WIREWOUND CHIP INDUCTORS

SCI0402S SERIES

1. PART NO. EXPRESSION :

S C I 0 4 0 2 S - 1 N 0 K F

(a) (b) (c) (d) (e)(f)

(a) Series code

(b) Dimension code

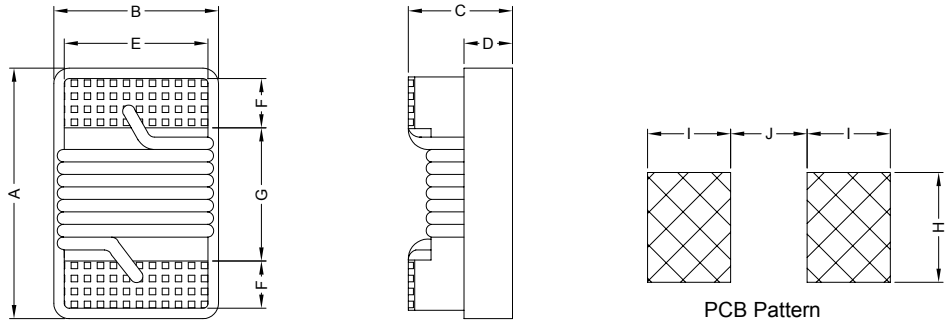
(c) Type code : S (Standard)

(d) Inductance code : 1N0 = 1.0nH

(e) Tolerance code : G = ±2%, J = ±5%, K = ±10%

(f) F : RoHS Compliant

2. CONFIGURATION & DIMENSIONS :

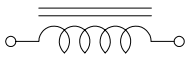


PCB Pattern

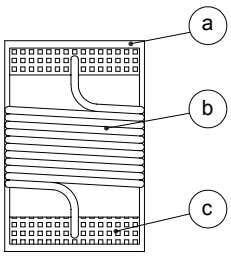
Unit:m/m

A	B	C	D	E	F	G	H	I	J
1.27 Max.	0.76 Max.	0.61 Max.	0.15 Ref.	0.51 Ref.	0.23 Ref.	0.56 Ref.	0.66 Ref.	0.50 Ref.	0.46 Ref.

3. SCHEMATIC :



4. MATERIALS :



(a) Core : Ceramic U core

(b) Wire : Enamelled Copper Wire

(c) Terminal Metallization : Ag + Ni + Au

RoHS Compliant

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22.06.2010

5. GENERAL SPECIFICATION :

a) Storage temp. : -25°C to +80°C

b) Operating temp. : -40°C to +125°C

c) Temperature rise : 40°C Max.

d) Rated current : Base on temp. rise & ΔL/L0A=10% Max.

e) Resistance to solder heat : 260°C.10sec

6. ELECTRICAL CHARACTERISTICS :

Part No.	Tolerance Available	L (nH)	Test Freq (MHz)	Q Min.	SRF (MHz) Min.	DCR (Ω) Max.	IDC (mA) Max.	900MHz L Typ.	900MHz Q Typ.	1.7GHz L Typ.	1.7GHz Q Typ.
SCI0402S-1N0□F	K	1.0	250	16	12700	0.045	1360	1.02	77	1.02	69
SCI0402S-1N9□F	K, J	1.9	250	16	11300	0.070	1040	1.72	68	1.74	82
SCI0402S-2N0□F	K, J	2.0	250	16	11100	0.070	1040	1.93	54	1.93	75
SCI0402S-2N2□F	K, J	2.2	250	19	10800	0.070	960	2.19	59	2.23	100
SCI0402S-2N4□F	K, J	2.4	250	15	10500	0.070	790	2.24	51	2.27	68
SCI0402S-2N7□F	K, J	2.7	250	16	10400	0.120	640	2.23	42	2.25	61
SCI0402S-3N3□F	K, J, G	3.3	250	19	7000	0.066	840	3.10	65	3.12	87
SCI0402S-3N6□F	K, J, G	3.6	250	19	6800	0.066	840	3.56	45	3.62	71
SCI0402S-3N9□F	K, J, G	3.9	250	19	5800	0.066	840	3.89	50	4.00	75
SCI0402S-4N3□F	K, J, G	4.3	250	18	6000	0.091	700	4.19	47	4.30	71
SCI0402S-4N7□F	K, J, G	4.7	250	15	4700	0.130	640	4.55	48	4.68	68
SCI0402S-5N1□F	K, J, G	5.1	250	20	4800	0.083	800	5.15	56	5.25	82
SCI0402S-5N6□F	K, J, G	5.6	250	20	4800	0.083	760	5.16	54	5.28	81
SCI0402S-6N2□F	K, J, G	6.2	250	20	4800	0.083	760	6.16	52	6.37	76
SCI0402S-6N8□F	K, J, G	6.8	250	20	4800	0.083	680	6.56	63	6.93	78
SCI0402S-7N5□F	K, J, G	7.5	250	22	4800	0.104	680	7.91	60	8.22	88
SCI0402S-8N2□F	K, J, G	8.2	250	22	4400	0.104	680	8.50	57	8.85	84
SCI0402S-8N7□F	K, J, G	8.7	250	18	4100	0.200	480	8.78	54	9.21	73
SCI0402S-9N0□F	K, J, G	9.0	250	22	4160	0.104	680	9.07	62	9.53	78
SCI0402S-9N5□F	K, J, G	9.5	250	18	4000	0.200	480	9.42	54	9.98	69
SCI0402S-10N□F	K, J, G	10	250	21	3900	0.195	480	9.80	50	10.10	67
SCI0402S-11N□F	K, J, G	11	250	24	3680	0.120	640	10.70	52	11.20	78

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6. ELECTRICAL CHARACTERISTICS :

Part No.	Tolerance Available	L (nH)	Test Freq (MHz)	Q Min.	SRF (MHz) Min.	DCR (Ω) Max.	IDC (mA) Max.	900MHz L Typ.	900MHz Q Typ.	1.7GHz L Typ.	1.7GHz Q Typ.
SCI0402S-12N□F	K, J, G	12	250	24	3600	0.120	640	11.90	53	12.70	71
SCI0402S-13N□F	K, J, G	13	250	24	3450	0.210	440	13.40	51	14.60	57
SCI0402S-15N□F	K, J, G	15	250	24	3280	0.172	560	14.60	55	15.50	77
SCI0402S-16N□F	K, J, G	16	250	24	3100	0.220	560	16.60	46	18.80	47
SCI0402S-18N□F	K, J, G	18	250	24	3100	0.230	420	18.30	57	20.28	62
SCI0402S-19N□F	K, J, G	19	250	24	3040	0.202	480	19.10	50	21.10	67
SCI0402S-20N□F	K, J, G	20	250	25	3000	0.250	420	20.70	52	23.66	53
SCI0402S-22N□F	K, J, G	22	250	25	2800	0.300	400	23.20	53	26.75	53
SCI0402S-23N□F	K, J, G	23	250	22	2720	0.300	400	23.80	49	26.90	64
SCI0402S-24N□F	K, J, G	24	250	25	2700	0.300	400	25.10	51	29.50	50
SCI0402S-27N□F	K, J, G	27	250	24	2480	0.300	400	28.70	49	33.50	63
SCI0402S-30N□F	K, J, G	30	250	25	2350	0.350	400	31.10	46	38.50	39
SCI0402S-33N□F	K, J, G	33	250	24	2350	0.350	400	34.90	31	41.74	32
SCI0402S-36N□F	K, J, G	36	250	24	2320	0.440	320	39.50	44	48.40	53
SCI0402S-39N□F	K, J, G	39	250	25	2100	0.550	200	41.70	47	50.23	45
SCI0402S-40N□F	K, J, G	40	250	24	2240	0.440	320	39.00	44	47.40	33
SCI0402S-43N□F	K, J, G	43	250	25	2030	0.810	100	45.80	46	61.55	34
SCI0402S-47N□F	K, J, G	47	250	20	2100	0.830	150	50.00	38	-	-
SCI0402S-51N□F	K, J, G	51	250	25	1750	0.820	100	-	-	-	-
SCI0402S-56N□F	K, J, G	56	250	22	1760	0.970	100	-	-	-	-
SCI0402S-68N□F	K, J, G	68	250	22	1620	1.120	100	-	-	-	-

Inductance tolerance :

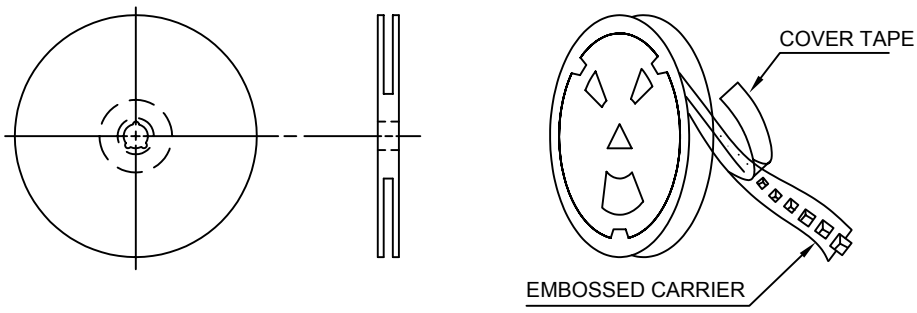
□ : G : ±2%
J : ±5%
K : ±10%

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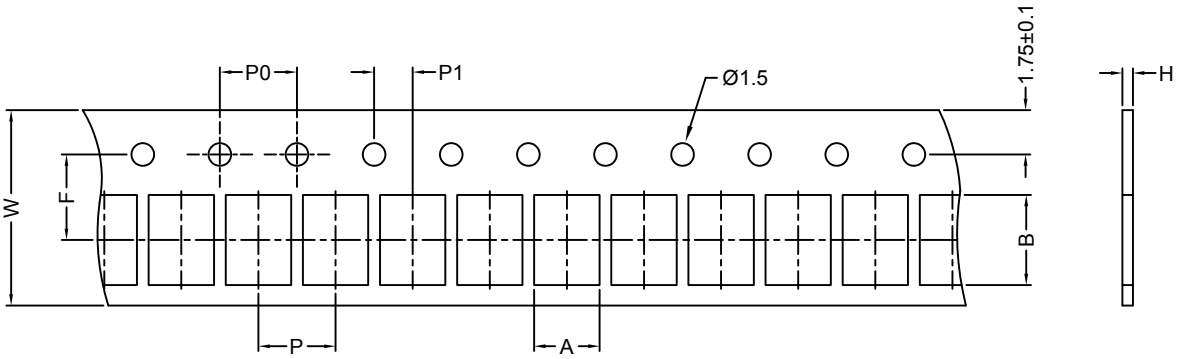
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7. PACKAGING INFORMATION :

Reel Configuration :



Paper Tape :



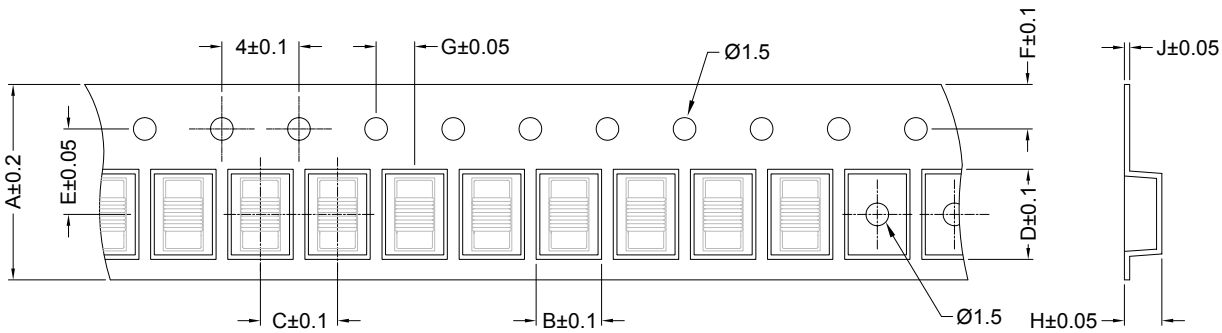
Dimension (unit: mm)

Series	A	B	H	F	P	P0	P1	W	Qty
SCI0402S	0.72	1.19	0.60	3.50	4.00	4.00	2.00	8.00	4000pcs / reel
SCI0603S	1.35	1.95	0.95	3.50	4.00	4.00	2.00	8.00	4000pcs / reel

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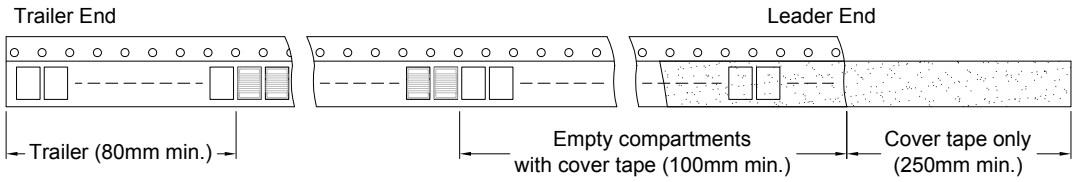
Embossed Carrier Tape :



Dimension (unit: mm)

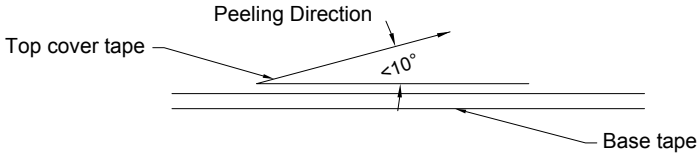
Series	A	B	C	D	E	F	G	H	J	Qty
SCI0805S	8	1.85	4	2.30	3.5	1.75	2	1.45	0.23	2000pcs / reel
SCI0805LP	8	1.80	4	2.30	3.5	1.75	2	0.90	0.23	2000pcs / reel
SCI0805HQ	8	1.85	4	2.30	3.5	1.75	2	1.45	0.23	2000pcs / reel
SCI1008S	8	2.70	4	2.80	3.5	1.75	2	2.00	0.23	2000pcs / reel
SCI1008LP	8	2.70	4	2.80	3.5	1.75	2	1.50	0.23	2000pcs / reel
SCI1008HQ	8	2.70	4	2.80	3.5	1.75	2	2.00	0.23	2000pcs / reel

Leader/Trailer Tape :



Peel-off Force :

Peel-off force should be in the range of 0.1N~0.7N at a peel-off speed of 300±10mm/min.



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8. ENVIRONMENTAL CHARACTERISTICS :

Electrical Performance Test :

ITEM		SPECIFICATION	TEST CONDITIONS / TEST METHODS
1	Inductance	Refer to Electrcal Characteristics List	HP4291B
2	Q		HP4291B
3	SRF		HP8753D
4	DC Resistance Rdc		Mico-Ohmmeter (GOM-801G)
5	Rated Current IDC		The device should be REFLOW soldered (230±5°C for 10 seconds) to a tinned copper subs rate. A dynamiter
6	Over Load Test	After test, inductors shall have no evidence of electrical and mechanical damage	Applied 2 times of rated allowed DC current to inductor for a period of 5 minute.
7	Withstanding Voltage Test	After test, inductors shall have no evidence of electrical and mechanical damage	AC voltage of 500VAC applied between inductors terminal and case for 1 minute.
8	Insulation Resistance Test	1000 MOhm min.	100VDC applied between inductor terminal and case

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Mechanical Performance Test :

ITEM		SPECIFICATION	TEST CONDITIONS / TEST METHODS
1	Vibration	Appearance : No damage L change : within ±5% Q change : within ±10%	Test device shall be soldered on the substrate Oscillation Frequency : 10 to 55 to 10Hz for 1 min. Amplitude : 1.5mm Time : 2hrs for each axis (X, Y, Z), total 6hrs.
2	Resistance to Soldering Heat	Appearance : No damage L change : within ±5% Q change : within ±10%	Pre-heating : 150°C, 1 min Solder Composition : Sn/Pb=63/67 Solder Temperature : 230±5°C Immersion Time : 20±2sec Solder Temperature : 260±5°C Immersion Time : 5±2sec
3	Component Adhesion (Push Test)	1 lbs. For 0402 2 lbs. For 0603 3 lbs. For the rest	The device should be REFLOW soldered (230±5°C for 10 seconds) to a tinned copper subs rate. A dynamiter force gauge should be applied to the side of the conponent. The device must withstand a minimum force of 2 or 4 pounds without a failure of the termination attached to component.
3	Component Adhesion (Push Test)	The electrodes shall be at least 90% covered with new solder coating.	Pre-heating : 150°C, 1min Solder Composition : Sn/Pb=63/67 Solder Temperature : 230±5°C Immersion Time : 4±1sec
4	Drop Test	After test, the chip inductor don't fell of broke on the P.C.Board	Drop 1 time for each face and 1 time for each corner. Total drop 10 times. Drop Height : 100cm Drop Weight : 125g
5	Solderability Test	The terminal should at least be 90% covered with solder	after fluxing (alpha 100 or equiv), inductor shall be dipped in a melted solder bath at 232±5°C for 5 seconds.
6	Resistance to solvent test	There shall be no case of deformation change in appearance of obliteration of marking	MIL-STD202F, METHOD 215D

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Climatic Test :

<table>
<tr><th colspan="2">ITEM</th><th>SPECIFICATION</th><th>TEST CONDITIONS / TEST METHODS</th></tr>
<tr><td>1</td><td>Temperature Characteristics</td><td rowspan="5">Appearance : No damage
L change : within ±10%
Q change : within ±20%</td><td>-40°C ~ +125°C</td></tr>
<tr><td>2</td><td>Humidity Resistance</td><td>Temperature : 40±2°C
Relative Humidity : 90~95%
Time : 96hrs ±2hrs
Measured after exposure in the room condition for 2hrs</td></tr>
<tr><td>3</td><td>Low Temperature Storage Test</td><td>Temperature : -40±2°C
Time : 48±2hrs
Inductors are to be tested after 1 hour at room temperature.</td></tr>
<tr><td>4</td><td>Thermal Shock Test</td><td>One cycle :
<table>
<tr><th>Step</th><th>Temperature (°C)</th><th>Time (min)</th></tr>
<tr><td>1</td><td>-25±3</td><td>30</td></tr>
<tr><td>2</td><td>25±2</td><td>15</td></tr>
<tr><td>3</td><td>85±3</td><td>30</td></tr>
<tr><td>4</td><td>25±2</td><td>15</td></tr>
</table>
Total : 5 cycles</td></tr>
<tr><td>5</td><td>High Temperature Storage Test</td><td>Temperature : 125±2°C
Time : 48±2hrs
Load : Allowed DC current</td></tr>
<tr><td>6</td><td>High Temperature Load Life Test</td><td>There should be no evidence of short of open circuit.</td><td>Temperature : 85±2°C
Time : 1000±12hrs
Load : Allowed DC current</td></tr>
<tr><td>7</td><td>Humidity Load Life</td><td></td><td>Temperature : 40±2°C
Relative Humidity : 90~95%
Time : 1000±12hrs
Load : Allowed DC current</td></tr>
</table>

Pb

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