR10_TR470F	100	G,H,J,K	150/250	49	1.70	0.540	470

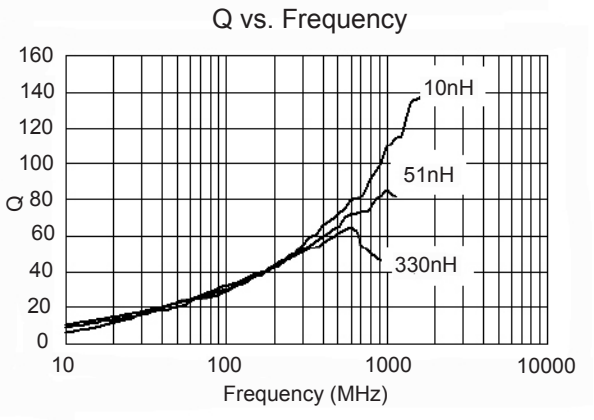
Specify required tolerance code in ordering part number: ±0.2nH (C), ±0.3nH (S), ±0.5nH (D), ±2% (G), ±3% (H), ±5% (J), ±10% (K)

NIN-ZJ SERIES **J-SIZE (0603)** **STANDARD VALUES**

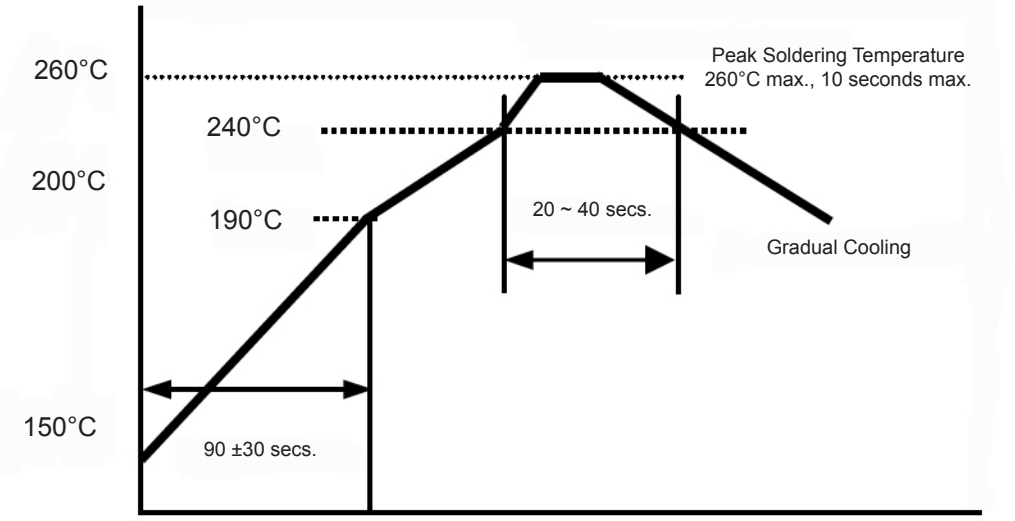
NIC P/N	INDUCTANCE VALUE (nH)	INDUCTANCE TOLERANCE	TEST FREQ. (MHz) L/Q	Q	SRF (GHz) Typ.	DCR (ohms) Max.	Irms[1] (mA)
NIN-ZJR11_TR440F	110	G,H,J,K	150/250	47	1.60	0.58	440
NIN-ZJR12_TR420F	120	G,H,J,K	150/250	47	1.55	0.72	420
NIN-ZJR15_TR390F	150	J,K	150/250	47	1.35	0.82	390
NIN-ZJR18_TR310F	180	G,H,J,K	100/250	48	1.30	1.50	310
NIN-ZJR20_TR280F	200	G,H,J,K	100/250	47	1.25	2.00	280
NIN-ZJR21_TR280F	210	G,H,J,K	100/250	48	1.20	2.00	280
NIN-ZJR22_TR280F	220	G,H,J,K	100/250	47	1.10	2.00	280
NIN-ZJR25_TR240F	250	G,H,J,K	100/250	45	1.05	3.00	240
NIN-ZJR27_TR260F	270	G,H,J,K	100/250	46	1.05	2.25	260
NIN-ZJR30_TR220F	300	G,H,J,K	100/250	47	0.99	2.80	220
NIN-ZJR33_TR180F	330	G,H,J,K	100/250	46	0.93	3.60	180
NIN-ZJR36_TR170F	360	G,H,J,K	100/250	47	0.93	4.00	170
NIN-ZJR39_TR170F	390	G,H,J,K	100/250	47	0.88	4.00	170

Specify required tolerance code in ordering part number: ±0.2nH (C), ±0.3nH (S), ±0.5nH (D), ±2% (G), ±3% (H), ±5% (J), ±10% (K)





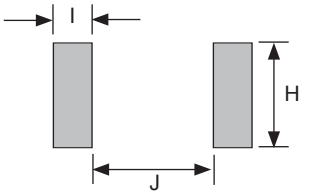
REFLOW SOLDERING PROFILE



Note: Two reflow passes allowed

RECOMMEND LAND PATTERN DIMENSIONS (mm)

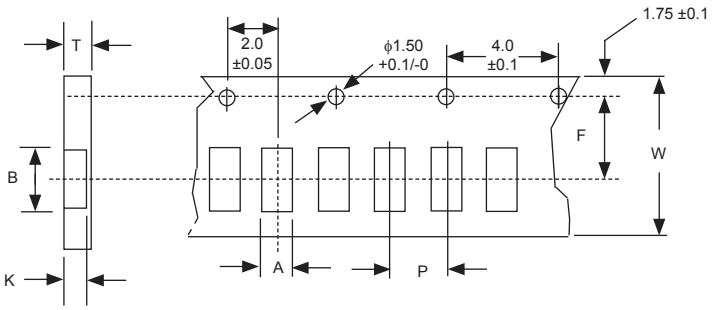
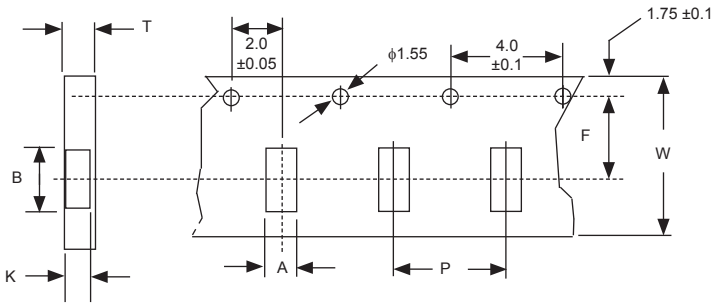
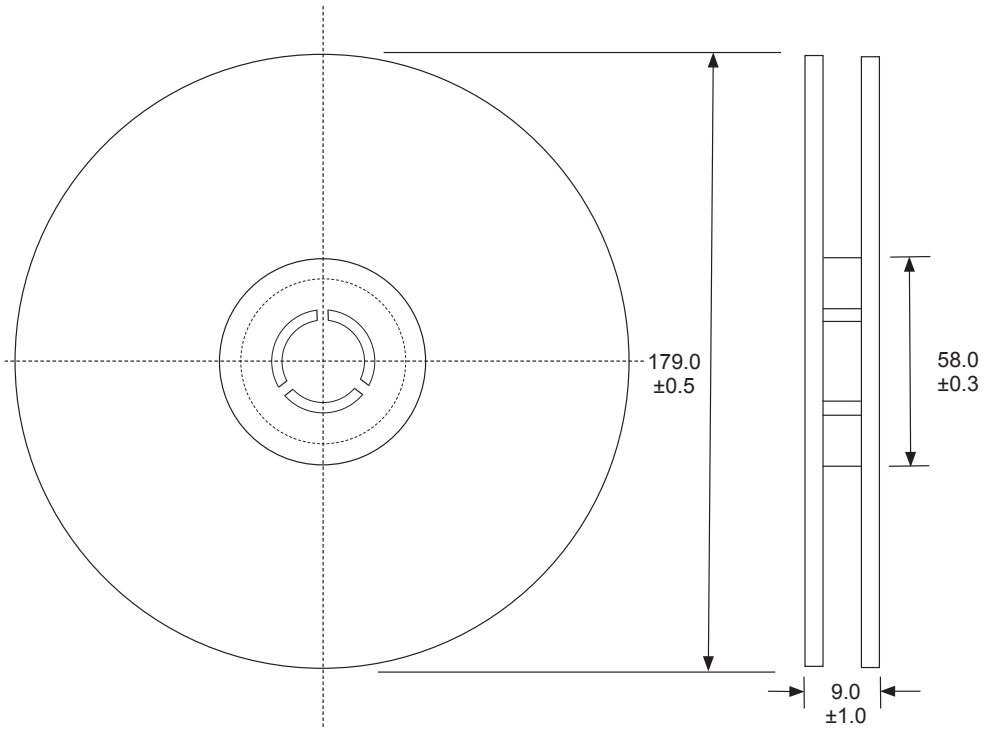
Type	H typ.	I typ.	J typ.
NIN-ZK	0.65	0.35	0.50
NIN-ZJ	1.02	0.64	0.64



TAPE AND REEL DIMENSIONS (mm):

TYPE	A	B	F	P	K	T	W	QTY/REEL
NIN-ZK	0.75 ± 0.10	1.32 ± 0.10	3.50 ± 0.10	2.00 ± 0.10	0.75 ± 0.10	0.80 ± 0.10	8.0 ± 0.3	10,000
NIN-ZJ	1.20 ± 0.05	1.90 ± 0.05		4.00 ± 0.10	0.95 ± 0.10	0.98 ± 0.10		3,000

NIN-ZK (0402) Carrier



NIN-ZJ (0603) Carrier