

FEATURES

- CERAMIC BODY, WIRE WOUND CHIP INDUCTOR
- SIZES K (0402)
- 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



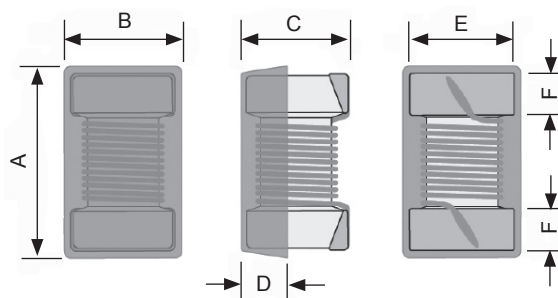
Specifications	Case Size Code
	0402 (K)
Inductance Range	1.3nH ~ 75nH
Inductance Tolerance	±0.1nH (B), ±0.2nH (C), ±0.3nH (S), ±0.5nH (D), ±2% (G), ±3% (H), ±5% (J), ±10% (K)
Operating Temperature Range	-40°C ~ +125°C (including self-heating)

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.: 240 ± 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 stabilized 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-SK	0402	1.10 ± 0.10	0.60 ± 0.10	0.60 ± 0.10	0.20	0.50 ± 0.10	0.20 ± 0.10



PART NUMBER SYSTEM

NIN-S K 22N J TR E

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



NIN-SK SERIES

K-SIZE (0402)

STANDARD VALUES

NIC P/N	INDUCTANCE VALUE (nH)	INDUCTANCE TOLERANCE	TEST FREQ. (MHz) L/Q	MINIMUM Q FACTOR	SRF (GHz) Min.	DCR (ohms) Max.	I _{rms} ¹ (mA)
NIN-SK1N3_TR3150F	1.3	C,S,D,K	100/250	20	18.0	0.012	3150
NIN-SK1N5_TR2100F	1.5	B,C,S,D,K	100/250	20	18.0	0.028	2100
NIN-SK1N6_TR1450F	1.6	B,C,S,D,K	100/250	20	18.0	0.045	1450
NIN-SK1N7_TR1150F	1.7	B,C,S,D,K	100/250	20	18.0	0.065	1150
NIN-SK1N8_TR1150F	1.8	C,S,D,K	100/250	20	18.0	0.065	1150
NIN-SK2N2_TR2530F	2.2	C,S,D,K	100/250	30	15.5	0.022	2530
NIN-SK2N3_TR2530F	2.3	B,C,S,D,K	100/250	30	15.5	0.022	2530
NIN-SK2N4_TR2530F	2.4	B,C,S,D,K	100/250	30	15.5	0.022	2530
NIN-SK2N5_TR2100F	2.5	B,C,S,D,K	100/250	30	15.5	0.030	2100
NIN-SK2N6_TR1950F	2.6	B,C,S,D,K	100/250	30	14.5	0.035	1950
NIN-SK2N7_TR1500F	2.7	B,C,S,D,K	100/250	28	14.0	0.047	1500
NIN-SK2N8_TR1500F	2.8	B,C,S,D,K	100/250	27	13.5	0.047	1500
NIN-SK2N9_TR1500F	2.9	B,C,S,D,K	100/250	25	12.5	0.047	1500
NIN-SK3N0_TR1350F	3.0	C,S,D,K	100/250	20	12.5	0.063	1350
NIN-SK3N3_TR2000F	3.3	C,S,D,K	100/250	30	14.0	0.030	2000
NIN-SK3N4_TR1950F	3.4	B,C,S,D,J,K	100/250	30	10.0	0.030	1950
NIN-SK3N5_TR1950F	3.5	B,C,S,D,J,K	100/250	30	10.0	0.030	1950
NIN-SK3N6_TR1950F	3.6	B,C,S,D,J,K	100/250	30	10.0	0.030	1950
NIN-SK3N7_TR1950F	3.7	B,C,S,D,J,K	100/250	35	10.0	0.030	1950
NIN-SK3N8_TR1950F	3.8	B,C,S,D,J,K	100/250	35	10.0	0.030	1950
NIN-SK3N9_TR1950F	3.9	B,C,S,D,J,K	100/250	35	10.0	0.030	1950
NIN-SK4N0_TR1950F	4.0	B,C,S,D,J,K	100/250	30	10.0	0.030	1950
NIN-SK4N1_TR1800F	4.1	B,C,S,D,J,K	100/250	30	9.6	0.044	1800
NIN-SK4N2_TR1800F	4.2	B,C,S,D,J,K	100/250	30	9.6	0.044	1800
NIN-SK4N3_TR1800F	4.3	B,C,S,D,J,K	100/250	32	9.6	0.044	1800
NIN-SK4N4_TR1600F	4.4	B,C,S,D,J,K	100/250	34	9.6	0.052	1600
NIN-SK4N5_TR1450F	4.5	B,C,S,D,J,K	100/250	34	9.6	0.060	1450
NIN-SK4N7_TR1200F	4.7	B,C,S,D,J,K	100/250	31	8.0	0.071	1200
NIN-SK4N8_TR1200F	4.8	B,C,S,D,J,K	100/250	30	8.0	0.071	1200
NIN-SK4N9_TR1200F	4.9	B,C,S,D,J,K	100/250	27	8.0	0.071	1200
NIN-SK5N0_TR1770F	5.0	B,C,S,D,J,K	100/250	32	10.0	0.040	1770
NIN-SK5N1_TR1770F	5.1	B,C,S,D,J,K	100/250	35	8.0	0.040	1770
NIN-SK5N2_TR1770F	5.2	B,C,S,D,J,K	100/250	35	8.0	0.040	1770
NIN-SK5N3_TR1770F	5.3	B,C,S,D,J,K	100/250	35	8.0	0.040	1770
NIN-SK5N4_TR1770F	5.4	B,C,S,D,J,K	100/250	35	8.0	0.040	1770
NIN-SK5N5_TR1770F	5.5	B,C,S,D,J,K	100/250	35	8.0	0.040	1770
NIN-SK5N6_TR1770F	5.6	B,C,S,D,J,K	100/250	35	8.0	0.040	1770
NIN-SK5N7_TR1770F	5.7	B,C,S,D,J,K	100/250	30	8.0	0.040	1770
NIN-SK5N8_TR1770F	5.8	B,C,S,D,J,K	100/250	30	8.0	0.040	1770
NIN-SK5N9_TR1770F	5.9	B,C,S,D,J,K	100/250	30	8.0	0.040	1770
NIN-SK6N0_TR1600F	6.0	B,C,S,D,J,K	100/250	32	8.0	0.056	1600
NIN-SK6N1_TR1600F	6.1	B,C,S,D,J,K	100/250	32	8.0	0.056	1600
NIN-SK6N2_TR1600F	6.2	B,C,S,D,J,K	100/250	33	8.0	0.056	1600
NIN-SK6N3_TR1600F	6.3	G,H,J,K	100/250	33	7.8	0.057	1600

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



NIN-SK SERIES

K-SIZE (0402)

STANDARD VALUES

NIC P/N	INDUCTANCE VALUE (nH)	INDUCTANCE TOLERANCE	TEST FREQ. (MHz) L/Q	MINIMUM Q FACTOR	SRF (GHz) Min.	DCR (ohms) Max.	I _{rms} ¹ (mA)
NIN-SK6N4_TR1380F	6.4	G,H,J,K	100/250	33	7.0	0.065	1380
NIN-SK6N5_TR1380F	6.5	G,H,J,K	100/250	32	7.0	0.065	1380
NIN-SK6N6_TR1280F	6.6	G,H,J,K	100/250	30	7.0	0.078	1280
NIN-SK6N7_TR1280F	6.7	G,H,J,K	100/250	30	7.0	0.078	1280
NIN-SK6N8_TR1450F	6.8	G,H,J,K	100/250	30	7.0	0.068	1450
NIN-SK6N9_TR1420F	6.9	G,H,J,K	100/250	32	8.5	0.069	1420
NIN-SK7N0_TR1420F	7.0	G,H,J,K	100/250	33	8.0	0.069	1420
NIN-SK7N1_TR1420F	7.1	G,H,J,K	100/250	32	8.0	0.069	1420
NIN-SK7N2_TR1700F	7.2	G,H,J,K	100/250	32	7.0	0.050	1700
NIN-SK7N3_TR1700F	7.3	G,H,J,K	100/250	32	7.0	0.050	1700
NIN-SK7N4_TR1700F	7.4	G,H,J,K	100/250	30	7.0	0.050	1700
NIN-SK7N5_TR1700F	7.5	G,H,J,K	100/250	35	7.0	0.050	1700
NIN-SK7N6_TR1700F	7.6	G,H,J,K	100/250	30	7.0	0.050	1700
NIN-SK7N7_TR1700F	7.7	G,H,J,K	100/250	30	7.0	0.050	1700
NIN-SK7N8_TR1700F	7.8	G,H,J,K	100/250	30	7.0	0.050	1700
NIN-SK7N9_TR1700F	7.9	G,H,J,K	100/250	30	7.0	0.050	1700
NIN-SK8N0_TR1700F	8.0	G,H,J,K	100/250	30	7.0	0.050	1700
NIN-SK8N1_TR1500F	8.1	G,H,J,K	100/250	32	6.5	0.069	1500
NIN-SK8N2_TR1500F	8.2	G,H,J,K	100/250	32	6.5	0.069	1500
NIN-SK8N3_TR1500F	8.3	G,H,J,K	100/250	32	6.5	0.069	1500
NIN-SK8N4_TR1500F	8.4	G,H,J,K	100/250	32	6.5	0.069	1500
NIN-SK8N5_TR1500F	8.5	G,H,J,K	100/250	32	6.5	0.069	1500
NIN-SK9N1_TR1400F	9.1	G,H,J,K	100/250	32	6.5	0.080	1400
NIN-SK9N2_TR1400F	9.2	G,H,J,K	100/250	32	6.0	0.081	1400
NIN-SK9N3_TR1400F	9.3	G,H,J,K	100/250	34	6.0	0.081	1400
NIN-SK9N4_TR1400F	9.4	G,H,J,K	100/250	33	6.0	0.081	1400
NIN-SK9N5_TR1400F	9.5	G,H,J,K	100/250	32	6.0	0.081	1400
NIN-SK9N6_TR1400F	9.6	G,H,J,K	100/250	33	6.0	0.081	1400
NIN-SK9N7_TR1400F	9.7	G,H,J,K	100/250	33	6.0	0.081	1400
NIN-SK9N8_TR1400F	9.8	G,H,J,K	100/250	34	6.0	0.081	1400
NIN-SK9N9_TR1400F	9.9	G,H,J,K	100/250	32	6.0	0.081	1400
NIN-SK10N_TR1400F	10	G,H,J,K	100/250	31	6.0	0.081	1400
NIN-SK12N_TR1240F	12	G,H,J,K	100/250	30	5.2	0.093	1240
NIN-SK13N_TR1240F	13	G,H,J,K	100/250	30	5.2	0.093	1240
NIN-SK14N_TR1150F	14	G,H,J,K	100/250	31	5.2	0.111	1150
NIN-SK16N_TR1000F	16	G,H,J,K	100/250	31	5.0	0.126	1000
NIN-SK20N_TR800F	20	G,H,J,K	100/250	30	4.5	0.186	800
NIN-SK21N_TR780F	21	G,H,J,K	100/250	30	4.5	0.202	780
NIN-SK22N_TR780F	22	G,H,J,K	100/250	30	4.5	0.202	780
NIN-SK23N_TR760F	23	G,H,J,K	100/250	29	4.5	0.201	760
NIN-SK24N_TR770F	24	G,H,J,K	100/250	31	4.0	0.212	770
NIN-SK25N_TR750F	25	G,H,J,K	100/250	31	4.1	0.221	750
NIN-SK26N_TR720F	26	G,H,J,K	100/250	29	4.1	0.282	720
NIN-SK27N_TR680F	27	G,H,J,K	100/250	30	4.0	0.288	680

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



NIN-SK SERIES

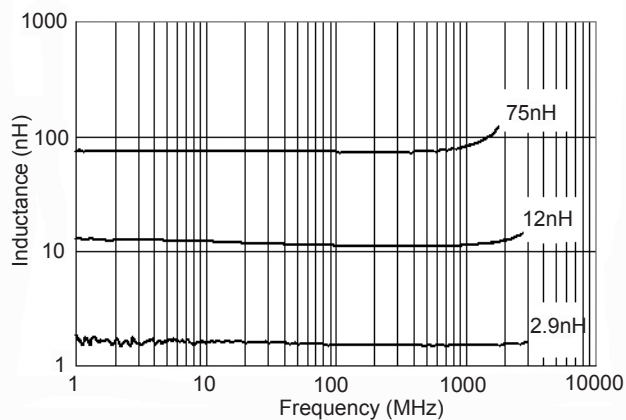
K-SIZE (0402)

STANDARD VALUES

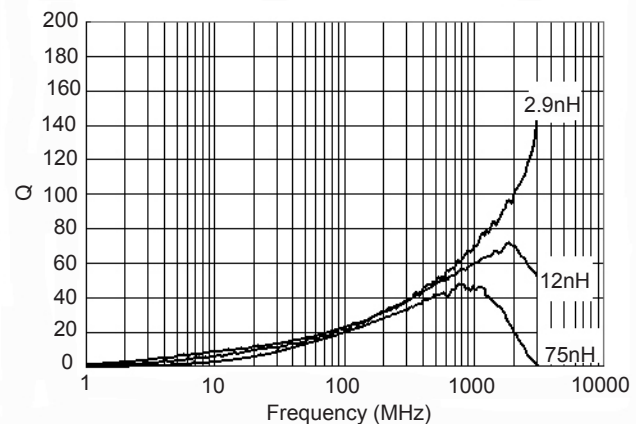
NIC P/N	INDUCTANCE VALUE (nH)	INDUCTANCE TOLERANCE	TEST FREQ. (MHz) L/Q	MINIMUM Q FACTOR	SRF (GHz) Min.	DCR (ohms) Max.	I _{rms} ¹ (mA)
NIN-SK30N_TR660F	30	G,H,J,K	100/250	30	3.8	0.309	660
NIN-SK33N_TR620F	33	G,H,J,K	100/250	30	3.6	0.336	620
NIN-SK36N_TR540F	36	G,H,J,K	100/250	30	3.5	0.431	540
NIN-SK39N_TR530F	39	G,H,J,K	100/250	28	3.4	0.456	530
NIN-SK43N_TR515F	43	G,H,J,K	100/250	30	3.4	0.516	515
NIN-SK47N_TR440F	47	G,H,J,K	100/250	25	3.2	0.648	440
NIN-SK53N_TR415F	53	G,H,J,K	100/200	25	2.9	0.696	415
NIN-SK56N_TR340F	56	G,H,J,K	100/200	25	2.9	0.996	340
NIN-SK75N_TR320F	75	G,H,J,K	100/200	25	2.4	1.224	320

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

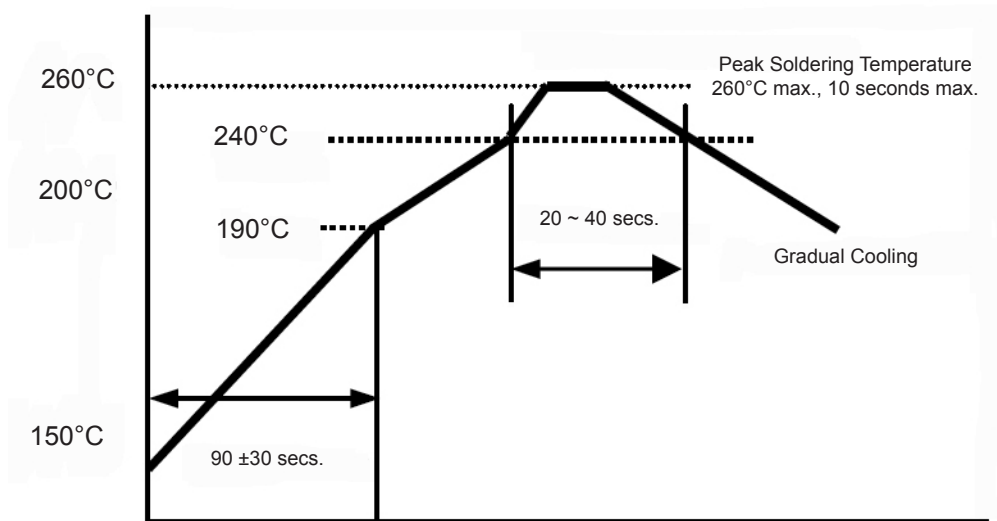
Inductance vs. Frequency



Q vs. Frequency



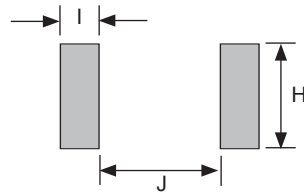
REFLOW SOLDERING PROFILE



Note: Two reflow passes allowed

RECOMMEND LAND PATTERN DIMENSIONS (mm)

Type	H typ.	I typ.	J typ.
NIN-SK	0.65	0.35	0.50



TAPE AND REEL DIMENSIONS (mm):

TYPE	A	B	F	P	K	T	W	QTY/REEL
NIN-SK	0.74 ± 0.10	1.32 ± 0.05	3.50 ± 0.10	2.00 ± 0.10	0.65 ± 0.10	0.71 ± 0.10	8.0 ± 0.3	3,000

NIN-SK (0402) Carrier

