

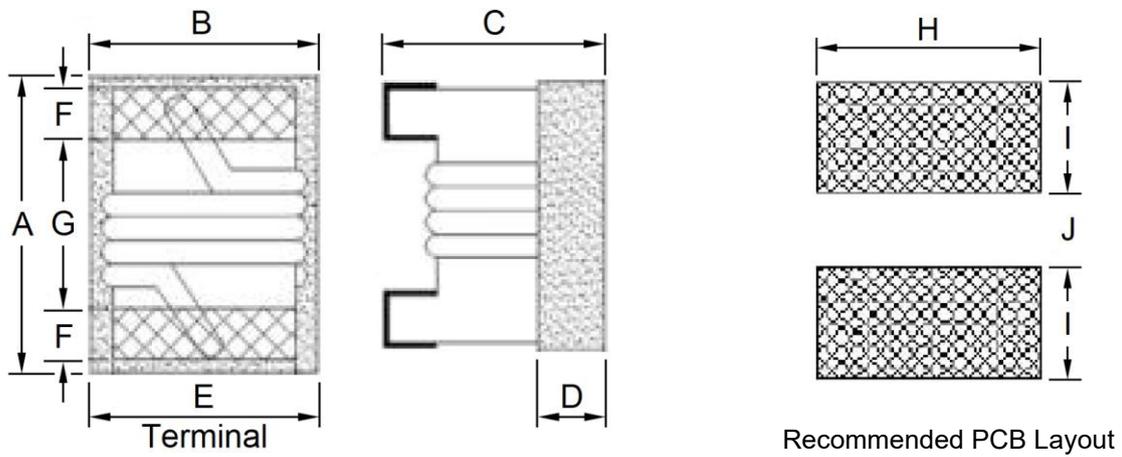
## 1. Part No. Expression

**SCI0603C1N6S**

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

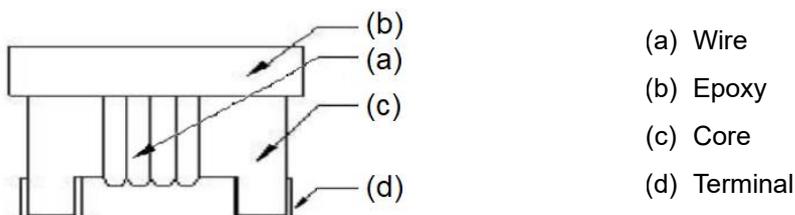
- (a) Series Code
- (b) Dimension Code
- (c) Material Code
- (d) Inductance Code
- (e) Tolerance Code

## 2. Configuration & Dimensions (Unit: mm)



A	B	C	D	E
1.80 Max	1.12 Max	1.02 Max	0.50 Ref	0.76 Ref
F	G	H	I	J
0.33 Ref	0.86 Ref	1.02 Ref	0.64 Ref	0.64 Ref

## 3. Material List



NOTE: Specifications subject to change without notice. Please check our website for latest information.

## 4. General Specifications

- (a) Operating Temp.: -40°C to +125°C (including self-temperature rise)
- (b) Storage Temp.: -40°C to +125°C (on board)
- (c) Rated Current: 15°C rise above 25°C ambient.
- (d) Storage Condition (Component in its packaging)
  - i) Temperature: -10°C to +40°C
  - ii) Humidity: Less than 70% RH

## 5. Electrical Characteristics

Part Number	Inductance (nH)	Q Typ	Test Frequency (L/Q)	Tolerance	Irms (mA) Typ	DCR (Ω) Max	SRF (MHz) Typ
SCI0603C1N6□	1.6	24	0.2V/250MHz	S, J, K	700	0.03	12500
SCI0603C1N8□	1.8	16	0.2V/250MHz	S, J, K	700	0.045	12500
SCI0603C1N9□	1.9	13	0.2V/250MHz	S, J, K	700	0.06	12500
SCI0603C2N0□	2.0	13	0.2V/250MHz	S, J, K	700	0.07	12500
SCI0603C2N2□	2.2	13	0.2V/250MHz	G, J, K	700	0.15	12500
SCI0603C3N3□	3.3	35	0.2V/250MHz	G, J, K	700	0.045	5900
SCI0603C3N6□	3.6	22	0.2V/250MHz	G, J, K	700	0.063	5900
SCI0603C3N9□	3.9	22	0.2V/250MHz	G, J, K	700	0.07	6900
SCI0603C4N1□	4.1	22	0.2V/250MHz	G, J, K	700	0.063	6900
SCI0603C4N3□	4.3	22	0.2V/250MHz	G, J, K	700	0.063	5900
SCI0603C4N7□	4.7	20	0.2V/250MHz	G, J, K	700	0.116	5800
SCI0603C5N1□	5.1	20	0.2V/250MHz	G, J, K	700	0.14	5700
SCI0603C5N6□	5.6	20	0.2V/250MHz	G, J, K	700	0.16	5800

□Tolerance: S=±0.3nH, G=±2%, J=±5%, K=±10%

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Part Number	Inductance (nH)	Q Typ	Test Frequency (L/Q)	Tolerance	I <sub>rms</sub> (mA) Typ	DCR (Ω) Max	SRF (MHz) Typ
SCI0603C6N0□	6.0	20	0.2V/250MHz	G, J, K	700	0.115	5700
SCI0603C6N2□	6.2	26	0.2V/250MHz	G, J, K	700	0.115	5700
SCI0603C6N3□	6.3	26	0.2V/250MHz	G, J, K	700	0.14	5700
SCI0603C6N8□	6.8	27	0.2V/250MHz	G, J, K	700	0.08	5800
SCI0603C7N5□	7.5	28	0.2V/250MHz	G, J, K	700	0.106	4800
SCI0603C8N2□	8.2	30	0.2V/250MHz	G, J, K	700	0.109	4700
SCI0603C8N7□	8.7	28	0.2V/250MHz	G, J, K	700	0.109	4600
SCI0603C9N1□	9.1	28	0.2V/250MHz	G, J, K	700	0.12	4800
SCI0603C9N5□	9.5	28	0.2V/250MHz	G, J, K	700	0.135	5400
SCI0603C10N□	10	31	0.2V/250MHz	G, J, K	700	0.13	4800
SCI0603C11N□	11	33	0.2V/250MHz	G, J, K	700	0.086	4000
SCI0603C12N□	12	35	0.2V/250MHz	G, J, K	700	0.13	4000
SCI0603C13N□	13	30	0.2V/250MHz	G, J, K	700	0.13	4000
SCI0603C15N□	15	35	0.2V/250MHz	G, J, K	700	0.13	4000
SCI0603C16N□	16	34	0.2V/250MHz	G, J, K	700	0.104	3300
SCI0603C18N□	18	35	0.2V/250MHz	G, J, K	700	0.16	3100
SCI0603C19N□	19	35	0.2V/250MHz	G, J, K	700	0.19	3000
SCI0603C20N□	20	38	0.2V/250MHz	G, J, K	700	0.18	3000
SCI0603C22N□	22	38	0.2V/250MHz	G, J, K	700	0.19	3000
SCI0603C23N□	23	38	0.2V/250MHz	G, J, K	700	0.19	2850
SCI0603C24N□	24	36	0.2V/250MHz	G, J, K	700	0.13	2650
SCI0603C25N□	25	38	0.2V/250MHz	G, J, K	600	0.21	2650

□Tolerance: S=±0.3nH, G=±2%, J=±5%, K=±10%

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Part Number	Inductance (nH)	Q Typ	Test Frequency (L/Q)	Tolerance	I <sub>rms</sub> (mA) Typ	DCR (Ω) Max	SRF (MHz) Typ
SCI0603C27N□	27	40	0.2V/250MHz	G, J, K	600	0.22	2800
SCI0603C30N□	30	37	0.2V/250MHz	G, J, K	600	0.144	2250
SCI0603C33N□	33	40	0.2V/250MHz	G, J, K	600	0.22	2300
SCI0603C36N□	36	38	0.2V/250MHz	G, J, K	600	0.25	2300
SCI0603C39N□	39	40	0.2V/250MHz	G, J, K	600	0.25	2200
SCI0603C43N□	43	39	0.2V/250MHz	G, J, K	600	0.28	2000
SCI0603C47N□	47	38	0.2V/250MHz	G, J, K	600	0.28	2000
SCI0603C51N□	51	38	0.2V/250MHz	G, J, K	600	0.3	2130
SCI0603C56N□	56	38	0.2V/250MHz	G, J, K	600	0.31	1900
SCI0603C62N□	62	37	0.2V/250MHz	G, J, K	600	0.33	1800
SCI0603C68N□	68	37	0.2V/250MHz	G, J, K	600	0.34	1700
SCI0603C72N□	72	34	0.2V/150MHz	G, J, K	400	0.42	1700
SCI0603C75N□	75	34	0.2V/150MHz	G, J, K	400	0.43	1700
SCI0603C79N□	79	34	0.2V/150MHz	G, J, K	400	0.5	1700
SCI0603C82N□	82	34	0.2V/150MHz	G, J, K	400	0.54	1700
SCI0603C85N□	85	34	0.2V/150MHz	G, J, K	400	0.55	1600
SCI0603C91N□	91	34	0.2V/150MHz	G, J, K	400	0.56	1500
SCI0603CR10□	100	34	0.2V/150MHz	G, J, K	400	0.58	1400
SCI0603CR11□	110	32	0.2V/150MHz	G, J, K	300	0.61	1350
SCI0603CR12□	120	32	0.2V/150MHz	G, J, K	300	0.84	1300
SCI0603CR13□	130	32	0.2V/150MHz	G, J, K	280	0.75	1200
SCI0603CR14□	140	30	0.2V/150MHz	G, J, K	280	0.9	1000

□Tolerance: S=±0.3nH, G=±2%, J=±5%, K=±10%

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Part Number	Inductance (μH) @0A	Q Typ	Test Frequency (L/Q)	Tolerance	I <sub>rms</sub> (mA) Typ	DCR (Ω) Max	SRF (MHz) Typ
SCI0603CR15□	150	28	0.2V/150MHz	G, J, K	280	0.92	990
SCI0603CR16□	160	28	0.2V/100MHz	G, J, K	260	1.05	990
SCI0603CR17□	170	25	0.2V/100MHz	G, J, K	240	1.15	990
SCI0603CR18□	180	25	0.2V/100MHz	G, J, K	240	1.25	990
SCI0603CR19□	190	25	0.2V/100MHz	G, J, K	200	1.35	990
SCI0603CR20□	200	25	0.2V/100MHz	G, J, K	200	1.5	990
SCI0603CR21□	210	27	0.2V/100MHz	G, J, K	200	2.06	895
SCI0603CR22□	220	25	0.2V/100MHz	G, J, K	250	2.02	900
SCI0603CR24□	240	25	0.2V/100MHz	G, J, K	200	1.9	900
SCI0603CR25□	250	25	0.2V/100MHz	G, J, K	250	2.34	900
SCI0603CR27□	270	24	0.2V/100MHz	G, J, K	170	2.36	900
SCI0603CR30□	300	26	0.2V/100MHz	G, J, K	150	2.7	900
SCI0603CR33□	330	25	0.2V/100MHz	G, J, K	100	3.4	900
SCI0603CR34□	340	25	0.2V/100MHz	G, J, K	100	2.9	900
SCI0603CR36□	360	25	0.2V/100MHz	G, J, K	100	3.07	900
SCI0603CR37□	370	25	0.2V/100MHz	G, J, K	100	3.1	900
SCI0603CR39□	390	25	0.2V/100MHz	G, J, K	100	3.6	900
SCI0603CR47□	470	25	0.2V/100MHz	G, J, K	100	4.0	750
SCI0603CR56□	560	23	0.2V/100MHz	G, J, K	90	4.7	460

□Tolerance: S=±0.3nH, G=±2%, J=±5%, K=±10%

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## 6. Soldering Specification

Mildly activated rosin fluxes are preferred. Our terminations are suitable for re-flow soldering systems. If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.

### 6-1. IR Soldering Reflow

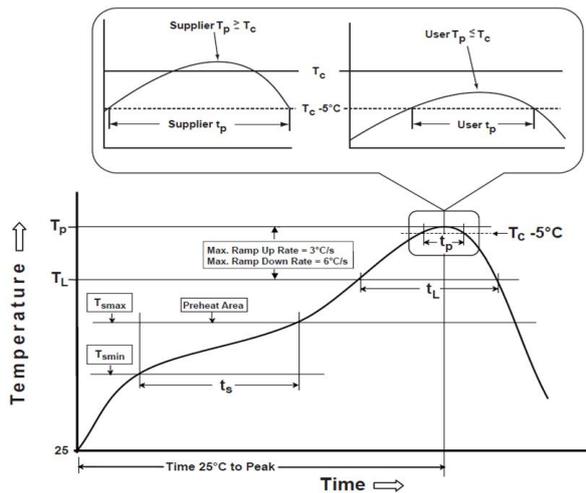
Recommended temperature profiles for lead free re-flow soldering in Figure 1, Table 1.1 & 1.2 (J-STD-020F).

### 6-2. Iron Reflow

Products attachment with a soldering iron is discouraged due to the inherent process control limitations. In the event that a soldering iron must be employed the following precautions are recommended (Figure 2).

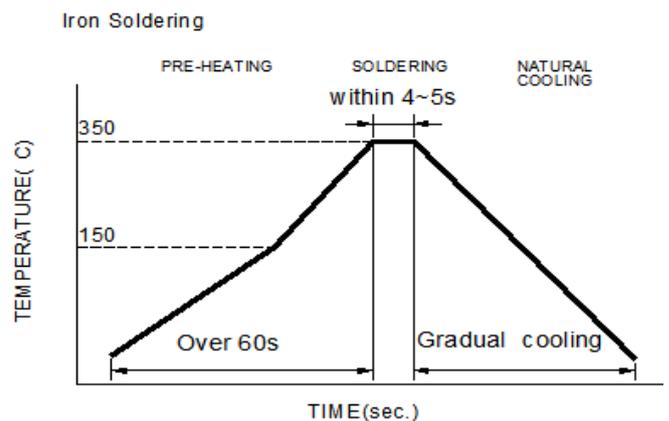
Note:

- (a) Preheat circuit and products to 150°C.
- (b) 350°C tip temperature (Max.)
- (c) Never contact the ceramic with the iron tip
- (d) 1.0mm tip diameter (Max.)
- (e) Use a 20 watt soldering iron with tip diameter of 1.0mm
- (f) Limit soldering time to 4~5 sec.



Reflow times: 3 times Max

Figure 1: IR Soldering Reflow



Iron Soldering times : 1 times max

Figure 2: Iron soldering temperature profiles

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**Table (1.1) Reflow Profiles**

Profile Type:	Pb-Free Assembly
Preheat	
-Temperature Min ( $T_{smin}$ )	150°C
-Temperature Max ( $T_{smax}$ )	200°C
-Time ( $t_s$ ) from ( $T_{smin}$ to $T_{smax}$ )	60-120seconds
Ramp-up rate ( $T_L$ to $T_p$ )	3°C /second max.
Liquids temperature ( $T_L$ )	217°C
Time ( $t_L$ ) maintained above $T_L$	60-150 seconds
Classification temperature ( $T_c$ )	See Table (1.2)
Time ( $t_p$ ) at $T_c - 5^\circ\text{C}$ ( $T_p$ should be equal to or less than $T_c$ .)	< 30 seconds
Ramp-down rate ( $T_p$ to $T_L$ )	6°C /second max.
Time 25°C to peak temperature	8 minutes max.

**T<sub>p</sub>**: maximum peak package body temperature, **T<sub>c</sub>**: the classification temperature.

For user (customer) **T<sub>p</sub>** should be equal to or less than **T<sub>c</sub>**.

**Table (1.2) Package Thickness/Volume and Classification Temperature ( $T_c$ )**

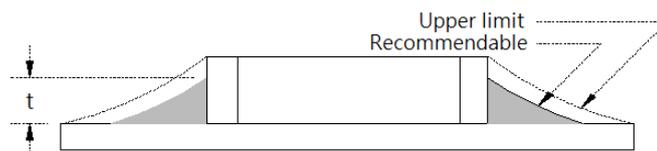
	Package Thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> 350-2000	Volume mm <sup>3</sup> >2000
PB-Free Assembly	<1.6mm	260°C	260°C	260°C
	1.6-2.5mm	260°C	250°C	245°C
	≥2.5mm	250°C	245°C	245°C

Reflow is referred to standard IPC/JEDEC J-STD-020F.

### 6-3. Soldering Volume

Accordingly increasing the solder volume, the mechanical stress to product is also increased. Exceeding solder volume may cause the failure of mechanical or electrical performance. Solder shall be used not to be exceeded as shown in the Figure below.

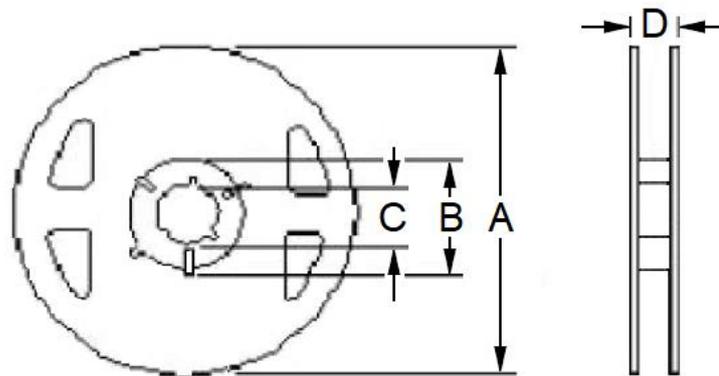
Minimum fillet height = soldering thickness + 25% product height.



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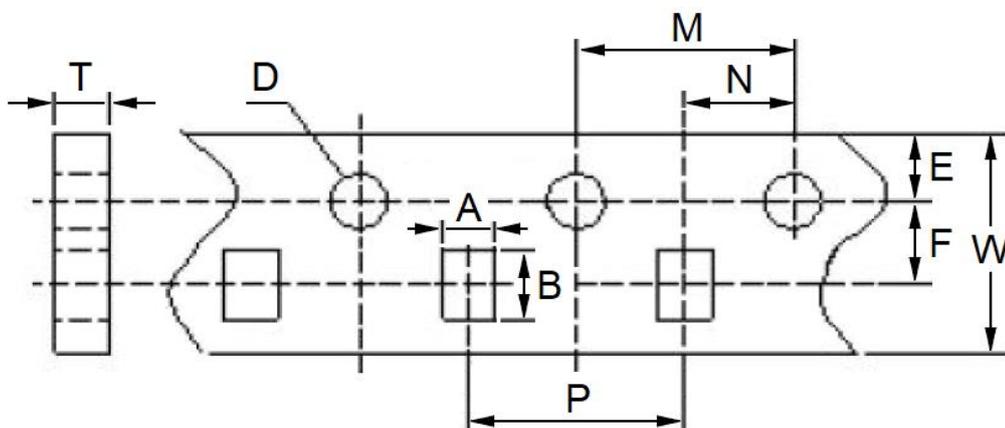
7. Packaging Information

7-1. Reel Dimension (Unit: mm)



Type	A	B	C	D
7"x8mm	180.0 Ref	60.0 Ref	13.0 Ref	14.4 Ref

7-2. Tape Dimension (Unit: mm)



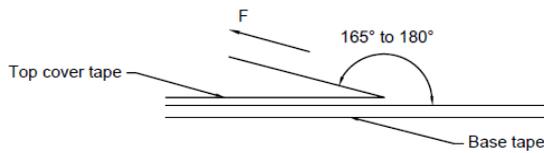
A	B	T	W	P
1.25 Ref	1.85 Ref	1.10 Ref	8.00 Ref	4.00 Ref
D	M	N	E	F
1.55 Ref	4.00±0.10	2.00±0.05	1.75±0.10	3.50 Ref

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### 7-3. Packaging Quantity (Unit: Pcs)

Chip/ Reel	4,000
Inner Carton	20,000
Outer Carton	200,000

### 7-4. Tearing Off Force



The force for tearing off cover tape is according to the follow table, in the arrow direction under the following conditions.

(Referenced ANSI/EIA-481-D-2008 of 4.11 standard)

Room Temp. (°C)	Room Humidity (%)	Room atm (hPa)	Tearing Speed (mm/min)
5~35	45~85	860~1060	300±10

Tape Size	8 mm	12 to 56 mm	72 mm or Wider
Tearing Off Force (grams)	10~100	10~130	10~150

## Application Notice

#### 1. Storage Conditions

To maintain the solderability of terminal electrodes:

- (a) Products meet IPC/JEDEC J-STD-020F standard-MSL, level 1.
- (b) Recommended products should be used within 12 months from the time of delivery.
- (c) The packaging material should be kept where no chlorine or sulfur exists in the air.

#### 2. Transportation

- (a) Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
- (b) Vacuum pick up is strongly recommended for individual components.
- (c) Bulk handling should ensure that abrasion and mechanical shock are minimized.

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