

### 1. PART NO. EXPRESSION :

**SCI0603HC-1N6JF**

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

(a) Series code

(b) Dimension code

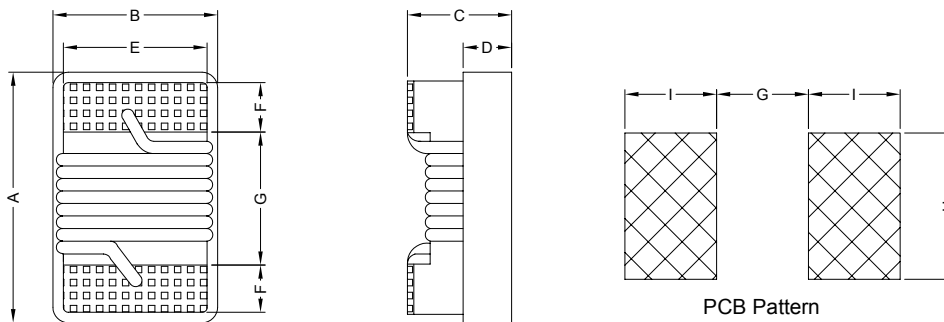
(c) Type code : HC ( High Current )

(d) Inductance code : 1N6 = 1.6nH

(e) Tolerance code : J = ±5%, K = ±10%, M = ±20%

(f) F : Lead Free

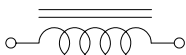
### 2. CONFIGURATION & DIMENSIONS :



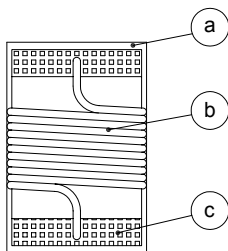
Unit:m/m

A	B	C	D	E	F	G	H	I	J
1.80 Max.	1.12 Max.	1.02 Max.	0.38 Ref.	0.76 Ref.	0.33 Ref.	0.86 Ref.	1.02 Ref.	0.64 Ref.	0.64 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.	Q Test Freq (MHz)	SRF (MHz) Min.	DCR ( $\Omega$ ) Max.	IDC (mA) Max.
SCI0603HC-1N6□F	K, J	1.6	250	24	250	12500	0.030	2400
SCI0603HC-3N6□F	K, J	3.6	250	24	250	5900	0.048	2300
SCI0603HC-3N9□F	K, J	3.9	250	25	250	5900	0.054	2200
SCI0603HC-6N8□F	K, J	6.8	250	35	250	5800	0.054	2100
SCI0603HC-7N5□F	K, J	7.5	250	35	250	3700	0.059	2100
SCI0603HC-10N□F	K, J, G	10	250	38	250	3700	0.071	2000
SCI0603HC-12N□F	K, J, G	12	250	38	250	3000	0.075	2000
SCI0603HC-15N□F	K, J, G	15	250	38	250	2800	0.080	1900
SCI0603HC-18N□F	K, J, G	18	250	40	250	2800	0.099	1900
SCI0603HC-22N□F	K, J, G	22	250	42	250	2400	0.099	1800
SCI0603HC-24N□F	K, J, G	24	250	42	250	2400	0.105	1800

Inductance tolerance :

- : G :  $\pm 2\%$
- J :  $\pm 5\%$
- K :  $\pm 10\%$



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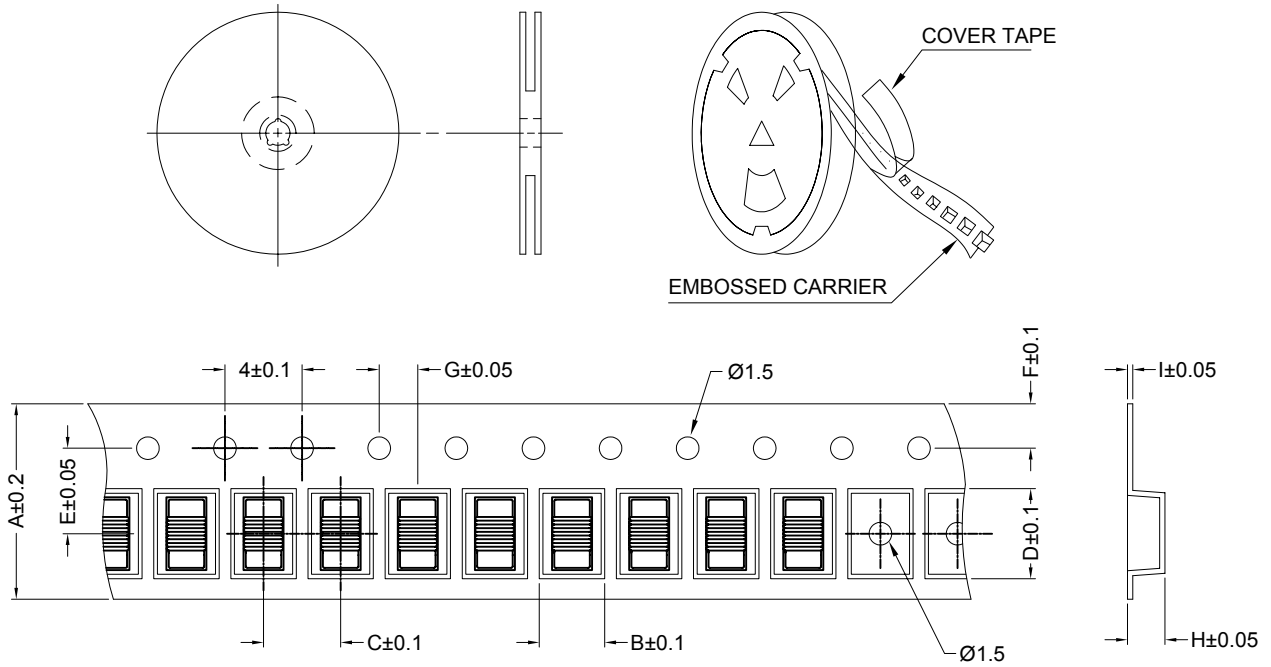
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## 7. ELECTRICAL CHARACTERISTICS :

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°C Immersion Time : 20 $\pm$ 2sec Solder Temperature : 260 $\pm$ 5°C Immersion Time : 5 $\pm$ 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 $\pm$ 5°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°C Immersion Time : 4 $\pm$ 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 $\pm$ 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 :

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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