

### 1. PART NO. EXPRESSION :

**SCI0402S-1N0KF**

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

(a) Series code

(b) Dimension code

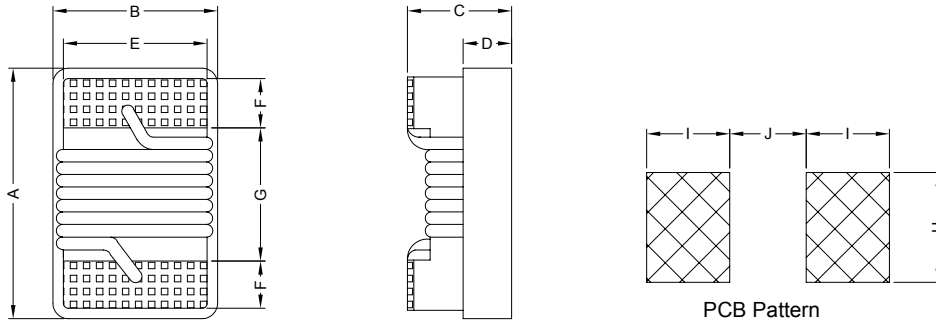
(c) Type code : S ( Standard )

(d) Inductance code : 1N0 = 1.0nH

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

(f) F : Lead Free

### 2. CONFIGURATION & DIMENSIONS :

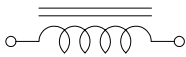


PCB Pattern

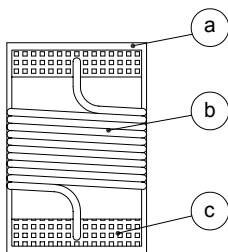
Unit:m/m

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



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## 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 &  $\Delta L/L0A=10\%$  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 ( $\Omega$ ) 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 ( $\Omega$ ) 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 :  $\pm 2\%$
- J :  $\pm 5\%$
- K :  $\pm 10\%$



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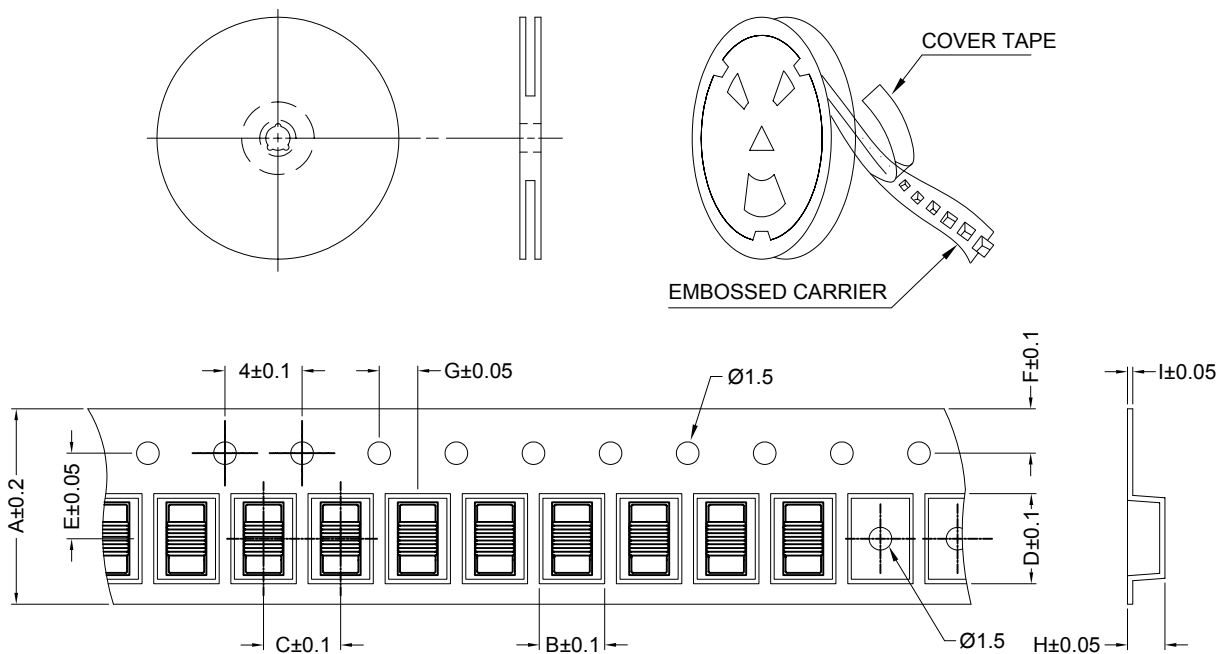
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### 7. ELECTRICAL CHARACTERISTICS :

CONFIGURATTION :



DIMENSION (unit: mm)

SERIES	A	B	C	D	E	F	G	H	I
SCI0402	8.0	0.71	2.0	1.16	3.5	1.75	0	0.65	0.23
SCI0603	8.0	1.10	4.0	1.75	3.5	1.75	2	1.15	0.25
SCI0805	8.0	1.88	4.0	2.38	3.5	1.75	2	1.48	0.20
SCI1008	8.0	2.73	4.0	2.88	3.5	1.75	2	2.33	0.20

PACKING QUANTITY

SERIES	INNER REEL
	Q'TY (PCS)
SCI0402	4000
SCI0603	4000
SCI0805	2000
SCI1008	2000



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### 8. ENVIRONMENTAL CHARACTERISTICS :

Electrical Performance Test :

ITEM		SPECIFICATION	TEST CONDITIONS / TEST METHODS
1	Inductance	Refer to Electrical 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 $\pm 5\%$ Q change : within $\pm 10\%$	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 $\pm 5\%$ Q change : within $\pm 10\%$	Pre-heating : 150°C, 1 min Solder Composition : Sn/Pb=63/67 Solder Temperature : 230 $\pm 5^\circ\text{C}$ Immersion Time : 20 $\pm 2$ sec Solder Temperature : 260 $\pm 5^\circ\text{C}$ Immersion Time : 5 $\pm 2$ sec
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 $\pm 5^\circ\text{C}$ for 10 seconds) to a tinned copper subs rate. A dynamiter force gauge should be applied to the side of the component. 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 $\pm 5^\circ\text{C}$ Immersion Time : 4 $\pm 1$ sec
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 $\pm 5^\circ\text{C}$ 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 :

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



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