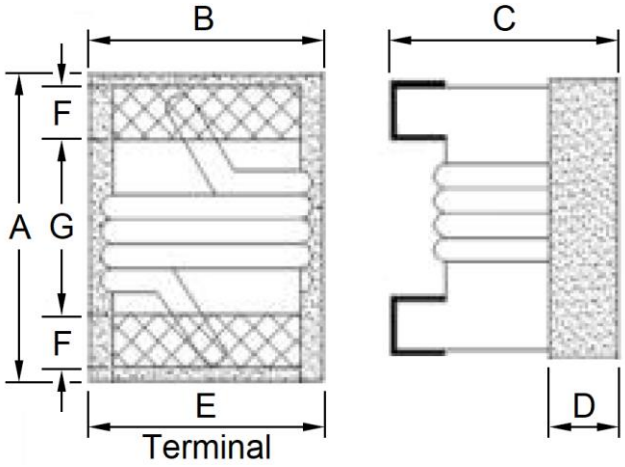
1. Part No. Expression

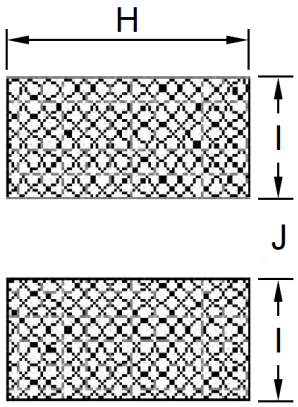
S C I 0 4 0 2 C 1 N 0 B

(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)

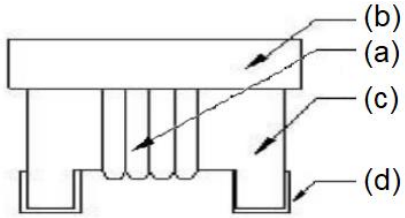




Recommended PCB Layout

A	B	C	D	E
1.19 Max	0.70 Max	0.66 Max	0.25 Ref	0.51 Ref
F	G	H	I	J
0.23 Ref	0.56 Ref	0.66 Ref	0.36 Ref	0.46 Ref

3. Material List



(a) Wire
(b) Epoxy
(c) Core
(d) Terminal

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
SCI0402C1N0☐	1.0	16	0.2V/250MHz	B, C, J, K	1360	0.045	12700
SCI0402C1N2☐	1.2	10	0.2V/250MHz	B, C, J, K	640	0.14	10400
SCI0402C1N3☐	1.3	10	0.2V/250MHz	B, C, J, K	640	0.14	10400
SCI0402C1N9☐	1.9	16	0.2V/250MHz	B, C, G, J, K	1040	0.07	11300
SCI0402C2N0☐	2.0	16	0.2V/250MHz	B, C, G, J, K	1040	0.07	11100
SCI0402C2N2☐	2.2	19	0.2V/250MHz	B, C, G, J, K	960	0.07	10800
SCI0402C2N4☐	2.4	15	0.2V/250MHz	B, C, G, J, K	790	0.068	10500
SCI0402C2N5☐	2.5	13	0.2V/250MHz	B, C, G, J, K	640	0.15	10400
SCI0402C2N7☐	2.7	16	0.2V/250MHz	B, C, G, J, K	640	0.12	10400
SCI0402C3N3☐	3.3	19	0.2V/250MHz	B, C, G, J, K	840	0.066	7000
SCI0402C3N6☐	3.6	19	0.2V/250MHz	B, C, G, J, K	840	0.066	6800
SCI0402C3N9☐	3.9	19	0.2V/250MHz	B, C, G, J, K	840	0.066	6000
SCI0402C4N3☐	4.3	18	0.2V/250MHz	B, C, G, J, K	700	0.091	6000

☐Tolerance: B=±0.1nH, C=±0.2nH, G=±2%, J=±5%, K=±10%

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

Part Number	Inductance (nH)	Q Typ	Test Frequency (L/Q)	Tolerance	Irms (mA) Typ	DCR (Ω) Max	SRF (MHz) Typ
SCI0402C4N7☐	4.7	15	0.2V/250MHz	B, C, G, J, K	640	0.13	4770
SCI0402C5N1☐	5.1	20	0.2V/250MHz	B, C, G, J, K	800	0.083	4800
SCI0402C5N6☐	5.6	20	0.2V/250MHz	G, J, K	760	0.083	4800
SCI0402C5N8☐	5.8	20	0.2V/250MHz	G, J, K	760	0.083	4800
SCI0402C6N2☐	6.2	20	0.2V/250MHz	G, J, K	760	0.083	4800
SCI0402C6N8☐	6.8	20	0.2V/250MHz	G, J, K	680	0.083	4800
SCI0402C7N3☐	7.3	20	0.2V/250MHz	G, J, K	680	0.12	4800
SCI0402C4N3☐	4.3	18	0.2V/250MHz	B, C, G, J, K	700	0.091	6000
SCI0402C7N5☐	7.5	22	0.2V/250MHz	G, J, K	680	0.1	4800
SCI0402C8N2☐	8.2	22	0.2V/250MHz	G, J, K	680	0.1	4400
SCI0402C8N7☐	8.7	18	0.2V/250MHz	G, J, K	480	0.2	4100
SCI0402C9N0☐	9.0	22	0.2V/250MHz	G, J, K	680	0.1	4160
SCI0402C9N1☐	9.1	22	0.2V/250MHz	G, J, K	680	0.1	4160
SCI0402C9N5☐	9.5	18	0.2V/250MHz	G, J, K	480	0.2	4000
SCI0402C10N☐	10	21	0.2V/250MHz	G, J, K	480	0.2	3900
SCI0402C11N☐	11	24	0.2V/250MHz	G, J, K	640	0.12	3680
SCI0402C12N☐	12	24	0.2V/250MHz	G, J, K	640	0.12	3600
SCI0402C13N☐	13	24	0.2V/250MHz	G, J, K	440	0.21	3450
SCI0402C15N☐	15	24	0.2V/250MHz	G, J, K	560	0.17	3280
SCI0402C16N☐	16	24	0.2V/250MHz	G, J, K	560	0.22	3100
SCI0402C18N☐	18	25	0.2V/250MHz	G, J, K	420	0.23	3100
SCI0402C19N☐	19	24	0.2V/250MHz	G, J, K	480	0.2	3040

☐Tolerance: B=±0.1nH, C=±0.2nH, G=±2%, J=±5%, K=±10%

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

Ceramic Wire Wound Inductor – *SCI0402C Series*

Part Number	Inductance (nH)	Q Typ	Test Frequency (L/Q)	Tolerance	Irms (mA) Typ	DCR (Ω) Max	SRF (MHz) Typ
SCI0402C20N☐	20	25	0.2V/250MHz	G, J, K	420	0.25	3000
SCI0402C22N☐	22	25	0.2V/250MHz	G, J, K	400	0.3	2800
SCI0402C23N☐	23	22	0.2V/250MHz	G, J, K	400	0.3	2720
SCI0402C24N☐	24	25	0.2V/250MHz	G, J, K	400	0.3	2700
SCI0402C27N☐	27	24	0.2V/250MHz	G, J, K	400	0.3	2480
SCI0402C30N☐	30	25	0.2V/250MHz	G, J, K	400	0.35	2350
SCI0402C33N☐	33	24	0.2V/250MHz	G, J, K	400	0.4	2350
SCI0402C36N☐	36	24	0.2V/250MHz	G, J, K	320	0.44	2320
SCI0402C39N☐	39	25	0.2V/250MHz	G, J, K	200	0.55	2100
SCI0402C40N☐	40	24	0.2V/250MHz	G, J, K	320	0.65	2240
SCI0402C43N☐	43	25	0.2V/250MHz	G, J, K	100	0.81	2030
SCI0402C47N☐	47	25	0.2V/250MHz	G, J, K	150	0.83	2100
SCI0402C51N☐	51	25	0.2V/250MHz	G, J, K	100	0.82	1750
SCI0402C56N☐	56	22	0.2V/250MHz	G, J, K	100	0.97	1760
SCI0402C68N☐	68	22	0.2V/250MHz	G, J, K	100	1.12	1620
SCI0402C72N☐	72	22	0.2V/250MHz	G, J, K	30	2	1260
SCI0402C77N☐	77	22	0.2V/250MHz	G, J, K	50	1.8	1260
SCI0402C82N☐	82	22	0.2V/250MHz	G, J, K	50	1.55	1260
SCI0402CR10☐	100	22	0.2V/250MHz	G, J, K	30	2	1160
SCI0402CR12☐	120	22	0.2V/100MHz	G, J, K	110	2.4	1000
SCI0402CR18☐	180	8	0.2V/100MHz	G, J, K	50	2.7	700
SCI0402CR22☐	220	8	0.2V/100MHz	G, J, K	50	4	700

☐Tolerance: B=±0.1nH, C=±0.2nH, G=±2%, J=±5%, K=±10%

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

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.

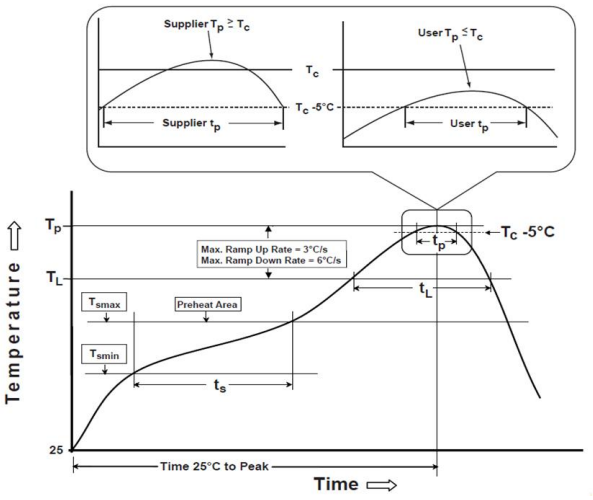
(b) 350°C tip temperature (Max.)

(c) Never contact the ceramic with the iron tip

(d) 1.0mm tip diameter (Max.)

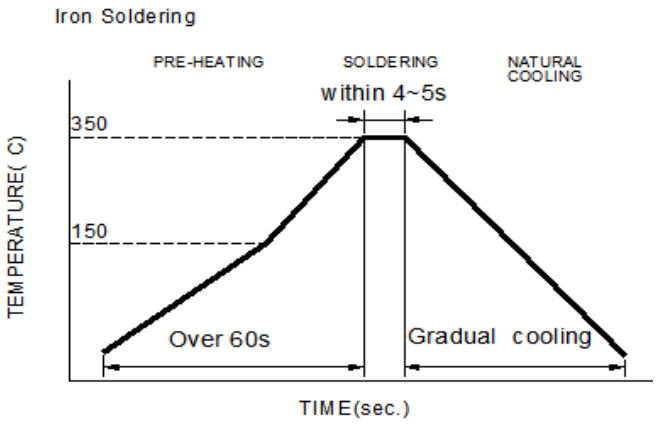
(e) Use a 20 watt soldering iron with tip diameter of 1.0mm

(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

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

Table (1.1) Reflow Profiles

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

Tp: maximum peak package body temperature, **Tc**: the classification temperature.

For user (customer) **Tp** should be equal to or less than **Tc.**

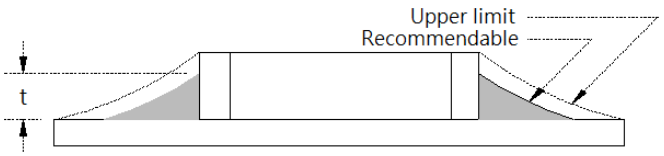
Table (1.2) Package Thickness/Volume and Classification Temperature (T_c)

	Package Thickness	Volume mm^3 <350	Volume mm^3 350-2000	Volume mm^3 >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.

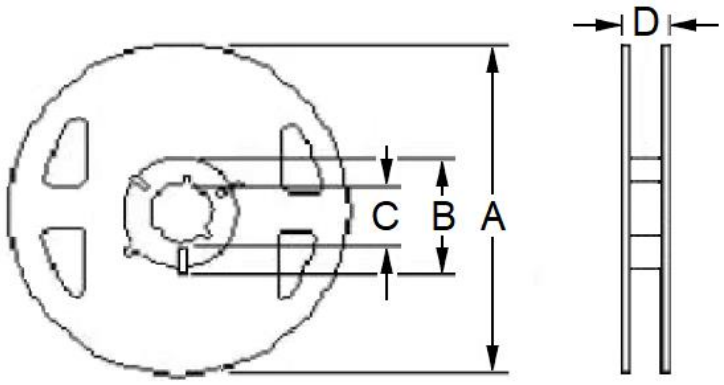
6-3. Soldering Volume

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.



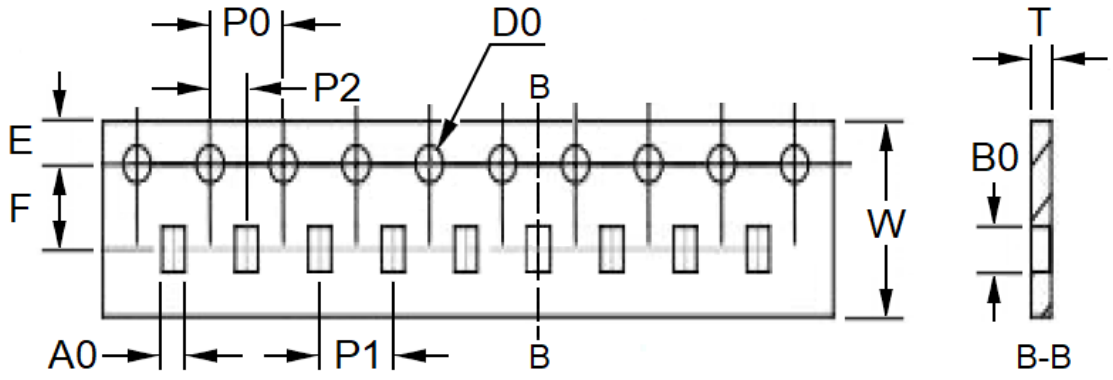
7. Packaging Information

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)



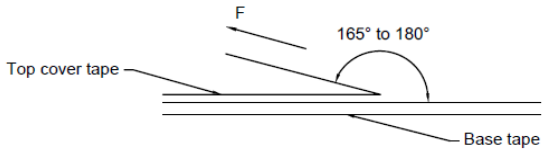
A0	B0	T	W	P0
1.23 Ref	0.67 Ref	0.75 Ref	8.00 Ref	4.00 Ref
P1	P2	D0	E	F
2.00 Ref	2.00 Ref	1.55 Ref	1.75 Ref	3.50 Ref

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

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.